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**Intelligent transport systems —  
Spatio-temporal data dictionary  
for cooperative ITS and automated  
driving systems**

*Systèmes de transport intelligents — Dictionnaire de données spatio-temporelles pour les systèmes de conduite automatisée et les STI coopératifs*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see [www.iso.org/directives](http://www.iso.org/directives)).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see [www.iso.org/patents](http://www.iso.org/patents)).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: [www.iso.org/iso/foreword.html](http://www.iso.org/iso/foreword.html).

This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*.

## Introduction

Cooperative ITS and automated driving systems as energy-saving technology have attracted much attention. These systems are expected to reduce traffic congestion and achieve smoother transportation.

Recently, car manufacturers, car parts manufacturers and IT companies have started driving tests for automated driving systems on the public road. Several car manufacturers have released the schedule of commercial viability and automated driving systems and are expected to put it into practical use within two or three years.

In the existing ITS applications, geographical information are optimally designed for individual systems. Thus, a large amount of resources are required in order to create, provide and maintain this information.

In the future, spatio-temporal data for ITS which includes static and dynamic temporal-spatial data will be required for Cooperative ITS and automated driving systems. In order to create, provide and maintain these data, much more resources will be required.

Spatio-temporal data can be used for different types of application systems. A common understanding and sharing of spatio-temporal data is formulated by this data dictionary. For instance, spatio-temporal data for ITS includes location information or has relationships with location.

Standardization of spatio-temporal data dictionary is expected to contribute to research and development and dissemination of cooperative ITS and automated systems by stakeholders.

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# Intelligent transport systems — Spatio-temporal data dictionary for cooperative ITS and automated driving systems

## 1 Scope

This document describes a spatio-temporal data dictionary for cooperative ITS and automated driving systems.

This data dictionary includes static data and dynamic data.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1

#### **aggregate domain**

data concept that defines a grouping of data elements and/or data frames

### 3.2

#### **data concept**

item that may be stored in a data dictionary that refers to an abstraction or thing in the natural world that can be identified with explicit boundaries and meaning and whose properties and behaviour all follow the same rules

Note 1 to entry: Data concepts can be classified into the following types: object class, value domain, data element, aggregate domain, data frame, message, interface dialogue, dictionary document, or module.

### 3.3

#### **data concept type**

categorization of the kind of data concept

### 3.4

#### **data dictionary**

listing of data concepts and their meta-attributes in a consistent format

### 3.5

#### **data element**

data concept represented by a specific value domain that describes a single atomic property about an object class

Note 1 to entry: A data element is composed of an object class, a property of the represented object class and a value domain.

### 3.6

#### **data frame**

data concept represented by a specific aggregate domain that describes information of interest through a useful grouping of more atomic properties about one or more object classes

Note 1 to entry: The grouping may be a set, sequence, or a choice.

### 3.7

#### **dynamic data**

data which has short life-span data such as a position of vehicle

### 3.8

#### **message**

data concept that is a grouping of data elements, data frames, or data elements and data frames that is used to convey a complete set of information

Note 1 to entry: For the purposes of this document, a message is an abstract description; it is not a specific instance.

### 3.9

#### **module**

data concept that contains the formal syntactic definition, and optionally the semantic definition, of a defined set of other data concepts that are all version-controlled as a single unit

Note 1 to entry: A module can be represented in multiple languages (e.g. ASN.1 or XML Schema) and compiled by computer systems.

### 3.10

#### **source**

document or other reference that was used to develop the pertinent data concept

### 3.11

#### **spatio-temporal** (adjective)

relating to both space and time

### 3.12

#### **static data**

data which do not change automatically

### 3.13

#### **value domain**

data concept that defines a set of permissible values

## 4 Abbreviated terms

|       |                                                                           |
|-------|---------------------------------------------------------------------------|
| ACC   | Adaptive Cruise Control systems                                           |
| APS   | Assisted Parking System                                                   |
| CACC  | Cooperative adaptive cruise control                                       |
| CIWS  | Cooperative Intersection signal information and violation Warning Systems |
| CSWS  | Curve Speed Warning Systems                                               |
| FVCMS | Forward Vehicle Collision Mitigation Systems                              |
| GNSS  | Global Navigation Satellite System                                        |
| ITS   | Intelligent Transport Systems                                             |



|       |                                            |
|-------|--------------------------------------------|
| JARI  | Japan Automobile Research Institute        |
| LCDAS | Lane Change Decision Aid Systems           |
| LKAS  | Lane Keeping Assistance Systems            |
| TISA  | Traveller Information Services Association |

## 5 Contents and descriptive names of data dictionary

The data dictionary consists of the following items.

|                            |                                                                      |
|----------------------------|----------------------------------------------------------------------|
| Data concept name          | descriptive name of data concepts                                    |
| data concept type          | module/message/data frame/data element/aggregate domain/value domain |
| data status category       | dynamic/static                                                       |
| Definition and description | Definition and description of data contents                          |
| Data structure             | definition of data content by XML schema                             |
| Issued by                  | authors who published the source documents                           |
| source documents           | original documents                                                   |
| remark                     | other information                                                    |

## 6 Data dictionary description

This data dictionary is described alphabetically.

[a]

absolute geo coordinate

|                            |                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | AbsoluteGeoCoordinate                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static               |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                              | Data concept type    | data element         |
| Definition and description | AbsoluteGeoCoordinate specifies a geo position with longitude and latitude values with a deca micro degree accuracy stored in 24 bit integer value.<br>Longitude: 24-bit representation of a longitude value in deca micro degree precision.<br>Latitude: 24-bit representation of a latitude value in deca micro degree precision.<br>Altitude: Elevation of location in metres above/below Mean Sea Level. |                      |                      |
| Data structure             | <pre>&lt;xs:complexType name="AbsoluteGeoCoordinate"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="longitude" type="tdt:IntSi24"/&gt;     &lt;xs:element name="latitude" type="tdt:IntSi24"/&gt;     &lt;xs:element name="altitude" type="tdt:IntSiLoMB" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre>                                                                        |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                              | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                      |

## acceleration

|                            |                                                                                                                                                                                                                                                                               |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Acceleration                                                                                                                                                                                                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                               | Data concept type    | data element                  |
| Definition and description | Acceleration provides a value and unit of vehicle acceleration.<br>Value of unit of acceleration is given by unit code which is assigned as 0,01 m/sec*sec, 0,02 m/sec*sec, 0,1 m/sec*sec, 0,25 m/sec*sec, 1 m/sec*sec, 0,01 G and 0,02 G.                                    |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="Acceleration" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfAcceleration" type="xs:unsignedInt"/&gt;     &lt;xs:element name="unitCodeOfAcceleration" type="FourBitCode"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                               |                      |                               |

## acceleration set

|                            |                                                                                                                                                                                                                                                                                                               |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Acceleration Set                                                                                                                                                                                                                                                                                              | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                               | Data concept type    | data element                  |
| Definition and description | Acceleration Set provides accelerations of three axial directions of vehicle.                                                                                                                                                                                                                                 |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="AccelerationSet"&gt;   &lt;xs:element name="longitudinalAcceleration" type="Acceleration"/&gt;   &lt;xs:element name="lateralAcceleration" type="Acceleration"/&gt;   &lt;xs:element name="verticalAcceleration" type="VerticalAcceleration"/&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                               |                      |                               |

## acceleration confidence

|                            |                                                                                                                                                              |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Acceleration confidence                                                                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                                                                              | Data concept type    | data element                  |
| Definition and description | AccelerationConfidence provides the confidence of acceleration of the vehicle.<br>It is a confidence level of 95 % of reliability.                           |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="AccelerationConfidence" &gt;   &lt;xs:element name="accelerationConfidence" type="Confidence"/&gt; &lt;/xs:simpleType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                              |                      |                               |

accuracy millimetre

|                            |                                                                                                                                                                                               |                      |                |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | AccuracyMillimetre                                                                                                                                                                            | Data status category | static         |
|                            |                                                                                                                                                                                               | Data concept type    | value domain   |
| Definition and description | It is one of the accuracy expressions for a length or distance.<br>Unit is a millimetre.                                                                                                      |                      |                |
| Data structure             | <pre>&lt;xs:simpleType name="AccuracyMillimetre"&gt;   &lt;xs:restriction base="xs:float"&gt;     &lt;xs:minInclusive value="0,0"/&gt;   &lt;/xs:restriction&gt; &lt;/xs:simpleType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                               | source document      | ISO 22837:2009 |
| Remarks                    |                                                                                                                                                                                               |                      |                |

advisory point

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | AdvisoryPoint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data concept type    | data element   |
| Definition and description | Advisor Point provides a location and contents of the advisory on the road.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="AdvisoryPoint"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadSectionId" type="ID32bit"/&gt;     &lt;xs:element name="roadElementId" type="ID32bit"/&gt;     &lt;xs:element name="advisoryPointId" type="ID32bit"/&gt;     &lt;xs:element name="positionStartAdvisoryPoint" type="PointLocation"/&gt;     &lt;xs:element name="positionEndAdvisoryPoint" type="PointLocation" minOccurs="0"/&gt;     &lt;xs:element name="lengthAdvisoryPointFromStartIPC" type="Length" minOccurs="0"/&gt;     &lt;xs:element name="numAdvisoryPointFromStartIPC" type="xs:unsignedInt" minOccurs="0"/&gt;     &lt;xs:element name="lengthAdvisorySection" type="Length" minOccurs="0"/&gt;     &lt;xs:element name="advisoryAttribute" type="FourDigitCode" minOccurs="0"/&gt;     &lt;xs:element name="advisoryText" type="xs:string" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |

## altitude

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Altitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | value domain   |
| Definition and description | <p>It provides a value of the Altitude of ITRF94 coordinate.</p> <p>Unit of standard resolution is 10 mm and unit of high resolution is 1 cm.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="Altitude"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="StandardResolutionAltitude" minOccurs="0"&gt;       &lt;xs:simpleType &gt;         &lt;xs:restriction base="FiveDigitSignedInt"/&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="HighResolutionAltitude" minOccurs="0"&gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="SevenDigitSignedInt"/&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |

## ambient air pressure

|                            |                                                                                                                                                                                        |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AmbientAirPressure                                                                                                                                                                     | Data status category | dynamic                       |
|                            |                                                                                                                                                                                        | Data concept type    | data element                  |
| Definition and description | <p>It provides an ambient air pressure sensed by OBU/RSU conformity SAE J2735</p> <p>The value of data expresses 1,090 hPa from 580 hPa. Value "0" means "unknown", unit is 2 hPa.</p> |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name=" AmbientAirPressure" &gt;   &lt;xs:element name="ambientAirPressure" type="xs:unsignedByte"/&gt; &lt;/xs:simpleType&gt;</pre>                             |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                        |                      |                               |

angle of curved road

|                            |                                                                              |                      |                     |
|----------------------------|------------------------------------------------------------------------------|----------------------|---------------------|
| Data name                  | AngleOfCurvedRoad                                                            | Data status category | static              |
|                            |                                                                              | Data concept type    | value domain        |
| Definition and description | Central angle between the curve start point and the curve end point [radian] |                      |                     |
| Data structure             | <xs:simpleType name="AngleOfCurvedRoad" type="EXTERNAL"/>                    |                      |                     |
| Issued by                  |                                                                              | source document      | ISO 11067:2015 CSWS |
| Remarks                    |                                                                              |                      |                     |

availability of moving adjoining lane

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | AvailabilityOfMovingAdjoining Lane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | value domain   |
| Definition and description | It is one of the attributes of the lane. It provides availability of moving to adjoining lanes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                |
| Data structure             | <pre>&lt;xs:simpleType name="AvailabilityMovingAdjoiningLane"&gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="do not move to right and left"/&gt;         &lt;xs:enumeration value="do not move to right and can move to left"/&gt;         &lt;xs:enumeration value="can move to right and does not move to left"/&gt;         &lt;xs:enumeration value="can move to right and left"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="TwoBitCode"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                |

available service

|                            |                                                                                                                          |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | AvailableService                                                                                                         | Data status category | static       |
|                            |                                                                                                                          | Data concept type    | data element |
| Definition and description | This is services in Parking Facility<br>(i.e. fuel station, car wash, toilet, restaurant, shop, shower room, break room) |                      |              |

|                |                                                                          |                 |                    |
|----------------|--------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <xs:simpleType name=" AvailableService" type="SixteenBitAssignedCode" /> |                 |                    |
| Issued by      |                                                                          | source document | ISO 16787:2016 APS |
| Remarks        |                                                                          |                 |                    |

## axle location

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AxleLocation                                                                                                                                                                                                                                                                                                                                                                                                               | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | aggregate domain              |
| Definition and description | <p>This is location of the axle of the vehicle. Location is shown by the length from a bumper. conformity SAE J1939</p> <p>Unit value of location is given by 4 bit code which is assigned as 0,01 m, 0,05 m, 0,1 m, 0,2 m.</p>                                                                                                                                                                                            |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="AxleLocation"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="LRPos" type="FourBitCode" /&gt;     &lt;xs:element name="FRPos" type="FourBitCode" /&gt;     &lt;xs:element name="valueOfAlexPositionFromBumper" type="ThreeDigitUnsigned-Int"/&gt;     &lt;xs:element name="unitOfAlexPosition" type="FourBitCode" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    | Real value of location is the product of a valueOfAlexPosition and unitOfAlex.                                                                                                                                                                                                                                                                                                                                             |                      |                               |

## axle weight

|                            |                                                                                                                                                                                                |                      |              |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | AxleWeight                                                                                                                                                                                     | Data status category | static       |
|                            |                                                                                                                                                                                                | Data concept type    | value domain |
| Definition and description | <p>It provides the weight of the axle of vehicle. conformity SAE J1939</p> <p>Unit value of weight is given by 4 bit code which is assigned as 0,1 Kg, 0,2 Kg, 0,5 Kg, 1 kg, 10 Kg, 20 Kg.</p> |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:complexType name="AxleWeight"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfWeight" type="xs:unsignedInt"/&gt;     &lt;xs:element name="unitOfWeight" minOccurs="0"&gt;       &lt;xs:simpleType&gt;         &lt;xs:union&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="xs:string"&gt;               &lt;xs:enumeration value="0,1Kg"/&gt;               &lt;xs:enumeration value="0,2Kg"/&gt;               &lt;xs:enumeration value="0,5Kg"/&gt;               &lt;xs:enumeration value="1Kg"/&gt;               &lt;xs:enumeration value="10Kg"/&gt;               &lt;xs:enumeration value="20Kg"/&gt;             &lt;/xs:restriction&gt;           &lt;/xs:simpleType&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="FourBitCode"/&gt;           &lt;/xs:simpleType&gt;         &lt;/xs:union&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document | proposed CITS data dictionary |
| Remarks        | Real weight is the product of a valueOfWeight and a unitOfWeight.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                               |

## azimuth

|                            |                                                                                                                                                                                                                             |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Azimuth                                                                                                                                                                                                                     | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                             | Data concept type    | value domain                  |
| Definition and description | It provides an angle between a direction of target and direction of reference of the horizontal plane. Generally, direction of reference is north and clockwise.                                                            |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="Azimuth" &gt;   &lt;xs:element name="azimuthValue" type="xs:positiveInteger" /&gt;   &lt;xs:element name="azimuthUnit" type="AzimuthUnit" minOccurs="0" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    | Real value of Azimuth is the product of an azimuthValue and azimuthUnit.                                                                                                                                                    |                      |                               |

## azimuth and length

|                            |                                                                                                                                                   |                      |                  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | AzimuthAndLength                                                                                                                                  | Data status category | dynamic          |
|                            |                                                                                                                                                   | Data concept type    | aggregate domain |
| Definition and description | <p>It provides a relative position from reference point to target object.</p> <p>A relative position is expressed by an azimuth and a length.</p> |                      |                  |

|                |                                                                                                                                                                                                         |                 |                    |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre>&lt;xs:complexType name="AzimuthAndLength"&gt;   &lt;xs:element name="valueOfAzimuth" type="Azimuth" /&gt;   &lt;xs:element name="valueOfLength" type="Length" /&gt; &lt;/xs:complexType&gt;</pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                         | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                         |                 |                    |

## azimuth attribute

|                            |                                                                                                                                                                                                                                                                                             |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthAttribute                                                                                                                                                                                                                                                                            | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                             | Data concept type    | data frame                    |
| Definition and description | AzimuthAttribute provides objects and unit of azimuth.                                                                                                                                                                                                                                      |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="AzimuthAttribute"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="azimuthObject" type="AzimuthObject" minOccurs="0" /&gt;     &lt;xs:element name="azimuthUnit" type="AzimuthUnit" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                             |                      |                               |

## azimuth confidence

|                            |                                                                                                                                                                                                                                                                                                  |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthConfidence                                                                                                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                  | Data concept type    | data frame                    |
| Definition and description | AzimuthConfidence is composed of heading confidence and direction of road confidence.                                                                                                                                                                                                            |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="AzimuthConfidence" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="headingConfidence" type="HeadingConfidence"/&gt;     &lt;xs:element name="directionOfRoadConfidence" type="DirectionOfRoadConfidence"/&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                  |                      |                               |

## azimuth expression

|                            |                                                                |                      |            |
|----------------------------|----------------------------------------------------------------|----------------------|------------|
| Data concept name          | AzimuthExpression                                              | Data status category | dynamic    |
|                            |                                                                | Data concept type    | data frame |
| Definition and description | AzimuthExpression is composed of Azimuth and AzimuthAttribute. |                      |            |



|                |                                                                                                                                                                                                                                                                 |                 |                               |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre>&lt;xs:complexType name="AzimuthExpression" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="azimuth" type="Amizuth" /&gt;     &lt;xs:element name="azimuthAttribute" type="AzimuthAttribute"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                            | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                 |                 |                               |

## azimuth object

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthObject                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | data frame                    |
| Definition and description | AzimuthObject indicates the expression object (i.e. device, road, event and region) of Azimuth.                                                                                                                                                                                                                                                                                                                                                 |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name=" AzimuthObject"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="azimuthObjectDevice" type=" AzimuthObjectDevice" /&gt;     &lt;xs:element name="azimuthObjectRoad" type="AzimuthObjectRoad" /&gt;     &lt;xs:element name="azimuthObjectEvent" type="AzimuthObjectEvent" /&gt;     &lt;xs:element name="azimuthObjectRegion" type="AzimuthObjectRegion" /&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                               |

## azimuth object device

|                            |                                                                                    |                      |                               |
|----------------------------|------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthObjectDevice                                                                | Data status category | dynamic                       |
|                            |                                                                                    | Data concept type    | data frame                    |
| Definition and description | It indicates an OBU or RSU device for azimuth object.                              |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name=" AzimuthObjectDevice" type="EXTERNAL"/&gt;</pre>      |                      |                               |
| Issued by                  | JARI                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    | Data Type "EXTERNAL" represents to be defined by other organization, or undefined. |                      |                               |

## azimuth object event

|                            |                                            |                      |            |
|----------------------------|--------------------------------------------|----------------------|------------|
| Data concept name          | AzimuthObjectEvent                         | Data status category | dynamic    |
|                            |                                            | Data concept type    | data frame |
| Definition and description | It indicates the event for azimuth object. |                      |            |

|                |                                                                                    |                 |                               |
|----------------|------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="AzimuthObjectEvent" type="EXTERNAL"/>                         |                 |                               |
| Issued by      | JARI                                                                               | source document | proposed CITS data dictionary |
| Remarks        | Data Type "EXTERNAL" represents to be defined by other organization, or undefined. |                 |                               |

## azimuth object region

|                            |                                                                                    |                      |                               |
|----------------------------|------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthObjectRegion                                                                | Data status category | dynamic                       |
|                            |                                                                                    | Data concept type    | data frame                    |
| Definition and description | AzimuthObjectRegion indicates the region for azimuth object.                       |                      |                               |
| Data structure             | <xs:simpleType name="AzimuthObjectRegion" type="EXTERNAL"/>                        |                      |                               |
| Issued by                  | JARI                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    | Data Type "EXTERNAL" represents to be defined by other organization, or undefined. |                      |                               |

## azimuth object road

|                            |                                                                                    |                      |                               |
|----------------------------|------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthObjectRoad                                                                  | Data status category | dynamic                       |
|                            |                                                                                    | Data concept type    | data frame                    |
| Definition and description | AzimuthObjectRoad indicates the road for azimuth object.                           |                      |                               |
| Data structure             | <xs:simpleType name="AzimuthObjectRoad" type="EXTERNAL"/>                          |                      |                               |
| Issued by                  | JARI                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    | Data Type "EXTERNAL" represents to be defined by other organization, or undefined. |                      |                               |

## azimuth type

|                            |                                                       |                      |                               |
|----------------------------|-------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthType                                           | Data status category | dynamic                       |
|                            |                                                       | Data concept type    | data element                  |
| Definition and description | AzimuthType indicates "azimuth" or "direction".       |                      |                               |
| Data structure             | <xs:simpleType name="AzimuthType" type="xs:boolean"/> |                      |                               |
| Issued by                  | JARI                                                  | source document      | proposed CITS data dictionary |
| Remarks                    | True indicates "azimuth", False indicates "direction" |                      |                               |

## azimuth unit

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | AzimuthUnit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | value domain                  |
| Definition and description | AzimuthUnit indicates minimum unit of azimuth.<br>Value of Unit of Azimuth is provided by 4 bit code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="AzimuthUnit" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:integer"&gt;         &lt;xs:enumeration value="90"/&gt;         &lt;xs:enumeration value="45"/&gt;         &lt;xs:enumeration value="22,5"/&gt;         &lt;xs:enumeration value="5"/&gt;         &lt;xs:enumeration value="2"/&gt;         &lt;xs:enumeration value="1"/&gt;         &lt;xs:enumeration value="0,5"/&gt;         &lt;xs:enumeration value="0,2"/&gt;         &lt;xs:enumeration value="0,1"/&gt;         &lt;xs:enumeration value="0,05"/&gt;         &lt;xs:enumeration value="0,0125"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="FourBitCode"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                               |

[b]

bad weather condition

|                            |                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | BadWeatherCondition                                                                                                                                                                                                                                                                                                        | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                            | Data concept type    | data frame                    |
| Definition and description | BadWeatherCondition indicates weather condition such as rain, sunshine and ambient air pressure.                                                                                                                                                                                                                           |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name=" BadWeatherCondition" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="rain" type="Rain" /&gt;     &lt;xs:element name="sunshine" type="Sunshine" /&gt;     &lt;xs:element name="ambientAirPressure" type="AmbientAirPressure" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                            |                      |                               |

bearing

|                            |                                                                                                                                                                               |                      |                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | Bearing                                                                                                                                                                       | Data status category | dynamic              |
|                            |                                                                                                                                                                               | Data concept type    | value domain         |
| Definition and description | Bearing stores the value of a bearing angle in a compressed way. The full circle is divided into 256 sectors which yields a precision of 360/256 °.                           |                      |                      |
| Data structure             | <pre>&lt;xs:complexType name="Bearing"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="value" type="tdt:IntUnTi"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                      |
| Issued by                  |                                                                                                                                                                               | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                               |                      |                      |

boundary object

|                            |                                                                                         |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | BoundaryObject                                                                          | Data status category | static       |
|                            |                                                                                         | Data concept type    | data element |
| Definition and description | It provides a feature object for indicating the boundary of an individual parking space |                      |              |

|                |                                                                                                                                                                                                                                                                                                             |                 |                    |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="BoundaryObject"&gt;   &lt;xs:element name="EntranceLeftsideObjectType" type="ObjectCode" /&gt;   &lt;xs:element name="EntranceRightsideObjectType" type="ObjectCode" /&gt;   &lt;xs:element name="RearsideObjectType" type="ObjectCode" /&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                             | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                             |                 |                    |

## brake applied pressure

|                            |                                                                                                                                                   |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | BrakeAppliedPressure                                                                                                                              | Data status category | dynamic                       |
|                            |                                                                                                                                                   | Data concept type    | value domain                  |
| Definition and description | BrakeAppliedPressure indicates operating pressure or target pressure by brake pressure ratio that is expressed by dividing full pressure into 15. |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="BrakeAppliedPressure" type="FourBitCode"/&gt; </pre>                                                                |                      |                               |
| Issued by                  | JARI                                                                                                                                              | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                   |                      |                               |

## brake applied status

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | BrakeAppliedStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data status category | dynamic      |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | data element |
| Definition and description | BrakeAppliedStatus indicates status of operating brake or target brake and type of brake.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |              |
| Data structure             | <pre> &lt;xs:complexType name="BrakeAppliedStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="brakeType_1"&gt;       &lt;xs:simpleType&gt;         &lt;xs:union&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="xs:string"&gt;               &lt;xs:enumeration value="manual"/&gt;               &lt;xs:enumeration value="automatic"/&gt;             &lt;/xs:restriction&gt;           &lt;/xs:simpleType&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="TwoBitCode"/&gt;           &lt;/xs:simpleType&gt;         &lt;/xs:union&gt;       &lt;/xs:element&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; </pre> |                      |              |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                               |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
|           | <pre>&lt;/xs:union&gt; &lt;/xs:simpleType&gt; &lt;/xs:element&gt; &lt;xs:element name="brakeType_2" &gt;   &lt;xs:simpleType&gt;     &lt;xs:union&gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="xs:string"&gt;           &lt;xs:enumeration value="mainBrake"/&gt;           &lt;xs:enumeration value="boostBrake"/&gt;           &lt;xs:enumeration value="parkingBrake"/&gt;           &lt;xs:enumeration value="antiLockBrake"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="TwoBitCode"/&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:union&gt;   &lt;/xs:simpleType&gt; &lt;/xs:element&gt; &lt;xs:element name="brakeApplied" &gt;   &lt;xs:simpleType&gt;     &lt;xs:union&gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="xs:string"&gt;           &lt;xs:enumeration value="unavailable"/&gt;           &lt;xs:enumeration value="off"/&gt;           &lt;xs:enumeration value="on-notoperate"/&gt;           &lt;xs:enumeration value="on-operate"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="TwoBitCode"/&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:union&gt;   &lt;/xs:simpleType&gt; &lt;/xs:element&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | source document | proposed CITS data dictionary |
| Remarks   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                               |

## brake status

|                            |                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | BrakeStatus                                                                                                                                                                                                                                                                             | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                         | Data concept type    | data frame                    |
| Definition and description | BrakeStatus indicates operating status of brake and brake pressure.                                                                                                                                                                                                                     |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="BrakeStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="brakeAppliedStatus" type="BrakeAppliedStatus"/&gt;     &lt;xs:element name="brakeAppliedPressure" type="BrakeAppliedPressure" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                         |                      |                               |

## bridge and tunnel

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | BridgeAndTunnel                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data concept type    | data element   |
| Definition and description | It provides the structural specifications of a bridge and tunnel and also provides information on isolated crossing roads.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="BridgeTunnel"/&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadElementId" type="ID32bit"/&gt;     &lt;xs:element name="roadStructureId" type="ID32bit"/&gt;     &lt;xs:element name="roadStructureType" type="TwoDigitUnsignedInt"/&gt;     &lt;xs:element name="locationBridgeTunnel" type="PointLocation"/&gt;     &lt;xs:element name="lengthBridgeTunnel" type="Length"/&gt;     &lt;xs:element name="lengthFromStartRoadElement" type="Length"/&gt;     &lt;xs:element name="heightInfo" type="Height" minOccurs="0"/&gt;     &lt;xs:element name="crossingInfo" type="GradeSeparatedCrossingRoad" /&gt;     &lt;xs:element name="nameOfBridgeTunnel" type="xs:string" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                |

## bumper height

|                            |                                                                                                        |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | BumperHeight                                                                                           | Data status category | static       |
|                            |                                                                                                        | Data concept type    | data element |
| Definition and description | BumperHeight provides the height of a front bumper and rear bumper.<br>Unit of height is a centimetre. |                      |              |

|                |                                                                                                                                                                                                                                                                |                 |                               |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre>&lt;xs:complexType name="BumperHeight"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="heightOfFron" type="xs:unsignedInt"/&gt;     &lt;xs:element name="heightOfRear" type="xs:unsignedInt"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                           | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                |                 |                               |

[c]

cancel effective range

|                            |                                                                                 |                      |                               |
|----------------------------|---------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CancelEffectiveRange                                                            | Data status category | dynamic                       |
|                            |                                                                                 | Data concept type    | data frame                    |
| Definition and description | CancelEffectiveRange is the flag which enables an effective range or disable.   |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="CancelEffectiveRange" type="xs:boolean"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    | True indicates "disable", False indicates "enable"                              |                      |                               |

cargo weight

|                            |                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CargoWeight                                                                                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                            | Data concept type    | value domain                  |
| Definition and description | <p>It is the loading weight of cargo for a vehicle.</p> <p>conformity SAE J1939</p> <p>Unit value of weight is given by unit code which is assigned as 0,1 Kg, 0,2 Kg, 0,5 Kg, 1 Kg, 10 Kg, 20 Kg.</p>                                                                     |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="CargoWeight"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfWeight" type="xs:unsignedInt"/&gt;     &lt;xs:element name="unitOfWeight" type="UnitOfWeight" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    | Real weight is the product of the value of weight and unit of weight.                                                                                                                                                                                                      |                      |                               |

cartographic

|                   |               |                      |            |
|-------------------|---------------|----------------------|------------|
| Data concept name | Cartographics | Data status category | static     |
|                   |               | Data concept type    | data frame |



|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Definition and description | <p>Cartographics are the data to make a map, and are used for drawing the background map except the road network in ITS.</p> <p>Cartographics consists of data blocks of CartographicFeatures</p>                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                |
| Data structure             | <pre>&lt;xs:complexType name="Cartgraphic"&gt;   &lt;xs:sequence maxOccurs="unbounded"&gt;     &lt;xs:element name="displayClass" type="OneDigitInt"/&gt;     &lt;xs:element name="numCartographicFeature" type="TwoDigitInt"/&gt;     &lt;xs:element name="cartographicFeatureList" &gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="cartographicFeature" type="CartographicFeature" /&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |

## cartographic feature

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | CartographicsFeature                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data frame     |
| Definition and description | <p>CartographicFeatures are sub-blocks of Cartographics.</p> <p>Each data block of CartographicFeature is categorized by the Feature Types.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="CartographicFeature"&gt;   &lt;xs:sequence maxOccurs="unbounded"&gt;     &lt;xs:element name="cartographicFeatureType" type="FourDigitCode"/&gt;     &lt;xs:element name="displayClass" type="OneDigitInt" numminOccurs="0"/&gt;     &lt;xs:element name="numCartographicFigureElement" type="FourDigitInt"/&gt;     &lt;xs:element name="cartographicFigureElementList" &gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="cartographicFigureElement" type="CartographicFigureElement"/&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |

## cartographic figure element

|                   |                            |                      |            |
|-------------------|----------------------------|----------------------|------------|
| Data concept name | CartographicsFigureElement | Data status category | static     |
|                   |                            | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Definition and description | Cartographic Figure element provides the shape data of individual map objects.<br>There are three types: point, polyline, polygon, in cartographics figure elements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |
| Data structure             | <pre> &lt;xs:complexType name="CartographicFigureElement"&gt;   &lt;xs:element name="figureElementId" type="ID32bit"/&gt;   &lt;xs:element name="displayClass" type="OneDigitUnsignedInt" numminOccurs="0"/&gt;   &lt;xs:element name="cartographicFeatureType" type="FourDigitCode" numminOccurs="0"/&gt;   &lt;xs:element name="backgroundTypeCode" type="Flag"/&gt;   &lt;xs:element name="representativeCoordination" type="PointLocation"/&gt;   &lt;xs:element name="cartograficTextId" type="ID32bit" numminOccurs="0"/&gt;   &lt;xs:element name="areaCode" type="EightDigitCode" numminOccurs="0"/&gt;   &lt;xs:element name="numFigureElementShape" type="FourDigitUnsignedInt"/&gt;   &lt;xs:element name="figureElementShapeList"&gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="figureType" type="OneDigitCode" /&gt;         &lt;xs:element name="colorCode" type="OneDigitCode" /&gt;         &lt;xs:element name="referenceCoordination" type="PointLocation" /&gt;         &lt;xs:element name="numShapePoint" type="FourDigitUnsignedInt" /&gt;         &lt;xs:element name="shapePointList" type="ShapePointList" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | source document | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                |

## cause event

|                            |                                                                                                                                                                                                                                     |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CauseEvent                                                                                                                                                                                                                          | Data status category | static                        |
|                            |                                                                                                                                                                                                                                     | Data concept type    | data frame                    |
| Definition and description | It provides the cause of traffic regulations and obstacle events that disrupt the traffic flow.<br>For example: accident, fire, disabled vehicle, road obstacle, construction, roadwork, bad weather, disaster, earthquake caution. |                      |                               |
| Data structure             | <xs:simpleType name="CauseEvent" type="EXTERNAL"/>                                                                                                                                                                                  |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                     |                      |                               |

## caution point

|                            |                                                                                             |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | CautionPoint                                                                                | Data status category | static       |
|                            |                                                                                             | Data concept type    | data element |
| Definition and description | Caution Point provides the location and text of the caution that is provided to the driver. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="CautionPoint"&gt;   &lt;xs:element name="cautionPointId" type="ID32bit" /&gt;   &lt;xs:element name="roadElementId" type="ID32bit" numminOccurs="0" /&gt;   &lt;xs:element name="intersectionId" type="ID32bit" numminOccurs="0" /&gt;   &lt;xs:element name="cautionContentCode" type="FourDigitCode"/&gt;   &lt;xs:element name="locationCautionPoint" type="PointLocation"/&gt;   &lt;xs:element name="cautionText" type="xs:string"/&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                |

## circle location reference

|                            |                                                                                                                                                                                                                                                                                                                                               |                      |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | CircleLocationReference                                                                                                                                                                                                                                                                                                                       | Data status category | dynamic              |
|                            |                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data element         |
| Definition and description | A circle location shall be given by the position of the center and the radius. The center position shall be a geo-coordinate pair of longitude and latitude coordinate values that may be everywhere on the surface. The radius shall be integer-valued and given in metres.                                                                  |                      |                      |
| Data structure             | <pre> &lt;xs:complexType name="CircleLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="centerPoint" type="AbsoluteGeoCoordinate"/&gt;     &lt;xs:element name="radius" type="tdt:DistanceMetres"/&gt;     &lt;xs:element name="isFuzzyArea" type="tdt:Boolean"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                               | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                               |                      |                      |

## clockwise angle direction

|                            |                                                                                                                                                                                         |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | ClockwiseAngleDirection                                                                                                                                                                 | Data status category | static       |
|                            |                                                                                                                                                                                         | Data concept type    | value domain |
| Definition and description | <p>The Clockwise Angle Direction expresses a direction by the clockwise angles that were based on a running direction or north.</p> <p>Value of Angle is 0° to 359° and unit is 1°.</p> |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="ClockwiseAngleDirection"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="clockwiseAngle" &gt;       &lt;xs:simpleType name="ClockwiseAngle"&gt;         &lt;xs:restriction base="ThreeDigitUnsignedInt"&gt;           &lt;xs:minInclusive value="000"/&gt;           &lt;xs:minInclusive value="359"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="baseDirection" minOccurs="0"&gt;       &lt;xs:simpleType&gt;         &lt;xs:union&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="xs:string"&gt;               &lt;xs:enumeration value="North"/&gt;               &lt;xs:enumeration value="Heading"/&gt;             &lt;/xs:restriction&gt;           &lt;/xs:simpleType&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="xs:boolean"/&gt;           &lt;/xs:simpleType&gt;         &lt;/xs:union&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document | ISO 14296:2016 |
| Remarks        | baseDirection: True indicates "North", False indicates "Heading".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |

## clockwise direction

|                            |                                                                                                                                                                                                                                             |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | ClockwiseDirection                                                                                                                                                                                                                          | Data status category | static         |
|                            |                                                                                                                                                                                                                                             | Data concept type    | value domain   |
| Definition and description | The Clockwise Direction expresses a direction by the value of the dial of the clock that is based on a running direction or the north.                                                                                                      |                      |                |
| Data structure             | <pre> &lt;xs:simpleType name="ClockwiseDirection"&gt;   &lt;restriction base="xs:unsignedShort"&gt;     &lt;xs:minInclusive value="00"/&gt;     &lt;xs:maxInclusive value="11"/&gt;   &lt;/xs:restriction&gt; &lt;/xs:simpleType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                             | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                             |                      |                |

## closed linear location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | ClosedLinearLocationReference                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Data status category | dynamic              |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data frame           |
| Definition and description | A closed linear location references the area defined by a closed path (i.e. a circuit) in the road network. The boundary shall always consist of road segments. The path of a closed linear location may contain self-intersections if courses (e.g. marathon course) are referenced. Otherwise, for referencing areas, self-intersections should not appear.                                                                                                                  |                      |                      |
| Data structure             | <pre>&lt;xs:complexType name="ClosedLinearLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="first" type="FirstLocationReferencePoint"/&gt;     &lt;xs:element name="intermediates" type="IntermediateLocationReferencePoint"       minOccurs="0" maxOccurs="unbounded"/&gt;     &lt;xs:element name="last" type="LineProperties"/&gt;     &lt;xs:element name="shape" type="Shape" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                      |

## code information

|                            |                                                                          |                      |                               |
|----------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CodeInformation                                                          | Data status category | dynamic                       |
|                            |                                                                          | Data concept type    | data frame                    |
| Definition and description | It provides the information regarding decode control of the code.        |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="CodeInformation" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                          |                      |                               |

## compass direction

|                            |                                                                                                                                       |                      |                 |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|-----------------|
| Data concept name          | CompassDirection                                                                                                                      | Data status category | dynamic/ static |
|                            |                                                                                                                                       | Data concept type    | value domain    |
| Definition and description | CompassDirection expresses a direction by the angle, code or abbreviations of compass, e.g, NNE means a "north north east" direction. |                      |                 |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="CompassDirection"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="clockwiseAngleDirection" type="ClockwiseAngleDirection"/&gt;     &lt;xs:element name="compassAbbrivation"&gt;       &lt;xs:simpleType name="CompassAbbrivation"&gt;         &lt;restriction base="xs:string"&gt;           &lt;xs:enumeration value="N "/&gt;           &lt;xs:enumeration value="NNE"/&gt;           &lt;xs:enumeration value="NE "/&gt;           &lt;xs:enumeration value="NEN"/&gt;           &lt;xs:enumeration value="E " /&gt;           &lt;xs:enumeration value="ESE"/&gt;           &lt;xs:enumeration value="SE "/&gt;           &lt;xs:enumeration value="SSE"/&gt;           &lt;xs:enumeration value="S "/&gt;           &lt;xs:enumeration value="SSW "/&gt;           &lt;xs:enumeration value="SW "/&gt;           &lt;xs:enumeration value="WSW" /&gt;           &lt;xs:enumeration value="W "/&gt;           &lt;xs:enumeration value="WNW"/&gt;           &lt;xs:enumeration value="NW "/&gt;           &lt;xs:enumeration value="NNW"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="compass32IndexCode"&gt;       &lt;xs:simpleType name="Compass32IndexCode"&gt;         &lt;restriction base="TwoDigitUnsignedInt"&gt;           &lt;xs:minInclusive value="00"/&gt;           &lt;xs:maxInclusive value="31"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                |

## confidence

|                            |                                                                                                                                                                   |                      |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Confidence                                                                                                                                                        | Data status category | dynamic      |
|                            |                                                                                                                                                                   | Data concept type    | value domain |
| Definition and description | It provides the generic data of precision/ reliability for time, location, position, length, distance, height, azimuth, angle, direction, running vehicle status. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                               |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:simpleType name="Confidence" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="unknown"/&gt;         &lt;xs:enumeration value="LSB-value"/&gt;         &lt;xs:enumeration value="LSB-valueX2"/&gt;         &lt;xs:enumeration value="LSB-valueX5"/&gt;         &lt;xs:enumeration value="LSB-valueX1X10"/&gt;         &lt;xs:enumeration value="LSB-valueX2X10"/&gt;         &lt;xs:enumeration value="LSB-valueX5X10"/&gt;         &lt;xs:enumeration value="LSB-valueX1X100"/&gt;         &lt;xs:enumeration value="LSB-valueX2X100"/&gt;         &lt;xs:enumeration value="LSB-valueX5X100"/&gt;         &lt;xs:enumeration value="LSB-valueX1X1000"/&gt;         &lt;xs:enumeration value="LSB-valueX2X1000"/&gt;         &lt;xs:enumeration value="LSB-valueX5X1000"/&gt;         &lt;xs:enumeration value="LSB-valueX1X10000"/&gt;         &lt;xs:enumeration value="LSB-valueX2X10000"/&gt;         &lt;xs:enumeration value="LSB-valueX5X10000"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                               |

## confidence set

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ConfidenceSet                                                                                                                                                                                                                                                                                                                                                                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | aggregate domain              |
| Definition and description | It provides the precision/reliability information for time, location, position, length, distance, height, azimuth, angle, direction, running vehicle status.                                                                                                                                                                                                                                                                                   |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="ConfidenceSet" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="timeConfidence" type="TimeConfidence"/&gt;     &lt;xs:element name="positionConfidence" type="PositionConfidence"/&gt;     &lt;xs:element name="azimuthConfidence" type="AzimuthConfidence"/&gt;     &lt;xs:element name="drivingStatusConfidence" type="DrivingStatusConfidence"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                               |

## connected road

|                            |                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ConnectedRoad                                                                                                                                                                                                                                                                                                                                                                                               | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                             | Data concept type    | data element       |
| Definition and description | connected road with this parking facility and location                                                                                                                                                                                                                                                                                                                                                      |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ConnectedRoad"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadElementID" type="RoadElementID" /&gt;     &lt;xs:element name="roadWidth" type="Width" /&gt;     &lt;xs:element name="passagewayCrossingID" type="PassagewayCrossingID" /&gt;     &lt;xs:element name="entranceExitLocation" type="Location" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                             | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |

## connect IP

|                            |                                                                    |                      |                               |
|----------------------------|--------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ConnectIP<br>URI/URL                                               | Data status category | dynamic                       |
|                            |                                                                    | Data concept type    | data frame                    |
| Definition and description | URI/URL for internet connection                                    |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="ConnectIP" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                    |                      |                               |

## contents of information HMI

|                            |                                                                                     |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ContentsOfInforHMI                                                                  | Data status category | dynamic                       |
|                            |                                                                                     | Data concept type    | data frame                    |
| Definition and description | Contents information such as image, figure, sound data to provide in in-vehicle HMI |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="ContentsOfInforHMI" type="EXTERNAL"/&gt;</pre>         |                      |                               |
| Issued by                  | JARI                                                                                | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                     |                      |                               |



## contents of information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ContentsOfInformation                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | data module                   |
| Definition and description | Contents information such as image, figure, sound data, its format and internet connection information.                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="ContentsOfInformation" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="contentsOfInfoHMI" type="ContentsOfInfoHMI"/&gt;     &lt;xs:element name="iTIS-Phrase" type="ITIS-Phrase"/&gt;     &lt;xs:element name="connectIP" type="ConnectIP"/&gt;     &lt;xs:element name="descriptiveName" type="DescriptiveName"/&gt;     &lt;xs:element name="payloadData" type="PayloadData"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |

## control status

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ControlStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data module                   |
| Definition and description | It provides control state data of throttle, transmission, brake and steering of vehicle, and status of electronic control units such as ACC, TRC, ABS.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="ControlStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="throttleStatus" type="ThrottleStatus" /&gt;     &lt;xs:element name="transmissionSiftPosition" type="TransmissionSiftPosition" /&gt;     &lt;xs:element name="brakeAppliedStatus" type="BrakeAppliedStatus" /&gt;     &lt;xs:element name="steeringWheelAngle" type="SteeringWheelAngle" /&gt;     &lt;xs:element name="tirePressureThresholdDetection" type="TirePressureThresholdDetection" /&gt;     &lt;xs:element name="driveControlSystemStatus" type="DriveControlSystemStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |

## control system type

|                            |                                                                                          |                      |              |
|----------------------------|------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | ControlSystemType                                                                        | Data status category | dynamic      |
|                            |                                                                                          | Data concept type    | value domain |
| Definition and description | It provides a type of electronic control unit such as ACC, TRC, and ABS for the vehicle. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:simpleType name="ControlSystemType" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="TRC"/&gt;         &lt;xs:enumeration value="ABS"/&gt;         &lt;xs:enumeration value="SCS"/&gt;         &lt;xs:enumeration value="reserved"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                               |

## coordinates

|                            |                                                                                                                                                                                                                                                                                          |                      |                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | Coordinates                                                                                                                                                                                                                                                                              | Data status category | dynamic / static |
|                            |                                                                                                                                                                                                                                                                                          | Data concept type    | aggregate domain |
| Definition and description | <p>Value of the coordinates consist of the longitude, latitude and altitude in conformity with ITRF94.</p> <p>Units of longitude and latitude are 1/1 000 000 °.</p> <p>Unit of altitude is 1/10 m.</p>                                                                                  |                      |                  |
| Data structure             | <pre> &lt;xs:complexType name="Coordinates"&gt;   &lt;xs:element name="standardLongitude" type="Longitude"/&gt;   &lt;xs:element name="standardLatitude" type="Latitude"/&gt;   &lt;xs:element name="standardAltitude" type="Altitude" minOccurs="0"/&gt; &lt;/xs:complexType&gt; </pre> |                      |                  |
| Issued by                  |                                                                                                                                                                                                                                                                                          | source document      | ISO 14296:2016   |
| Remarks                    |                                                                                                                                                                                                                                                                                          |                      |                  |

## cooperative adaptive cruise control vehicle

|                            |                                                                     |                      |              |
|----------------------------|---------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | CooperativeAdaptiveCruiseControlVehicle                             | Data status category | static       |
|                            |                                                                     | Data concept type    | data element |
| Definition and description | Information from Cooperative Adaptive Cruise Control (CACC) Vehicle |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                    |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="CooperativeAdaptiveCruiseControlVehicle" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="vehicleID" type="VehicleID" /&gt;     &lt;xs:element name="messageTimeStamp" type="TimeStamp" /&gt;     &lt;xs:element name="vehicleType" type="VehicleType" /&gt;     &lt;xs:element name="vehicleLength" type="Length" /&gt;     &lt;xs:element name="vehicleLocation" type="Position" /&gt;     &lt;xs:element name="vehicleLocationConfidence" type="PositionConfidence" /&gt;     &lt;xs:element name="vehicleHeading" type="Azimuth" /&gt;     &lt;xs:element name="vehicleSpeed" type="VehicleSpeed" /&gt;     &lt;xs:element name="longitudinalAcceleration" type="LongitudinalAcceleration" /&gt;     &lt;xs:element name="yawRate" type="YawRate" /&gt;     &lt;xs:element name="exteriorLight" type="ExteriorLightStatus" /&gt;     &lt;xs:element name="longitudinalControlStatus" type="LongitudinalControlStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                    |

## count

|                            |                                                                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Count                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                | Data concept type    | value domain                  |
| Definition and description | The numerical value of the increment / decrement counter, or the number of the data and data group used for numerical control. |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="Count" type="xs:unsignedInteger"/&gt; </pre>                                                     |                      |                               |
| Issued by                  | JARI                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                |                      |                               |

## course of travel

|                            |                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CourseOfTravel                                                             | Data status category | dynamic                       |
|                            |                                                                            | Data concept type    | data element                  |
| Definition and description | Course/ route of travelling or moving for traveler or vehicle.             |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name=" CourseOfTravel" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                            |                      |                               |

crash status

|                            |                                                                   |                      |                               |
|----------------------------|-------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CrashStatus                                                       | Data status category | dynamic                       |
|                            |                                                                   | Data concept type    | data element                  |
| Definition and description | It provides the status of traffic accidents or vehicle accidents. |                      |                               |
| Data structure             | <xs:simpleType name="CrashStatus" type="EXTERNAL"/>               |                      |                               |
| Issued by                  | JARI                                                              | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                   |                      |                               |

crosswalk lane

|                            |                                                           |                      |                               |
|----------------------------|-----------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | CrosswalkLane                                             | Data status category | dynamic                       |
|                            |                                                           | Data concept type    | data frame                    |
| Definition and description | It provides the type, structure and shape of a crosswalk. |                      |                               |
| Data structure             | <xs:simpleType name="CrosswalkLane" type="EXTERNAL"/>     |                      |                               |
| Issued by                  | JARI                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                           |                      |                               |

curvature

|                            |                                                   |                      |                     |
|----------------------------|---------------------------------------------------|----------------------|---------------------|
| Data name                  | Curvature                                         | Data status category | static              |
|                            |                                                   | Data concept type    | value domain        |
| Definition and description | Inverse of the radius of curved road [1/m].       |                      |                     |
| Data structure             | <xs:simpleType name="Curvature" type="EXTERNAL"/> |                      |                     |
| Issued by                  |                                                   | source document      | ISO 11270:2014 LKAS |
| Remarks                    |                                                   |                      |                     |

curvature rate

|                            |                                                                                      |                      |              |
|----------------------------|--------------------------------------------------------------------------------------|----------------------|--------------|
| Data name                  | CurvatureRate                                                                        | Data status category | static       |
|                            |                                                                                      | Data concept type    | value domain |
| Definition and description | Rate of change of curvature along the clothoid of a curved road [1/m <sup>2</sup> ]. |                      |              |

|                |                                                       |                 |                     |
|----------------|-------------------------------------------------------|-----------------|---------------------|
| Data structure | <xs:simpleType name="CurvatureRate" type="EXTERNAL"/> |                 |                     |
| Issued by      |                                                       | source document | ISO 11270:2014 LKAS |
| Remarks        |                                                       |                 |                     |

## curve radius

|                            |                                                     |                      |                    |
|----------------------------|-----------------------------------------------------|----------------------|--------------------|
| Data name                  | CurveRadius                                         | Data status category | static             |
|                            |                                                     | Data concept type    | value domain       |
| Definition and description | Radius of the curve.                                |                      |                    |
| Data structure             | <xs:simpleType name="CurveRadius" type="EXTERNAL"/> |                      |                    |
| Issued by                  |                                                     | source document      | ISO 15622:2010 ACC |
| Remarks                    |                                                     |                      |                    |

[d]

## dangerous goods

|                            |                                                                                                                                    |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DangerousGoods                                                                                                                     | Data status category | static                        |
|                            |                                                                                                                                    | Data concept type    | data element                  |
| Definition and description | Type of dangerous goods in the twelfth edition of the United Nations Recommendations on the Transport of Dangerous Goods (UNRTDG). |                      |                               |
| Data structure             | <xs:simpleType name="DangerousGoods" type="xs:unsignedShort"/>                                                                     |                      |                               |
| Issued by                  | JARI                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                    |                      |                               |

## dangerous goods transport

|                            |                                                                                                                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DangerousGoodsTransport                                                                                                                                               | Data status category | static                        |
|                            |                                                                                                                                                                       | Data concept type    | data frame                    |
| Definition and description | DangerousGoodsTransport provides information on dangerous goods in a vehicle.                                                                                         |                      |                               |
| Data structure             | <xs:complexType name="DangerousGoodsTransport" ><br><xs:sequence><br><xs:element name="dangerousGoods" type="DangerousGoods"/><br></xs:sequence><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                       |                      |                               |

## data control information

|                            |                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DataControlInformation                                           | Data status category | dynamic                       |
|                            |                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides data control data such as existence and data length. |                      |                               |
| Data structure             | <xs:simpleType name="DataControlInformation" type="EXTERNAL"/>   |                      |                               |
| Issued by                  | JARI                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                  |                      |                               |

## data identifier

|                            |                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DataIdentifier                                                                                                                                                                                                                                 | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                | Data concept type    | data element                  |
| Definition and description | Identifier that is generated whenever any ITS-ST updates data.                                                                                                                                                                                 |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DataIdentifier" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="stationID" type="StationID"/&gt;     &lt;xs:element name="sequendeNo" type="Count"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                |                      |                               |

## date restriction

|                            |                                                                                                                                                                                                                                                                           |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | DateRestriction                                                                                                                                                                                                                                                           | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                           | Data concept type    | value domain   |
| Definition and description | It provides the date for the traffic restriction.                                                                                                                                                                                                                         |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="DateRestriction"&gt;   &lt;xs:sequence maxOccurs="unbounded"&gt;     &lt;xs:element name="startDate" type="MMDD"/&gt;     &lt;xs:element name="endDate" type="MMDD" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                           | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                           |                      |                |

## day of week restriction

|                            |                                                                                                                                                                                                            |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | DayOfWeekRestriction                                                                                                                                                                                       | Data status category | static         |
|                            |                                                                                                                                                                                                            | Data concept type    | value domain   |
| Definition and description | The day of week data which assigned the existence of the traffic restriction each day of the week to each bit. See "day of week".                                                                          |                      |                |
| Data structure             | <xs:simpleType name="DayOfWeekRestriction" type="EightBitAssignedCode" />                                                                                                                                  |                      |                |
| Issued by                  |                                                                                                                                                                                                            | source document      | ISO 14296:2016 |
| Remarks                    | bit0 is assigned "Sunday", bit6 is assigned "Saturday", bit7 is assigned "Holiday"<br>Value "1" of each bit means that there is traffic restriction, value "0" means that there is no traffic restriction. |                      |                |

## degree

|                            |                                                                                                                                                                                                                                 |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Degree                                                                                                                                                                                                                          | Data status category | static         |
|                            |                                                                                                                                                                                                                                 | Data concept type    | value domain   |
| Definition and description | It is one of the units of the coordinates (i.e. latitude, longitude).                                                                                                                                                           |                      |                |
| Data structure             | <pre>&lt;xs:simpleType name="Degree"&gt;   &lt;xs:restriction base="xs:double"&gt;     &lt;xs:maxInclusive value="180.0"&gt;     &lt;xs:minInclusive value="-180.0"/&gt;   &lt;/xs:restriction&gt; &lt;/xs:simpleType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                 | source document      | ISO 22837:2009 |
| Remarks                    |                                                                                                                                                                                                                                 |                      |                |

## descriptive name

|                            |                                                         |                      |                               |
|----------------------------|---------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DescriptiveName                                         | Data status category | dynamic                       |
|                            |                                                         | Data concept type    | value domain                  |
| Definition and description | Name of contents                                        |                      |                               |
| Data structure             | <xs:simpleType name="DescriptiveName" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                         |                      |                               |

## detection range

|                            |                                                        |                      |                    |
|----------------------------|--------------------------------------------------------|----------------------|--------------------|
| Data name                  | DetectionRange                                         | Data status category | dynamic            |
|                            |                                                        | Data concept type    | data element       |
| Definition and description | Area that a sensor can detect.                         |                      |                    |
| Data structure             | <xs:simpleType name="DetectionRange" type="EXTERNAL"/> |                      |                    |
| Issued by                  |                                                        | source document      | ISO 15622:2010 ACC |
| Remarks                    |                                                        |                      |                    |

## diagnosis

|                            |                                                                                                                                                                                                          |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Diagnosis                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                          | Data concept type    | data frame                    |
| Definition and description | Fault and diagnosis information of OBU or RSU.                                                                                                                                                           |                      |                               |
| Data structure             | <xs:complexType name="Diagnosis" ><br><xs:choice><br><xs:element name="diagnosisOBU" type="DiagnosisOBU"/><br><xs:element name="diagnosisRSU" type="DiagnosisRSU"/><br></xs:choice><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                          |                      |                               |

## diagnosis OBU

|                            |                                                           |                      |                               |
|----------------------------|-----------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DiagnosisOBU                                              | Data status category | dynamic                       |
|                            |                                                           | Data concept type    | data frame                    |
| Definition and description | Fault and diagnosis information of vehicle station (OBU). |                      |                               |
| Data structure             | <xs:simpleType name="DiagnosisOBU" type="EXTERNAL"/>      |                      |                               |
| Issued by                  | JARI                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                           |                      |                               |



## diagnosis RSU

|                            |                                                             |                      |                               |
|----------------------------|-------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DiagnosisRSU                                                | Data status category | dynamic                       |
|                            |                                                             | Data concept type    | data frame                    |
| Definition and description | Fault and diagnosis information of road-side station (RSU). |                      |                               |
| Data structure             | <xs:simpleType name="DiagnosisRSU" type="EXTERNAL"/>        |                      |                               |
| Issued by                  | JARI                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                             |                      |                               |

## dimension

|                            |                                                                                                                                                                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Dimension                                                                                                                                                                                                        | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                  | Data concept type    | value domain                  |
| Definition and description | It is the size of equipment/objects.                                                                                                                                                                             |                      |                               |
| Data structure             | <xs:complexType name="Dimension">   <xs:sequence>     <xs:element name="dimension" type="xs:positiveInteger"/>     <xs:element name="unitOfDimension" type="UnitOfMeasure" />   </xs:sequence> </xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                  |                      |                               |

## direction

|                            |                                                                                                                                                                                                                                                                                                          |                      |                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | Direction                                                                                                                                                                                                                                                                                                | Data status category | static           |
|                            |                                                                                                                                                                                                                                                                                                          | Data concept type    | aggregate domain |
| Definition and description | Clockwise direction/clockwise angle direction/compass direction.                                                                                                                                                                                                                                         |                      |                  |
| Data structure             | <xs:complexType name="Direction">   <xs:choice>     <xs:element name="clockwiseDirection" type="ClockwiseDirection"/>     <xs:element name="clockwiseAngleDirection" type="ClockwiseAngleDirection"/>     <xs:element name="compassDirection" type="CompassDirection"/>   </xs:choice> </xs:complexType> |                      |                  |
| Issued by                  |                                                                                                                                                                                                                                                                                                          | source document      | ISO 14296:2016   |
| Remarks                    |                                                                                                                                                                                                                                                                                                          |                      |                  |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Direction                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | value domain                  |
| Definition and description | Direction provides moving direction of vehicle and traffic direction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="Direction" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType &gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="forward"/&gt;         &lt;xs:enumeration value="reverse"/&gt;         &lt;xs:enumeration value="both"/&gt;         &lt;xs:enumeration value="inbound"/&gt;         &lt;xs:enumeration value="outbound"/&gt;         &lt;xs:enumeration value="inner"/&gt;         &lt;xs:enumeration value="outer"/&gt;         &lt;xs:enumeration value="northbound"/&gt;         &lt;xs:enumeration value="southbound"/&gt;         &lt;xs:enumeration value="eastbound"/&gt;         &lt;xs:enumeration value="westbound"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |

## direction guide

|                            |                                                                                                                    |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | DirectionGuide                                                                                                     | Data status category | static       |
|                            |                                                                                                                    | Data concept type    | data element |
| Definition and description | Direction Guide provides the direction and angle to constitute in egress road and ingress road at an intersection. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="DirectionGuide"/&gt;   &lt;xs:element name="intersectionId" type="ID32bit" /&gt;   &lt;xs:element name="ingressRoadGuideList" &gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="ingressRoadElementId" type="ID32bit" /&gt;         &lt;xs:element name="ingressLanePositon" type="ThirtyTwoBitAssignedCode" /&gt;         &lt;xs:element name="egressRoadList"&gt;           &lt;xs:sequence maxOccurs="unbounded"&gt;             &lt;xs:element name="egressRoadElementId" type="ID32bit" /&gt;             &lt;xs:element name="guidancePointType" type="OneDigitUnsignedInt"/&gt;             &lt;xs:element name="egressLanePosition" type="ThirtyTwoBitAssigned- Code"/&gt;             &lt;xs:element name="egressDirection" type="ClockwiseDirection" /&gt;             &lt;xs:element name="guidanceCode" type="TwoDigitCode"/&gt;             &lt;xs:element name="guidanceFlag" type="Flag"/&gt;             &lt;xs:element name="egressAngle" type="ClockwiseAngle"/&gt;           &lt;/xs:sequence&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;/xs:sequence&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |

## direction expression

|                            |                                                                                                                                                                                                                                                                           |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DirectionExpression                                                                                                                                                                                                                                                       | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                           | Data concept type    | data frame                    |
| Definition and description | DirectionExpression provides Direction and attributes of Direction.                                                                                                                                                                                                       |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="DirectionExpression" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="direction" type="Direction" /&gt;     &lt;xs:element name="directionAttribute" type="AzimuthAttribute"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                           |                      |                               |

## direction of road confidence

|                            |                                                                                                                            |                      |              |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | DirectionOfRoadConfidence                                                                                                  | Data status category | dynamic      |
|                            |                                                                                                                            | Data concept type    | data element |
| Definition and description | <p>It provides the confidence of the direction of the road shape.</p> <p>It is a confidence level of 95 % reliability.</p> |                      |              |

|                |                                                                   |                 |                               |
|----------------|-------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="DirectionOfRoadConfidence" type="EXTERNAL"/> |                 |                               |
| Issued by      | JARI                                                              | source document | proposed CITS data dictionary |
| Remarks        |                                                                   |                 |                               |

## disaster

|                            |                                                  |                      |                               |
|----------------------------|--------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Disaster                                         | Data status category | dynamic                       |
|                            |                                                  | Data concept type    | data frame                    |
| Definition and description | It provides the status of a disaster.            |                      |                               |
| Data structure             | <xs:simpleType name="Disaster" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                  |                      |                               |

## distance

|                            |                                                                                                                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Distance                                                                                                                                                                       | Data status category | dynamic                       |
|                            |                                                                                                                                                                                | Data concept type    | value domain                  |
| Definition and description | Length between two positions.                                                                                                                                                  |                      |                               |
| Data structure             | <xs:complexType name="Distance" ><br><xs:element name="distance" type="xs:positiveInteger"/><br><xs:element name="unitOfDistance" type="UnitOfMeasure" /><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                |                      |                               |

## distance along road

|                            |                                                                                                                                                                                         |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceAlongRoad                                                                                                                                                                       | Data status category | dynamic                       |
|                            |                                                                                                                                                                                         | Data concept type    | value domain                  |
| Definition and description | Length along the road between two positions.                                                                                                                                            |                      |                               |
| Data structure             | <xs:complexType name="DistanceAlongRoad" ><br><xs:element name="distanceAlongRoad" type="xs:integer"/><br><xs:element name="unitOfDistance" type="UnitOfMeasure"/><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                         |                      |                               |

## distance along road expression

|                            |                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceAlongRoadExpression                                                                                                                                                                                                                    | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                | Data concept type    | data frame                    |
| Definition and description | It provides a distance along a road and its attributes. It contains a distance along a road and an attribute.                                                                                                                                  |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DistanceAlongRoadExpression" &gt;   &lt;xs:element name="distanceAlongRoad" type="DistanceAlongRoad"/&gt;   &lt;xs:element name="positionAttribute" type="PositionAttribute" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                |                      |                               |

## distance confidence

|                            |                                                                                                                 |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceConfidence                                                                                              | Data status category | dynamic                       |
|                            |                                                                                                                 | Data concept type    | data frame                    |
| Definition and description | It provides the confidence of the direction of the road shape.<br>It is a confidence level of 95 % reliability. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DistanceConfidence" type="Confidence"/&gt;</pre>                                   |                      |                               |
| Issued by                  | JARI                                                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                 |                      |                               |

## distance expression

|                            |                                                                                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceExpression                                                                                                                                                                                                                                                                                                    | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                       | Data concept type    | data frame                    |
| Definition and description | It provides a distance and its attributes.                                                                                                                                                                                                                                                                            |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DistanceExpression" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="distance" type="Distance"/&gt;     &lt;xs:element name="dimension" type="Dimension"/&gt;   &lt;/xs:choice&gt;   &lt;element name="positionAttribute" type="PositionAttribute" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                       |                      |                               |

## distance metre max15000

|                            |                                                                                                                                                                                                     |                      |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | DistanceMetresMax15000                                                                                                                                                                              | Data status category | dynamic              |
|                            |                                                                                                                                                                                                     | Data concept type    | value domain         |
| Definition and description | DistanceMetresMax15000 stores a distance value in metres with a precision up to 15 000 metres.                                                                                                      |                      |                      |
| Data structure             | <pre>&lt;xs:complexType name="DistanceMetresMax15000"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="value" type="tdt:DistanceMetres"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                      |
| Issued by                  |                                                                                                                                                                                                     | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                     |                      |                      |

## distance milestone

|                            |                                                                              |                      |                               |
|----------------------------|------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceMilestone                                                            | Data status category | dynamic                       |
|                            |                                                                              | Data concept type    | value domain                  |
| Definition and description | This is a judgment flag of the distance by the milepost.                     |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DistanceMilestone" type="xs:boolean"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    | "True" of flag value indicates that distance is defined by milestone.        |                      |                               |

## distance source

|                            |                                                                                                |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceSource                                                                                 | Data status category | dynamic                       |
|                            |                                                                                                | Data concept type    | data element                  |
| Definition and description | It provides a source of the distance information.<br>Distance source: map, beacon, own sensor. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DistanceSource" type="EXTERNAL"/&gt;</pre>                        |                      |                               |
| Issued by                  | JARI                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                |                      |                               |

## distance to stop line

|                            |                                                                                                |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceToStopLine                                                                             | Data status category | dynamic                       |
|                            |                                                                                                | Data concept type    | value domain                  |
| Definition and description | It provides a distance along a road from a reference point of an ITS station to the stop line. |                      |                               |
| Data structure             | <xs:simpleType name="DistanceToStopLine" type="DistanceAlongRoad"/>                            |                      |                               |
| Issued by                  | JARI                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    | "True" of flag value indicates that distance is defined by milestone.                          |                      |                               |

## distance unit

|                            |                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DistanceUnit                                                                                                                                                                                                            | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                         | Data concept type    | value domain                  |
| Definition and description | It provides a unit for distance.                                                                                                                                                                                        |                      |                               |
| Data structure             | <xs:complexType name="DistanceUnit" ><br><xs:sequence><br><xs:element name="unitCode" type="UnitOfMeasure"/><br><xs:element name="unitDistanceValue" type="xs:positiveInteger"/><br></xs:sequence><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    | "True" of flag value means that distance is defined by milestone.                                                                                                                                                       |                      |                               |

## district name

|                            |                                                                                                                           |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | DistrictName                                                                                                              | Data status category | static       |
|                            |                                                                                                                           | Data concept type    | data element |
| Definition and description | District Name provides the name and a distance range of the district existing in the egress direction of an intersection. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="DistrictName"&gt;   &lt;xs:element name="intersectionId" type="ID32bit" /&gt;   &lt;xs:element name="intersectionDistrictList" &gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="ingressRoadElementId" type="ID32bit"/&gt;         &lt;xs:element name="egressRoadElementId" type="ID32bit" /&gt;         &lt;xs:element name="roadElementDistrictList"&gt;           &lt;xs:complexType&gt;             &lt;xs:sequence maxOccurs="unbounded"&gt;               &lt;xs:element name="districtNameType" type="OneDigitUnsignedInt" /&gt;               &lt;xs:element name="districtNameText" type="xs:string"/&gt;               &lt;xs:element name="distanceCategory"&gt;                 &lt;xs:simpleType&gt;                   &lt;xs:restriction base="OneDigitUnsignedInt"&gt;                     &lt;xs:minInclusive value="1"/&gt;                     &lt;xs:maxInclusive value="3"/&gt;                   &lt;/xs:restriction&gt;                 &lt;/xs:simpleType&gt;                 &lt;xs:annotation&gt;                   &lt;xs:documentation&gt;                     value ="1" "short distance range"                     value ="2" "middle distance range"                     value ="3" "long distance rang"                   &lt;/xs:documentation&gt;                 &lt;/xs:annotation&gt;               &lt;/xs:element&gt;             &lt;/xs:sequence&gt;           &lt;/xs:complexType&gt;         &lt;/xs:element&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |

## door status

|                            |                                                 |                      |              |
|----------------------------|-------------------------------------------------|----------------------|--------------|
| Data concept name          | DoorStatus                                      | Data status category | dynamic      |
|                            |                                                 | Data concept type    | value domain |
| Definition and description | It provides the door status (i.e. open/closed). |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                          |                 |                               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre>&lt;xs:simpleType name="DoorStatus" type="FourBitAssignedCode" /&gt; &lt;xs:annotation&gt;   &lt;xs:documentation&gt;     bit0 is assigned "driver side"     bit1 is assigned "passenger side"     bit2 is assigned "maintenance door"     bit3 is assigned "luggage door"   &lt;/xs:documentation&gt; &lt;/xs:annotation&gt;</pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                     | source document | proposed CITS data dictionary |
| Remarks        | Value "1" of each bit means that the door is open, value "0" means that the door is closed.                                                                                                                                                                                                                                              |                 |                               |

## drive axle lift air pressure

|                            |                                                                                                         |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DriveAxleLiftAirPressure                                                                                | Data status category | dynamic                       |
|                            |                                                                                                         | Data concept type    | data element                  |
| Definition and description | It provides the value of the air pressure of the drive axles.<br>conformity SAE J1939<br>Unit is 1 KPa. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DriveAxleLiftAirPressure" type="xs:unsignedInt"/&gt;</pre>                 |                      |                               |
| Issued by                  | JARI                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                         |                      |                               |

## drive axle location

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DriveAxleLocation                                                                                                                                                                                                                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                  | Data concept type    | aggregate domain              |
| Definition and description | It provides the location of the drive axles.<br>Conformity SAE J1939                                                                                                                                                                                                                                                                                                                                             |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DriveAxleLocation"&gt;   &lt;xs:element name="LRPos" type="FourBitCode" /&gt;   &lt;xs:element name="FRPos" type="FourBitCode" /&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfAlexPosition" type="ThreeDigitUnsignedInt"/&gt;     &lt;xs:element name="unitOfAlexPosition" type="FourBitCode" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                               |

drive axle lube pressure

|                            |                                                                                                  |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DriveAxleLubePressure                                                                            | Data status category | dynamic                       |
|                            |                                                                                                  | Data concept type    | value domain                  |
| Definition and description | It provides the value of lube pressure of drive axles.<br>conformity SAE J1939<br>Unit is 1 KPa. |                      |                               |
| Data structure             | <xs:simpleType name="DriveAxleLubePressure" type="xs:unsignedInt"/>                              |                      |                               |
| Issued by                  | JARI                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                  |                      |                               |

drive axle temperature

|                            |                                                                                                       |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DriveAxleTemperature                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                       | Data concept type    | value domain                  |
| Definition and description | It provides the value of the temperature of the drive axles.<br>Conformity SAE J1939<br>Unit is 1 °C. |                      |                               |
| Data structure             | <xs:simpleType name="DriveAxleTemperature" type="Temperature"/>                                       |                      |                               |
| Issued by                  | JARI                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                       |                      |                               |

driver response time

|                            |                                                                                                        |                      |                     |
|----------------------------|--------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| Data name                  | DriverResponseTime                                                                                     | Data status category | dynamic             |
|                            |                                                                                                        | Data concept type    | value domain        |
| Definition and description | Reaction time of the driver from the start of an event to the time that the driver starts braking [s]. |                      |                     |
| Data structure             | <xs:simpleType name="DriverResponseTime " type="EXTERNAL"/>                                            |                      |                     |
| Issued by                  |                                                                                                        | source document      | ISO 11067:2015 CSWS |
| Remarks                    |                                                                                                        |                      |                     |

## driving control system status

|                            |                                                                                                                                                                                                                                                                                                  |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DrivingControlSystemStatus                                                                                                                                                                                                                                                                       | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides the status of the driving control system such as ACC, ABS, TRC, SCS.                                                                                                                                                                                                                 |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DrivingControlSystemStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="controlSystemType" type="ControlSystemType"/&gt;     &lt;xs:element name="simpleSystemStatus" type="SimpleSystemStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                  |                      |                               |

## driving direction

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DrivingDirection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | value domain                  |
| Definition and description | It provides the direction of the vehicle, i.e. forward/reverse/stop/unknown.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DrivingDirection" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="forward"/&gt;         &lt;xs:enumeration value="reverse"/&gt;         &lt;xs:enumeration value="stop"/&gt;         &lt;xs:enumeration value="unknown"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                               |

## driving status

|                   |               |                      |            |
|-------------------|---------------|----------------------|------------|
| Data concept name | DrivingStatus | Data status category | dynamic    |
|                   |               | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                                                                                                                              |                 |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | It provides basic status, i.e. speed, direction, acceleration and yaw rate, for driving.                                                                                                                                                                                                                                                                                     |                 |                               |
| Data structure             | <pre>&lt;xs:complexType name="DrivingStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="speed" type="Speed"/&gt;     &lt;xs:element name="drivingDirection" type="DrivingDirection"/&gt;     &lt;xs:element name="acceleration" type="Acceleration"/&gt;     &lt;xs:element name="yawRate" type="YawRate"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                         | source document | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                              |                 |                               |

## driving status confidence

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DrivingStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data concept type    | data frame                    |
| Definition and description | It provides the confidences of basic status, i.e. speed, direction, acceleration and yaw rate, for driving.                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="DrivingStatusConfidence" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="speedConfidence" type="SpeedConfidence"/&gt;     &lt;xs:element name="accelerationConfidence" type="AccelerationConfidence"/&gt;     &lt;xs:element name="yawRateConfidence" type="YawRateConfidence"/&gt;     &lt;xs:element name="throttleConfidence" type="ThrottleConfidence"/&gt;     &lt;xs:element name="steeringWheelAngleConfidence" type="SteeringWheelAngleConfidence"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                               |

## driving wheel angle

|                            |                                                                             |                      |                               |
|----------------------------|-----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | DrivingWheelAngle                                                           | Data status category | dynamic                       |
|                            |                                                                             | Data concept type    | value domain                  |
| Definition and description | It provides the angle of the driving wheel.<br>Unit of values is 0,333 3 °. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="DrivingWheelAngle" type="xs:byte"/&gt;</pre>   |                      |                               |
| Issued by                  | JARI                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    | Value of angle is from -42,44 to +42,33 °.                                  |                      |                               |

## dynamic information location

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | DynamicInformationLocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data element   |
| Definition and description | <p>Dynamic Information Location provides the location reference information of the special dynamic information which has a fixed location or domain.</p> <p>Special dynamic information is traffic information such as RDS-TMS and VICS, weather information and travel information.</p>                                                                                                                                                                                                                                                                       |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="DynamicInformationLocation"&gt;   &lt;xs:sequence maxOccurs="unbounded"&gt;     &lt;xs:element name="dynamicInformationLocationId" type="ID32bit"/&gt;     &lt;xs:element name="dynamicInformationCategory" type="FourDigitCode"/&gt;     &lt;xs:element name="dynamicReferencePoint" type="PointLocation" minOccurs="0"/&gt;     &lt;xs:element name="roadElementId" type="ID32bit" minOccurs="0"/&gt;     &lt;xs:element name="placeId" type="ID32bit" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                |

[e]

## earthquake

|                            |                                                                     |                      |                               |
|----------------------------|---------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Earthquake                                                          | Data status category | dynamic                       |
|                            |                                                                     | Data concept type    | data frame                    |
| Definition and description | It provides the emergency information during an earthquake.         |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="Earthquake" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                     |                      |                               |

## effective area

|                            |                                                                          |                      |                               |
|----------------------------|--------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EffectiveArea                                                            | Data status category | dynamic                       |
|                            |                                                                          | Data concept type    | data frame                    |
| Definition and description | It provides the area where information becomes effective.                |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name=" EffectiveArea " type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                          |                      |                               |

effective azimuth

|                            |                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EffectiveAzimuth                                                 | Data status category | dynamic                       |
|                            |                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides the azimuth which the information becomes effective. |                      |                               |
| Data structure             | <xs:simpleType name=" EffectiveAzimuth" type="EXTERNAL"/>        |                      |                               |
| Issued by                  | JARI                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                  |                      |                               |

effective range

|                            |                                                                |                      |                               |
|----------------------------|----------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EffectiveRange                                                 | Data status category | dynamic                       |
|                            |                                                                | Data concept type    | data frame                    |
| Definition and description | It provides the range which the information becomes effective. |                      |                               |
| Data structure             | <xs:simpleType name=" EffectiveRange" type="EXTERNAL"/>        |                      |                               |
| Issued by                  | JARI                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                |                      |                               |

effective time

|                            |                                                               |                      |                               |
|----------------------------|---------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EffectiveTime                                                 | Data status category | dynamic                       |
|                            |                                                               | Data concept type    | data frame                    |
| Definition and description | It provides the time which the information becomes effective. |                      |                               |
| Data structure             | <xs:simpleType name=" EffectiveTime" type="EXTERNAL"/>        |                      |                               |
| Issued by                  | JARI                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                               |                      |                               |

elevation

|                            |                                                                                                         |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Elevation                                                                                               | Data status category | dynamic      |
|                            |                                                                                                         | Data concept type    | value domain |
| Definition and description | It provides a height above sea level or difference in height from reference level. Unit value is 0,1 m. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                               |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:complexType name="Elevation" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="altitude"&gt;       &lt;xs:simpleType name="standardAltitude" minOccurs="0"&gt;         &lt;xs:restriction base="xs:int"&gt;           &lt;xs:minInclusive value="-99999"/&gt;           &lt;xs:minInclusive value="+90000"/&gt;           &lt;xs:totalDigits value="5"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="elevation"&gt;       &lt;xs:simpleType name="standardElevation" minOccurs="0"&gt;         &lt;xs:restriction base="xs:int"&gt;           &lt;xs:minInclusive value="-4095"/&gt;           &lt;xs:minInclusive value="+61439"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                               |

## elevation confidence

|                            |                                                                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ElevationConfidence                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                       | Data concept type    | value domain                  |
| Definition and description | <p>ElevationConfidence provides the confidence of elevation.</p> <p>It is a confidence level of 95 % reliability.</p> |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="ElevationConfidence" type="Confidence"/&gt; </pre>                                      |                      |                               |
| Issued by                  | JARI                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                       |                      |                               |

## emergency response type

|                            |                                                                                  |                      |                               |
|----------------------------|----------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EmergencyResponseType                                                            | Data status category | dynamic                       |
|                            |                                                                                  | Data concept type    | data frame                    |
| Definition and description | <p>It provides the operating mode of an emergency vehicle.</p>                   |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="EmergencyResponseType" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                  |                      |                               |

## emergency vehicle status

|                            |                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EmergencyVehicleStatus                                                                                                                                                                                                                                                                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | data frame                    |
| Definition and description | It provides emergency vehicle status such as light bar, siren and operation mode.                                                                                                                                                                                                                                                                       |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="EmergencyVhecleStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="lightbarInUse" type="LightbarInUse" /&gt;     &lt;xs:element name="sirenInUse" type="SirenInUse" /&gt;     &lt;xs:element name="emergencyResponseType" type="EmergencyResponseType" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                         |                      |                               |

## energy storage type

|                            |                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EnergyStorageType                                                          | Data status category | dynamic                       |
|                            |                                                                            | Data concept type    | data frame                    |
| Definition and description | It provides the type of vehicle power source.                              |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="EnergyStorageType" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                            |                      |                               |

## entry vehicle direction order

|                            |                                                                              |                      |              |
|----------------------------|------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | EntryVehicleDirectionOrder                                                   | Data status category | static       |
|                            |                                                                              | Data concept type    | value domain |
| Definition and description | It provides the order of the vehicle direction for entering a parking space. |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                    |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:simpleType name="EntryVehicleDirectionOrder"&gt;   &lt;xs:union&gt;     &lt;xs:simpleType &gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="forward"/&gt;         &lt;xs:enumeration value="reverse"/&gt;         &lt;xs:enumeration value="both"/&gt;         &lt;xs:enumeration value="unknown"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                    |

## event ID

|                            |                                                                                                                                                                                                                                           |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EventID                                                                                                                                                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                           | Data concept type    | value domain                  |
| Definition and description | Identifier to be produced whenever any ITS station provides a new event.                                                                                                                                                                  |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="EventID" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="stationID" type="StationID"/&gt;     &lt;xs:element name="sequenceNo" type="Count"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                           |                      |                               |

## event others

|                            |                                                                        |                      |                               |
|----------------------------|------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | EventOthers                                                            | Data status category | dynamic                       |
|                            |                                                                        | Data concept type    | data frame                    |
| Definition and description | Other information about events.                                        |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="EventOthers" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                        |                      |                               |

## exterior lights

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ExteriorLights                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | value domain                  |
| Definition and description | Status of exterior lights of the vehicle.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name=" ExteriorLightStatus" type=" EightBitAssignedCode" /&gt; &lt;xs:annotation&gt;   &lt;xs:documentation&gt;     bit0 is assigned "LowBeamHeadlight"&gt;     bit1 is assigned "HighBeamHeadlight"&gt;     bit2 is assigned "LeftTurnSignal"&gt;     bit3 is assigned "RightTurnSignal"&gt;     bit4 is assigned "AutomaticLightControl"&gt;     bit5 is assigned "DaytimeRunningLights"&gt;     bit6 is assigned "FogLight"&gt;     bit7 is assigned "ParkingLight"&gt;   &lt;/xs:documentation&gt; &lt;/xs:annotation&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    | Value 0 of each bit means "Off", value 1 means "On".                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                               |

## exterior status

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ExteriorStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data element                  |
| Definition and description | Status of exterior (i.e. light, wiper, door, equipment of emergency vehicle) of vehicle.                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="ExteriorStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="exteriorLights" type="ExteriorLights" /&gt;     &lt;xs:element name="wiperStatus" type="WiperStatus" /&gt;     &lt;xs:element name="doorStatus" type="DoorStatus" /&gt;     &lt;xs:element name="emergencyVehicleStatus" type="EmergencyVehicleStatus" /&gt;     &lt;xs:element name="publicVehicleStatus" type="PublicVehicleStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |

[f]

## facilities

|                            |                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Facilities                                                                                                                                                                                                                                            | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                       | Data concept type    | data element                  |
| Definition and description | Facilities such as a parking lot or SAPA adjacent to a road.                                                                                                                                                                                          |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="Facilities" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="parking" type="Parking" /&gt;     &lt;xs:element name="facilitiesRoad" type="FacilitiesRoad" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                       |                      |                               |

## facilities road

|                            |                                                                                  |                      |                               |
|----------------------------|----------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | FacilitiesRoad                                                                   | Data status category | dynamic                       |
|                            |                                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides information about facilities except for parking lots along the road. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="FacilitiesRoad" type="EXTERNAL"/&gt;</pre>          |                      |                               |
| Issued by                  | JARI                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                  |                      |                               |

## first location reference point

|                            |                                                                                                          |                      |              |
|----------------------------|----------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | FirstLocationReferencePoint                                                                              | Data status category | dynamic      |
|                            |                                                                                                          | Data concept type    | data element |
| Definition and description | FirstLocationReferencePoint specifies the first LRP of an ordered sequence of Location Reference Points. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Data structure | <code>&lt;xs:complexType name="FirstLocationReferencePoint"&gt;</code><br><code>  &lt;xs:sequence&gt;</code><br><code>    &lt;xs:element name="coordinate" type="AbsoluteGeoCoordinate"/&gt;</code><br><code>    &lt;xs:element name="lineProperties" type="LineProperties"/&gt;</code><br><code>    &lt;xs:element name="pathProperties" type="PathProperties"/&gt;</code><br><code>  &lt;/xs:sequence&gt;</code><br><code>&lt;/xs:complexType&gt;</code> |                 |                      |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document | ISO/TS 21219-22:2017 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                      |

## flag

|                            |                                                                    |                      |                |
|----------------------------|--------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Flag                                                               | Data status category | static         |
|                            |                                                                    | Data concept type    | Value domain   |
| Definition and description | Flag is a data type. Flag has 2 types: "true" and "false".         |                      |                |
| Data structure             | <code>&lt;xs:simpleType name="Flag" type="xs:boolean" /&gt;</code> |                      |                |
| Issued by                  |                                                                    | source document      | ISO 14296:2016 |
| Remarks                    |                                                                    |                      |                |

## full time

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | FullTime                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | value domain                  |
| Definition and description | UTC time or local time that is expressed by year, month, day, hour and minute.                                                                                                                                                                                                                                                                                                                                                                                                                                     |                      |                               |
| Data structure             | <code>&lt;xs:complexType name="FullTime" &gt;</code><br><code>  &lt;xs:sequence&gt;</code><br><code>    &lt;xs:element name="year" type="Year" /&gt;</code><br><code>    &lt;xs:element name="month" type="Month" /&gt;</code><br><code>    &lt;xs:element name="day" type="Day" /&gt;</code><br><code>    &lt;xs:element name="hour" type="Hour" /&gt;</code><br><code>    &lt;xs:element name="minute" type="Minute" /&gt;</code><br><code>  &lt;/xs:sequence&gt;</code><br><code>&lt;/xs:complexType&gt;</code> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                               |

## [g]

## geo coordinate system

|                   |                     |                      |              |
|-------------------|---------------------|----------------------|--------------|
| Data concept name | GeoCoordinateSystem | Data status category | static       |
|                   |                     | Data concept type    | data element |

|                            |                                                                              |                 |                               |
|----------------------------|------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | It is a code for a geo coordinate system defined by ISO 19127 and ISO 19128. |                 |                               |
| Data structure             | <xs:simpleType name="GeoCoordinateSystem" type="FourDigitCode" />            |                 |                               |
| Issued by                  | JARI                                                                         | source document | proposed CITS data dictionary |
| Remarks                    |                                                                              |                 |                               |

## geo coordinate location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | GeoCoordinateLocationReference                                                                                                                                                                                                                                                                                                                                                                                                                  | Data status category | static               |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | data frame           |
| Definition and description | A geo-coordinate pair is a position in a map defined by its longitude and latitude coordinate values. This type of point location may or may not be bound to the network and can be everywhere on the surface. Real world examples for a geo-coordinate as a point location are all coordinate pairs on the surface. This is the general type of a point location. All other types can also be expressed by only using the geo-coordinate pair. |                      |                      |
| Data structure             | <xs:complexType name="GeoCoordinateLocationReference"> <xs:sequence> <xs:element name="coordinate" type="AbsoluteGeoCoordinate"/> </xs:sequence> </xs:complexType>                                                                                                                                                                                                                                                                              |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                 | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                      |

## grade separated crossing road

|                            |                                                                                                                                                                                                                              |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | GradeSeparatedCrossingRoad                                                                                                                                                                                                   | Data status category | static         |
|                            |                                                                                                                                                                                                                              | Data concept type    | data element   |
| Definition and description | GradeSeparatedCrossingRoad provides crossing road element ID and crossing height at bridge/tunnel.                                                                                                                           |                      |                |
| Data structure             | <xs:complexType name="GradeSeparatedCrossingRoad"> <xs:sequence maxOccurs="unbounded"> <xs:element name="roadElementId"/> <xs:element name="crossingElevation" type="ThreeDigitSignedInt"/> </xs:sequence> </xs:complexType> |                      |                |
| Issued by                  |                                                                                                                                                                                                                              | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                              |                      |                |

## grid location reference

|                   |                       |                      |            |
|-------------------|-----------------------|----------------------|------------|
| Data concept name | GridLocationReference | Data status category | static     |
|                   |                       | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Definition and description | A grid location is a special instance of a rectangle location. It shall be given by a base rectangular shape. This base rectangle shall be the lower left cell of the grid and shall be multiplied to the North (by defining the number of rows) and to the East (by defining the number of columns).                                                                              |                 |                      |
| Data structure             | <pre>&lt;xs:complexType name="GridLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="baseElement" type="Rectangle"/&gt;     &lt;xs:element name="nrColumns" type="tdt:IntUnLi"/&gt;     &lt;xs:element name="nrRows" type="tdt:IntUnLi"/&gt;     &lt;xs:element name="isFuzzyArea" type="tdt:Boolean"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                    | source document | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |

[h]

hazard event

|                            |                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | HazardEvent                                                                                                                                                                                                                                                                                                                                                                                               | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                           | Data concept type    | data frame                    |
| Definition and description | It provides status of restriction, cause of event, status of obstacle and status of recovery of hazard.                                                                                                                                                                                                                                                                                                   |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="HazardEvent"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="restrictedStatus" type="RestrictedStatus" /&gt;     &lt;xs:element name="causeEvent" type="CauseEvent" /&gt;     &lt;xs:element name="hazardStatus" type="HazardStatus" /&gt;     &lt;xs:element name="processingStatus" type="ProcessingStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                               |

hazard obstacles

|                            |                                                                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | HazardObstacles                                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                                      | Data concept type    | data frame                    |
| Definition and description | Obstacle on the road, i.e. parking/stop vehicle, low-speed vehicle, pedestrian/bicycle, animal, road falling object. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="HazardObstacles" type="EXTERNAL"/&gt;</pre>                                             |                      |                               |
| Issued by                  | JARI                                                                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                      |                      |                               |

## hazard road surface

|                            |                                                                                                                                                                                                                                                                                                                                                             |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | HazardRoadSurface                                                                                                                                                                                                                                                                                                                                           | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                             | Data concept type    | data frame                    |
| Definition and description | It provides condition, temperature and irregularities of road surface.                                                                                                                                                                                                                                                                                      |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="HazardRoadSurface" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadSurfaceStatus" type="RoadSurfaceStatus" /&gt;     &lt;xs:element name="roadTemperature" type="RoadTemperature" /&gt;     &lt;xs:element name="roadIrregularity" type="RoadIrregularity" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                             |                      |                               |

## hazard status

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | HazardStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | data frame                    |
| Definition and description | It provides the status of a hazard, i.e. obstacles, traffic jam, crash, roadwork, disaster, earthquake.                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="HazardStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="hazardObstacles" type="HazardObstacles" /&gt;     &lt;xs:element name="trafficJamStatus" type="TrafficJamStatus" /&gt;     &lt;xs:element name="crashStatus" type="CrashStatus" /&gt;     &lt;xs:element name="roadWorkStatus" type="RoadWorkStatus" /&gt;     &lt;xs:element name="disaster" type="Disaster" /&gt;     &lt;xs:element name="earthquake" type="Earthquake" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                               |

## heading

|                            |                                                       |                      |              |
|----------------------------|-------------------------------------------------------|----------------------|--------------|
| Data concept name          | Heading                                               | Data status category | dynamic      |
|                            |                                                       | Data concept type    | value domain |
| Definition and description | The angle of the travelling direction of the vehicle. |                      |              |

|                |                                                           |                 |                    |
|----------------|-----------------------------------------------------------|-----------------|--------------------|
| Data structure | <xs:simpleType name="Heding" type="xs:positiveInteger" /> |                 |                    |
| Issued by      |                                                           | source document | ISO 16787:2016 APS |
| Remarks        |                                                           |                 |                    |

## heading

|                            |                                                                                                                                                                                                                           |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Heading                                                                                                                                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                           | Data concept type    | value domain                  |
| Definition and description | <p>It provides the angle of the travelling direction of the vehicle.</p> <p>Value of Heading is the product of valueOfAngle and unitOfAngle.</p>                                                                          |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="Heading" &gt;   &lt;xs:element name="valueOfAngle" type="xs:positiveInteger" /&gt;   &lt;xs:element name="unitOfAngle" type="AzimuthUnit" minOccurs="0" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    | Azimuth is the product of value of azimuth and unit of azimuth.                                                                                                                                                           |                      |                               |

## heading confidence

|                            |                                                                                                                                                     |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | HeadingConfidence                                                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                                                     | Data concept type    | data element                  |
| Definition and description | <p>HeadingConfidence provides the accuracy of the detective system of the vehicle azimuth.</p> <p>It is a confidence level of 95 % reliability.</p> |                      |                               |
| Data structure             | <xs:simpleType name="HeadingConfidence" type="EXTERNAL"/>                                                                                           |                      |                               |
| Issued by                  | JARI                                                                                                                                                | source document      | proposed CITS data dictionary |
| Remarks                    | Azimuth is the product of the value of azimuth and the unit of azimuth.                                                                             |                      |                               |

## height

|                            |                                                                                                                                                             |                      |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Height                                                                                                                                                      | Data status category | static       |
|                            |                                                                                                                                                             | Data concept type    | value domain |
| Definition and description | <p>Height or Depth.</p> <p>It consists of value and unit of length.</p> <p>Height is expressed as a plus value and depth is expressed as a minus value.</p> |                      |              |



|                |                                                                                                                                                                                                                                                                                                              |                 |                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre>&lt;xs:complexType name="Height"&gt;   &lt;xs:element name="xs:int" &gt;     &lt;xs:minInclusive value="-9999999"/&gt;     &lt;xs:maxInclusive value="9999999"/&gt;   &lt;/xs:element&gt;   &lt;xs:element name="unitOfheight" type="UnitOfMeasure" numminOccurs="0"/&gt; &lt;/xs:complexType&gt;</pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                              | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                              |                 |                |

[i]

identifier

|                            |                                                                                                                                                                                                                                                                                  |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Identifier                                                                                                                                                                                                                                                                       | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                  | Data concept type    | data frame                    |
| Definition and description | Identifier of a message, data block or events for ITS.                                                                                                                                                                                                                           |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="Identifier" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="msgID" type="MSG-ID"/&gt;     &lt;xs:element name="eventID" type="EventID"/&gt;     &lt;xs:element name="dataID" type="DataID"/&gt;   &lt;/xs:choice&gt; &lt;/xs:simpleType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                  |                      |                               |

information providing status

|                            |                                                                              |                      |                               |
|----------------------------|------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | InformationProvidingStatus                                                   | Data status category | dynamic                       |
|                            |                                                                              | Data concept type    | data element                  |
| Definition and description | It provides an enforcement state of provision of information to a driver.    |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="InfoProvidingStatus" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                              |                      |                               |

intermediate location preference point

|                   |                                    |                      |              |
|-------------------|------------------------------------|----------------------|--------------|
| Data concept name | IntermediateLocationReferencePoint | Data status category | static       |
|                   |                                    | Data concept type    | data element |

|                            |                                                                                                                                                                                                                                                                                                                                                                 |                 |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Definition and description | IntermediateLocationReferencePoint specifies an LRP which is not the first LRP and not the last LRP of an ordered sequence of LRPs.                                                                                                                                                                                                                             |                 |                      |
| Data structure             | <pre>&lt;xs:complexType name="IntermediateLocationReferencePoint"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="coordinate" type="AbsoluteGeoCoordinate"/&gt;     &lt;xs:element name="lineProperties" type="LineProperties"/&gt;     &lt;xs:element name="pathProperties" type="PathProperties"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                 | source document | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                 |                 |                      |

## intersection

|                            |                                                                      |                      |              |
|----------------------------|----------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Intersection                                                         | Data status category | static       |
|                            |                                                                      | Data concept type    | data element |
| Definition and description | Intersection is the area that more than two road elements intersect. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="Intersection"&gt;   &lt;xs:element name="intersectionId" type="ID32bit"/&gt;   &lt;xs:element name="intersectionType" type="FourBitCode"/&gt;   &lt;xs:element name="intersectionLocation" type="PointLocation"/&gt;   &lt;xs:element name="numICP" type="TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="iCPidList"&gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="icp" type="IntersectionConnectionPoint" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt;   &lt;xs:element name="coverageLevel" type="OneDigitInt"/&gt;   &lt;xs:element name="trafficSignalExistenceFlag" type="Flag"/&gt;   &lt;xs:element name="intersectionNameExistenceFlag" type="Flag"/&gt;   &lt;xs:element name="directionGuideExistenceFlag" type="Flag"/&gt;   &lt;xs:element name="districtNameExistenceFlag" type="Flag"/&gt;   &lt;xs:element name="cautionPointExistenceFlag" type="Flag"/&gt;   &lt;xs:element name="buidingFacilityExistenceFlag" type="Flag"/&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       Flag value="0" / "fale" meaning       "trafficSignalExistenceFlag" = not existence       "intersectionNameExistenceFlag" = not existence       "directionGuideExistenceFlag" = not existence       "districtNameExistenceFlag" = not existence       "cautionPointExistenceFlag" = not existence       "buidingFacilityExistenceFlag" = not existence     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |

## intersection

|                            |                                                                              |                      |                               |
|----------------------------|------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Intersection                                                                 | Data status category | dynamic                       |
|                            |                                                                              | Data concept type    | data element                  |
| Definition and description | It provides structure information and shape information of the intersection. |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="Intersection" type="EXTERNAL"/&gt; </pre>      |                      |                               |
| Issued by                  | JARI                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                              |                      |                               |

## intersection connection point

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | IntersectionConnectionPoint                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | data element   |
| Definition and description | Intersection connection points (ICPs) are both ends of the road element that are expressed in a line segment, and which exist in the intersection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="IntersectionConnectionPoint"&gt;   &lt;xs:element name="intersectionId" type="ID32bit" /&gt;   &lt;xs:element name="icpId" type="ID8bit"/&gt;   &lt;xs:element name="icpLocation" type="PointLocation"/&gt;   &lt;xs:element name="offsetFromIntersectionLocation" type="OffsetLocation"/&gt;   &lt;xs:element name="icpType"&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="OneDigitUnsignedInt"&gt;         &lt;xs:minInclusive value="0"/&gt;         &lt;xs:maxInclusive value="3"/&gt;       &lt;/xs:restriction&gt;     &lt;/simpleType&gt;   &lt;/xs:element&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       icpType means as follows;       value (0) "single point"       value (1) "multi point"/&gt;       value (2) "roundabout point"       value (3) "reserved"/&gt;     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt;   &lt;xs:element name="numConnectedRoadElement" type="dd:TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="roadElementList"&gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="roadElementId" type="ID32bit" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt;   &lt;xs:element name="numIntersectionLink" type="TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="intersectionLinkList" numminOccurs="0"&gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="intersectionLinkId" type="ID8bit" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                |

## intersection cost

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | IntersectionCost                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data concept type    | data element   |
| Definition and description | Intersection Cost provides the cost of a traffic path to constitute an egress road and ingress road at an intersection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="IntersectionCost"&gt;   &lt;xs:element name="intersectionId" type="ID32bit"/&gt;   &lt;xs:element name="in-out-CostList" &gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="intersectionCostId" type="ID8bit" minOccurs="0"/&gt;         &lt;xs:element name="ingressRoadElementId" type="ID32bit"/&gt;         &lt;xs:element name="egressRoadElementId" type="ID32bit"/&gt;         &lt;xs:element name="lengthIntersectionPath" type="Length"/&gt;         &lt;xs:element name="averageTraveTime" type="xs:Short" minOccurs="0"/&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                |

## intersection link

|                            |                                                                                                                       |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | IntersectionLink                                                                                                      | Data status category | static       |
|                            |                                                                                                                       | Data concept type    | data element |
| Definition and description | Intersection Link is the traffic path in the intersection. It provides components and its attributes of traffic path. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="IntersectionLink"&gt;   &lt;xs:element name="intersectionId" type="ID32bit" /&gt;   &lt;xs:element name="intersectionLinkList" &gt;     &lt;xs:complexType&gt;       &lt;xs:sequence maxOccurs="unbounded"&gt;         &lt;xs:element name="intersectionLinkId" type="ID8bit"/&gt;         &lt;xs:element name="startICPid" type="ID8bit"/&gt;         &lt;xs:element name="endICPid" type="ID8bit"/&gt;         &lt;xs:element name="roadTypeCode" type="RoadType" /&gt;         &lt;xs:element name="lengthLink" type="Length" minOccurs="0" /&gt;         &lt;xs:element name="averageTraveTime" type="xs:Short" minOccurs="0" /&gt;         &lt;xs:element name="numShapePoint" type="xs:unsignedByte" minOccurs="0" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                |

## intersection name

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | IntersectionName                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data element   |
| Definition and description | Intersection Name provides the name of the intersection where it was considered that a name varies according to an approach direction.                                                                                                                                                                                                                                                                                                                        |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="IntersectionName" &gt;   &lt;xs:element name="intersectionId" type="ID32bit"/&gt;   &lt;xs:element name="intersectionNameList"&gt;     &lt;xs:complexType&gt;       &lt;xs:sequence minOccurs="1" maxOccurs="unbounded"&gt;         &lt;xs:element name="ingressRoadEelementId" type="ID32bit" minOccurs="0" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |

## intersection type

|                   |                  |                      |              |
|-------------------|------------------|----------------------|--------------|
| Data concept name | IntersectionType | Data status category | static       |
|                   |                  | Data concept type    | value domain |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Definition and description | Intersection type is one of the classification categories of the intersection.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                |
| Data structure             | <pre> &lt;xs:simpleType name="IntersectionType"/&gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="Simple Intersection"/&gt;         &lt;xs:enumeration value="Complex Intersection"/&gt;         &lt;xs:enumeration value="Roundabout"/&gt;         &lt;xs:enumeration value="Plaza"/&gt;         &lt;xs:enumeration value="Boundary"/&gt;         &lt;xs:enumeration value="Dead end"/&gt;         &lt;xs:enumeration value="Others"/&gt;         &lt;xs:enumeration value="reserved"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="FourBitCode"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |

## ITIS phrase

|                            |                                                                        |                      |                               |
|----------------------------|------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ITIS-Phrase                                                            | Data status category | dynamic                       |
|                            |                                                                        | Data concept type    | Data frame                    |
| Definition and description | It provides a description of IT IS code.                               |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="ITIS-Phrase" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                        |                      |                               |

[j]

jerk

|                            |                                                                  |                      |              |
|----------------------------|------------------------------------------------------------------|----------------------|--------------|
| Data name                  | Jerk                                                             | Data status category | dynamic      |
|                            |                                                                  | Data concept type    | value domain |
| Definition and description | Rate of change of acceleration/deceleration [m/s <sup>3</sup> ]. |                      |              |

|                |                                               |                 |                    |
|----------------|-----------------------------------------------|-----------------|--------------------|
| Data structure | <xs:simpleType name="Jerk " type="EXTERNAL"/> |                 |                    |
| Issued by      |                                               | source document | ISO 15622:2010 ACC |
| Remarks        |                                               |                 |                    |

[1]

lane

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |              |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Lane                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data concept type    | data element |
| Definition and description | <p>In the context of traffic control, a lane is part of a carriageway (roadway) that is designated for use by a single line of vehicles, to control and guide drivers and reduce traffic conflicts.</p> <p>Lane in the Road Element consists of one or more serial lane sections that are specified by the number of lanes and direction of traffic flow.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |              |
| Data structure             | <pre>&lt;xs:complexType name="Lane"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="laneOnRoadElement"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="roadSectionId" type="ID32bit" /&gt;         &lt;xs:element name="roadElementId" type="ID32bit" /&gt;         &lt;xs:element name="directionTrafficFlow" type="OneDigitUnsignedInt" /&gt;         &lt;xs:element name="laneCountingConvention"&gt;           &lt;xs:simpleType&gt;             &lt;xs:restriction base="OneDigitUnsignedInt"&gt;               &lt;xs:minInclusive value="0"/&gt;               &lt;xs:maxInclusive value="3"/&gt;             &lt;/xs:restriction&gt;           &lt;/xs:simpleType&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;xs:element name="laneList"&gt;       &lt;xs:complexType&gt;         &lt;xs:sequence minOccurs="1" maxOccurs="unbounded"&gt;           &lt;xs:element name="numLaneSection" type="TwoDigitUnsignedInt"/&gt;           &lt;xs:element name="laneSectionList"&gt;             &lt;xs:sequence minOccurs="1" maxOccurs="unbounded"&gt;               &lt;xs:element name="laneSection" type="LaneSection" /&gt;             &lt;/xs:sequence&gt;           &lt;/xs:element&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:choice&gt;   &lt;/xs:complexType&gt;</pre> |                      |              |



```

    </xs:sequence>
  </xs:element>
</xs:sequence>
</xs:complexType>
</xs:element>
</xs:complexType>
</xs:element>
<xs:element name="laneOnIntersection" >
  <xs:complexType>
    <xs:sequence maxOccurs="unbounded">
      <xs:element name="intersectionId" type="ID32bit" />
      <xs:element name="intersectionLaneList">
        <xs:sequence maxOccurs="unbounded">
          <xs:element name="laneId" type="ID32bit" />
          <xs:element name="intersectionLaneEdgeList">
            <xs:complexType>
              <xs:sequence maxOccurs="unbounded">
                <xs:element name="laneEdgeId" type="32bit"/>
                <xs:element name="startLanePointId" type="ID32bit" />

                <xs:element name="startContinuousLaneInfo" >
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element name="roadElementId" type="ID32bit"/>
                      <xs:element name="laneSectionId" type="ID32bit"/>
                      <xs:element name="laneId" type="ID32bit"/>
                      <xs:element name="startLanePointId" type="ID32bit"/>
                    </xs:sequence>
                  </xs:complexType>
                </xs:element>
                <xs:element name="endLanePointId" type="ID32bit" />
                <xs:element name="endContinuousLaneInfo" >
                  <xs:complexType>
                    <xs:sequence>
                      <xs:element name="roadElementId" type="ID32bit"/>
                      <xs:element name="laneSectionId" type="ID32bit"/>
                      <xs:element name="laneId" type="ID32bit"/>
                      <xs:element name="startLanePointId" type="ID32bit"/>
                    </xs:sequence>
                  </xs:complexType>
                </xs:element>
                <xs:element name="lengthLaneEdge" type="Length" />

```

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |
|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
|           | <pre> &lt;xs:element name="intesectionlaneEdgeShapeList"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="coordinatesStartLanePoint" type="PointLoca- tion" /&gt;       &lt;xs:element name="coordinatesEndLanePoint" type="PointLocation" /&gt;       &lt;xs:element name="numShapePoint" type="FourDigitUnsignedInt" /&gt;       &lt;xs:element name="shapePointList" type="ShapePointList" /&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document | ISO 14296:2016 |
| Remarks   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |

## lane element

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |              |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | LaneElement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data status category | static       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data element |
| Definition and description | Lane element provides information on the individual lane. Lane Element serves as the smallest unit of the special lane network that is independent and having a lane joint at each end. Lane Element provides the data on an independent lane.                                                                                                                                                                                                                                                                                                                                                 |                      |              |
| Data structure             | <pre> &lt;xs:complexType name="LaneElement"&gt;   &lt;xs:element name="laneId" type="ID32bit"/&gt;   &lt;xs:element name="lanePositionNumber" type="TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="laneType" type="LaneType" /&gt;   &lt;xs:element name="directionIngressAprochToIntersection" type="EightBitAs- signedCode" minOccurs="0"/&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       bit 0 ="go straight"       bit 7 ="slight left"     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt;   &lt;xs:element name="connectFrom"&gt;     &lt;xs:complexType&gt; </pre> |                      |              |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
|           | <pre> &lt;xs:sequence maxOccurs="unbounded"&gt;   &lt;xs:element name="roadElementId" type="ID32bit" minOccurs="0"/&gt;   &lt;xs:element name="laneSectionId" type="ID32bit" minOccurs="0"/&gt;   &lt;xs:element name="laneId" type="ID32bit"/&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; &lt;xs:element name="connectTo"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence maxOccurs="unbounded"&gt;       &lt;xs:element name="roadElementId" type="ID32bit" minOccurs="0"/&gt;       &lt;xs:element name="laneSectionId" type="ID32bit" minOccurs="0"/&gt;       &lt;xs:element name="laneId" type="ID32bit"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;xs:element name="laneEdgeList"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence maxOccurs="unbounded"&gt;       &lt;xs:element name="laneEdgeId" type="ID8bit"/&gt;       &lt;xs:element name="startLanePointId" type="ID8bit"/&gt;       &lt;xs:element name="endLanePointId" type="ID8bit"/&gt;       &lt;xs:element name="lengthLaneEdge" type="Length"/&gt;       &lt;xs:element name="availabilityMovingAdjoiningLane" type="Availability-MovingAdjoiningLane" /&gt;       &lt;xs:element name="laneEdgeShapeList"&gt;         &lt;xs:complexType&gt;           &lt;xs:sequence maxOccurs="unbounded"&gt;             &lt;xs:element name="laneShape" type="LaneShape" /&gt;           &lt;/xs:sequence&gt;         &lt;/xs:complexType&gt;       &lt;/xs:element&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document | ISO 14296:2016 |
| Remarks   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |

lane keep offset

|                            |                                                                                                                                                   |                      |                     |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|---------------------|
| Data name                  | LaneKeepOffset                                                                                                                                    | Data status category | dynamic             |
|                            |                                                                                                                                                   | Data concept type    | value domain        |
| Definition and description | Lateral distance from the outer edges of the tires of the vehicle to the center of the width of lane marking, which the vehicle has exceeded [m]. |                      |                     |
| Data structure             | <xs:simpleType name="LaneKeepOffset " type="EXTERNAL"/>                                                                                           |                      |                     |
| Issued by                  |                                                                                                                                                   | source document      | ISO 11270:2014 LKAS |
| Remarks                    |                                                                                                                                                   |                      |                     |

## lane section

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | LaneSection                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data element   |
| Definition and description | Lane section is a portion of a Lane of the Road Element where the number of lanes in a single direction of travel remains the same. Lane sections are put in order according to the direction of travel.                                                                                                                                                                                                                                                                                                           |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="LaneSection"&gt;   &lt;xs:element name="laneSectionId" type="ID32bit"/&gt;   &lt;xs:element name="numLane" type="TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="laneListInLaneSection"&gt;     &lt;xs:complexType name="LaneList"&gt;       &lt;xs:sequence minOccurs="1" maxOccurs="unbounded"&gt;         &lt;xs:element name="laneElement" type="LaneElement"/&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                |

## lane shape

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | LaneShape                                                                                                                                                                                                                                                                                                                                                                                                                     | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data element   |
| Definition and description | Lane Shape provides shape data of each lane that consists of one or more Lane edges.                                                                                                                                                                                                                                                                                                                                          |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="LaneShape"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="coordinatesStartLanePoint" type="PointLocation"/&gt;     &lt;xs:element name="coordinatesEndLanePoint" type="PointLocation"/&gt;     &lt;xs:element name="numShapePoint" type="xs:unsignedByte" /&gt;     &lt;xs:element name="shapePointList" type="ShapePointList" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |

## lane type

|                            |                       |                      |              |
|----------------------------|-----------------------|----------------------|--------------|
| Data concept name          | LaneType              | Data status category | static       |
|                            |                       | Data concept type    | value domain |
| Definition and description | It is a type of lane. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:simpleType name="LaneType" type="SixteenBitAssignedCode"/&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       bit 0 ="normal"&gt;       bit 1 ="reversible"&gt;       bit 2 ="acceleration"&gt;       bit 3 ="deceleration"&gt;       bit 4 ="entrance/exit"&gt;       bit 5 ="dedicated vehicle"&gt;       bit 6 ="bus"&gt;       bit 7 ="taxi"&gt;       bit 8 ="HOV"&gt;       bit 9 ="HOT"&gt;       bit 10 ="emergency"&gt;       bit 11 ="shunting /waiting"&gt;       bit 12 ="bike"&gt;       bit 13 ="bicycle"&gt;       bit 14 ="reserved"&gt;       bit 15 ="reserved"&gt;     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |

## lane width

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | LaneWidth                                                            | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | value domain                  |
| Definition and description | Width of lane.                                                       |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="LaneWidth" type="Distance"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## last location reference point

|                            |                                                                                   |                      |              |
|----------------------------|-----------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | LastLocationReferencePoint                                                        | Data status category | static       |
|                            |                                                                                   | Data concept type    | data element |
| Definition and description | LastLocationReferencePoint specifies the last LRP of an ordered sequence of LRPs. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                           |                 |                      |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Data structure | <code>&lt;xs:complexType name="LastLocationReferencePoint"&gt;</code><br><code>&lt;xs:sequence&gt;</code><br><code>&lt;xs:element name="coordinate" type="RelativeGeoCoordinate"/&gt;</code><br><code>&lt;xs:element name="lineProperties" type="LineProperties"/&gt;</code><br><code>&lt;/xs:sequence&gt;</code><br><code>&lt;/xs:complexType&gt;</code> |                 |                      |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                           | source document | ISO/TS 21219-22:2017 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                           |                 |                      |

#### lateral clearance

|                            |                                                                                                     |                      |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data name                  | LateralClearance                                                                                    | Data status category | dynamic              |
|                            |                                                                                                     | Data concept type    | value domain         |
| Definition and description | Lateral distance between the side of the subject vehicle and the near side of a target vehicle [m]. |                      |                      |
| Data structure             | <code>&lt;xs:simpleType name="LateralClearance" type="EXTERNAL"/&gt;</code>                         |                      |                      |
| Issued by                  |                                                                                                     | source document      | ISO 17387:2008 LCDAS |
| Remarks                    |                                                                                                     |                      |                      |

#### lateral jerk

|                            |                                                                          |                      |                     |
|----------------------------|--------------------------------------------------------------------------|----------------------|---------------------|
| Data name                  | LateralJerk                                                              | Data status category | dynamic             |
|                            |                                                                          | Data concept type    | value domain        |
| Definition and description | Rate of change of lateral acceleration/deceleration [m/s <sup>3</sup> ]. |                      |                     |
| Data structure             | <code>&lt;xs:simpleType name="LateralJerk " type="EXTERNAL"/&gt;</code>  |                      |                     |
| Issued by                  |                                                                          | source document      | ISO 11270:2014 LKAS |
| Remarks                    |                                                                          |                      |                     |

#### lateral offset

|                            |                                                                                                                                                                 |                      |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data name                  | LateralOffset                                                                                                                                                   | Data status category | dynamic              |
|                            |                                                                                                                                                                 | Data concept type    | value domain         |
| Definition and description | Lateral distance between the longitudinal centerlines of a subject vehicle (SV) and a target vehicle (TV), measured as a percentage of the width of the SV [%]. |                      |                      |
| Data structure             | <code>&lt;xs:simpleType name="LateralOffset " type="EXTERNAL"/&gt;</code>                                                                                       |                      |                      |
| Issued by                  |                                                                                                                                                                 | source document      | ISO 22839:2013 FVCMS |
| Remarks                    |                                                                                                                                                                 |                      |                      |

## latitude

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Latitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | value domain   |
| Definition and description | Value of the latitude of ITRF94 coordinate (positive value means the north latitude).<br>Eight digit latitude is used for standard resolution (unit: 1/1 000 000 °)<br>Nine digit latitude is used for high resolution (unit: 1/10 000 000 °)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="Latitude"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="standardLatitude"&gt;       &lt;xs:simpleType name="StandardResolutionLatitude"&gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-90000000"/&gt;           &lt;xs:maxInclusive value="+90000000"/&gt;           &lt;xs:totalDigits value="8"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="highResolutionLatitude"&gt;       &lt;xs:simpleType name="HighResolutionLatitude"&gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-900000000"/&gt;           &lt;xs:maxInclusive value="+900000000"/&gt;           &lt;xs:totalDigits value="9"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |

## latitude

|                            |                                    |                      |              |
|----------------------------|------------------------------------|----------------------|--------------|
| Data concept name          | Latitude                           | Data status category | dynamic      |
|                            |                                    | Data concept type    | value domain |
| Definition and description | Unit of Latitude is 1/10 000 000 ° |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:complexType name="Latitude" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="latitude_1" &gt;       &lt;xs:complexType&gt;         &lt;xs:element name="isNorth" type="xs:boolean" /&gt;         &lt;xs:element name="dDegree_1"           &lt;xs:simpleType &gt;             &lt;xs:restriction base="xs:integer"&gt;               &lt;xs:minInclusive value="0"/&gt;               &lt;xs:maxInclusive value="+900000000"/&gt;               &lt;xs:totalDigits value="9"/&gt;             &lt;/restriction&gt;           &lt;/xs:simpleType&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="latitude_2" &gt;       &lt;xs:simpleType &gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-900000000"/&gt;           &lt;xs:maxInclusive value="+900000000"/&gt;           &lt;xs:totalDigits value="9"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document | proposed CITS data dictionary |
| Remarks        | North indicates north (true)/south (false).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                               |

## length

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Length                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | value domain   |
| Definition and description | Length or Distance.<br>It consists of value and unit of length.                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="Length"&gt;   &lt;xs:element name="valueOfLength" &gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedInt" &gt;         &lt;xs:minInclusive value="0"/&gt;         &lt;xs:maxInclusive value="4294967295"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:element&gt;   &lt;xs:element name="unitOfLength" type="UnitOfMeasure" minOccurs="0"/&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |



## light bar in use

|                            |                                                       |                      |                               |
|----------------------------|-------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | LightbarInUse                                         | Data status category | dynamic                       |
|                            |                                                       | Data concept type    | data element                  |
| Definition and description | It provides the status of the light bar.              |                      |                               |
| Data structure             | <xs:simpleType name="LightbarInUse" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                       |                      |                               |

## limited speed

|                            |                                                      |                      |                               |
|----------------------------|------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | LimitedSpeed                                         | Data status category | dynamic                       |
|                            |                                                      | Data concept type    | value domain                  |
| Definition and description | It provides the effective range of the speed.        |                      |                               |
| Data structure             | <xs:simpleType name="LimitedSpeed" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                      |                      |                               |

## linear location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |            |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | LinearLocationReference                                                                                                                                                                                                                                                                                                                                                                                                                       | Data status category | static     |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data frame |
| Definition and description | A linear location is a one-dimensional part of a road or a road network. Linear locations consist of at least one line. If more than one line is used to describe the location then these lines shall form a connected path in the road network. Offsets may be used to identify locations which do not start or end exactly at a network node. Examples of linear locations are traffic jams, (temporary) speed limits, (calculated) routes. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Data structure | <pre> &lt;xs:complexType name="LinearLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="first" type="FirstLocationReferencePoint"/&gt;     &lt;xs:element name="last" type="LastLocationReferencePoint"/&gt;     &lt;xs:element name="intermediates" type="IntermediateLocationReferencePoint" minOccurs="0" maxOccurs="unbounded"/&gt;     &lt;xs:element name="positiveOffset" type="tdt:DistanceMetresMax15000" minOccurs="0"/&gt;     &lt;xs:element name="negativeOffset" type="tdt:DistanceMetresMax15000" minOccurs="0"/&gt;     &lt;xs:element name="shape" type="Shape" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                      |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document | ISO/TS 21219-22:2017 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                      |

## link cost

|                            |                                                                                                                                       |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | LinkCost                                                                                                                              | Data status category | static       |
|                            |                                                                                                                                       | Data concept type    | data element |
| Definition and description | Link Cost provides information about the length of a Link, travel time and the slope of a Link that may be useful for Route Planning. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="LinkCost"&gt;   &lt;xs:element name="roadElementId" type="ID32bit" /&gt;   &lt;xs:element name="directionLinkCost"&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="OneDigitUnsignedInt"&gt;         &lt;xs:minInclusive value="0"/&gt;         &lt;xs:maxInclusive value="1"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:element&gt;   &lt;xs:element name="startIntersectionId" type="ID32bit" /&gt;   &lt;xs:element name="endIntersectionId" type="ID32bit" /&gt;   &lt;xs:element name="coverageUpperLevelLink" type="TwoDigitUnsignedInt"/&gt;   &lt;xs:element name="roadElementIdUpperLevel" type="ID32bit" minOccurs="0"/&gt;   &lt;xs:element name="historicalTrafficStatus" type="dd:TwoDigitUnsignedInt" minOccurs="0"/&gt;   &lt;xs:element name="hovLaneFlag" type="Flag" minOccurs="0"/&gt;   &lt;xs:element name="singleLaneFlag" type="Flag" minOccurs="0"/&gt;   &lt;xs:element name="tollRoadFlag" type="Flag"/&gt;   &lt;xs:element name="numTrafficSignals" type="FourDigitUnsignedInt" minOccurs="0"/&gt;   &lt;xs:element name="directionTrafficFlow" type="OneDigitUnsignedInt" /&gt;   &lt;xs:element name="crossingOppositeCarriageway" type="Flag" /&gt;   &lt;xs:element name="sameCostValueFlag" type="Flag" /&gt;   &lt;xs:element name="linkType" type="dd:RoadType"/&gt;   &lt;xs:element name="roadFunctionalCode" type="TwoDigitCode" minOccurs="0"/&gt;   &lt;xs:element name="lengthRoadElement" type="Length" /&gt;   &lt;xs:element name="averageTravelTime" type="xs:second" minOccurs="0"/&gt;   &lt;xs:element name="roadSlopeInfo" type="RoadSlope" minOccurs="0" /&gt;   &lt;xs:element name="roadNetworkConnectorId" type="ID32bit" minOccurs="0"/&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                |

## link attributes

|                            |                                                                           |                      |                               |
|----------------------------|---------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Link Attributes                                                           | Data status category | dynamic                       |
|                            |                                                                           | Data concept type    | data frame                    |
| Definition and description | It provides attributes for a Link Reference method.                       |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="LinkAttributes" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                           |                      |                               |

## link method

|                            |                                                                                                                                                                        |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | LinkMethod                                                                                                                                                             | Data status category | dynamic                       |
|                            |                                                                                                                                                                        | Data concept type    | data frame                    |
| Definition and description | It provides the method identifier for the Link Reference method.<br>It defines the VICS method, TMC method, road section ID method, Dynamic Location Reference method. |                      |                               |
| Data structure             | <xs:simpleType name="LinkAttributes" type="EXTERNAL"/>                                                                                                                 |                      |                               |
| Issued by                  | JARI                                                                                                                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                        |                      |                               |

## local time

|                            |                                                                 |                      |                               |
|----------------------------|-----------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | LocalTime                                                       | Data status category | dynamic                       |
|                            |                                                                 | Data concept type    | value domain                  |
| Definition and description | Local time expressed by year, month, day, hour, minute, second. |                      |                               |
| Data structure             | <xs:simpleType name="LocalTime" type="DateTime"/>               |                      |                               |
| Issued by                  | JARI                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                 |                      |                               |

## location image

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | LocationImage                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data element   |
| Definition and description | Location Image provides a background image of the Road Element and the Intersection upon which guidance information is displayed.                                                                                                                                                                                                                                                                                                                                                                                             |                      |                |
| Data structure             | <pre>&lt;&lt;xs:complexType name="LocationImage"/&gt; &lt;xs:sequence&gt;   &lt;xs:element name="intersectionId" type="ID32bit" /&gt;   &lt;xs:element name="ingressRoadElementId" type="ID32bit" /&gt;   &lt;xs:element name="locationImageId" type="ID32bit" /&gt;   &lt;xs:element name="guideType" type="OneDigitUnsigendInt"/&gt;   &lt;xs:element name="lenghtBeforeIntersection" type="Length"/&gt;   &lt;xs:element name="textLocationImage" type="xs:string"/&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                |

## longitude

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Longitude                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | value domain   |
| Definition and description | Value of the longitude of IFT94 coordinate (positive value means the east longitude).<br>Ten digit latitude is used for the standard resolution (unit: 1/1 000 000 °)<br>Eleven digit latitude is used for the high resolution (unit: 1/10 000 000 °)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="Longitude"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="standardResolutionLongitude"&gt;       &lt;xs:simpleType name="StandardLongitude"&gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-1800000000"/&gt;           &lt;xs:maxInclusive value="+1800000000"/&gt;           &lt;xs:totalDigits value="10"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="highResolutionLongitude"&gt;       &lt;xs:simpleType name="HighResolutionLongitude"&gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-1800000000"/&gt;           &lt;xs:maxInclusive value="+1800000000"/&gt;           &lt;xs:totalDigits value="11"/&gt;         &lt;/xs:restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |

## longitude

|                            |                                     |                      |              |
|----------------------------|-------------------------------------|----------------------|--------------|
| Data concept name          | Longitude                           | Data status category | dynamic      |
|                            |                                     | Data concept type    | value domain |
| Definition and description | Unit of Longitude is 1/10 000 000 ° |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                 |                               |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:complexType name="Longitude" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="de-longitude1"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="isEast" type="xs:boolean" /&gt;         &lt;xs:element name="degree" &gt;           &lt;xs:restriction base="xs:integer"&gt;             &lt;xs:minInclusive value="0"/&gt;             &lt;xs:maxInclusive value="+1800000000"/&gt;             &lt;xs:totalDigits value="10"/&gt;           &lt;/restriction&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="de_longitude2" &gt;       &lt;xs:simpleType&gt;         &lt;xs:restriction base="xs:integer"&gt;           &lt;xs:minInclusive value="-1800000000"/&gt;           &lt;xs:maxInclusive value="+1800000000"/&gt;           &lt;xs:totalDigits value="10"/&gt;         &lt;/restriction&gt;       &lt;/xs:simpleType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | source document | proposed CITS data dictionary |
| Remarks        | East indicates east (true)/west (false)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                 |                               |

## longitudinal acceleration

|                            |                                                                                                                                                                                                                                                                                                                 |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | LongitudinalAcceleration                                                                                                                                                                                                                                                                                        | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                 | Data concept type    | data element       |
| Definition and description | Acceleration of the longitudinal direction.                                                                                                                                                                                                                                                                     |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="LongitudinalAcceleration" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfAcceleration" type="FourDigitUnsignedInt"/&gt;     &lt;xs:element name="unitCodeOfAcceleration" type="FourBitCode" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                 | source document      | ISO 16787:2016 APS |
| Remarks                    | Example of UnitCode: 0001=0,01m/sec2, 0010=0,02m/sec2, 0011=0,1m, 0100=0,25m/sec2, 0101=1m/sec2, 0110=0,01G                                                                                                                                                                                                     |                      |                    |

## longitudinal control status

|                            |                                                                      |                      |                    |
|----------------------------|----------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | LongitudinalControlStatus                                            | Data status category | dynamic            |
|                            |                                                                      | Data concept type    | data element       |
| Definition and description | control status of ACC/CACC system                                    |                      |                    |
| Data structure             | <xs:simpleType name="LongitudinalControlStatus" type="xs:boolean" /> |                      |                    |
| Issued by                  |                                                                      | source document      | ISO 16787:2016 APS |
| Remarks                    | True if CACC system is on, false if CACC system is off.              |                      |                    |

[m]

## management of application

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ManagementOfApplication                                              | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | data frame                    |
| Definition and description | Information to manage the application including the ID and a header. |                      |                               |
| Data structure             | <xs:simpleType name="ManagementOfApplication" type="EXTERNAL"/>      |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## map data

|                            |                                                 |                      |                               |
|----------------------------|-------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | MapData                                         | Data status category | static                        |
|                            |                                                 | Data concept type    | data frame                    |
| Definition and description | Information for interpretation of map contents. |                      |                               |
| Data structure             | <xs:simpleType name="MapData" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                 |                      |                               |

## measurement technique

|                   |                      |                      |            |
|-------------------|----------------------|----------------------|------------|
| Data concept name | MeasurementTechnique | Data status category | static     |
|                   |                      | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                   |                 |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | Positioning method to find the position precision of the outline indirectly.<br>It provides GPS type and technique.                                                                                               |                 |                               |
| Data structure             | <pre>&lt;xs:complexType name="MeasurementTechnique" &gt;   &lt;xs:element name="GPSType" type="TwoBitCode" /&gt;   &lt;xs:element name="additionalTechnique" type="TwoBitCode"/&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by                  | JARI                                                                                                                                                                                                              | source document | proposed CITS data dictionary |
| Remarks                    | Additional technique; 0=GPSonly, 1=GPS+Inertial Navigation, 2=GPS+InertialNavigation+MapMatching                                                                                                                  |                 |                               |

## message time stamp

|                            |                                                                        |                      |                    |
|----------------------------|------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | MessageTimeStamp                                                       | Data status category | dynamic            |
|                            |                                                                        | Data concept type    | value domain       |
| Definition and description | Time and date of the data message.                                     |                      |                    |
| Data structure             | <pre>&lt;simpleType name="MessageTimeStamp" type="DateTime"/&gt;</pre> |                      |                    |
| Issued by                  |                                                                        | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                        |                      |                    |

## message and data management information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | MsgAndDataManage                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | data frame                    |
| Definition and description | It provides version information, service information, decode information and count information.                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="MsgAndDataManage" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="version" type="Version"/&gt;     &lt;xs:element name="id" type="Identifier"/&gt;     &lt;xs:element name="serviceInfo" type="ServiceInfo"/&gt;     &lt;xs:element name="dataControlInfo" type="DataControlInfo"/&gt;     &lt;xs:element name="codeInfo" type="CodeInfo"/&gt;     &lt;xs:element name="count" type="Count"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |

## message ID

|                   |           |                      |              |
|-------------------|-----------|----------------------|--------------|
| Data concept name | MessageID | Data status category | static       |
|                   |           | Data concept type    | value domain |



|                            |                                                         |                 |                               |
|----------------------------|---------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | Identifier for the message.                             |                 |                               |
| Data structure             | <xs:simpleType name="MessageID" type="xs:unsignedInt"/> |                 |                               |
| Issued by                  | JARI                                                    | source document | proposed CITS data dictionary |
| Remarks                    |                                                         |                 |                               |

[o]

object code

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ObjectCode                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | value domain       |
| Definition and description | It provides a feature code for the boundary object of a parking area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                    |
| Data structure             | <pre>&lt;xs:simpleType name="ObjectCode"&gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="nothing"/&gt;         &lt;xs:enumeration value="painting line"/&gt;         &lt;xs:enumeration value="rope"/&gt;         &lt;xs:enumeration value="kerb"/&gt;         &lt;xs:enumeration value="ditch"/&gt;         &lt;xs:enumeration value="pole"/&gt;         &lt;xs:enumeration value="prop"/&gt;         &lt;xs:enumeration value="building pillar"/&gt;         &lt;xs:enumeration value="rail"/&gt;         &lt;xs:enumeration value="fence"/&gt;         &lt;xs:enumeration value="wall"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="FourBitCode"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                    |

obstacle direction

|                            |                                                                                                                                                                                          |                      |              |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | ObstacleDirection                                                                                                                                                                        | Data status category | dynamic      |
|                            |                                                                                                                                                                                          | Data concept type    | data element |
| Definition and description | <p>It provides the moving direction of the obstacle.</p> <p>Moving direction is expressed by azimuth.</p> <p>Azimuth is the product of the value of azimuth and the unit of azimuth.</p> |                      |              |

|                |                                                           |                 |                               |
|----------------|-----------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="ObstacleDirection" type="Azimuth" /> |                 |                               |
| Issued by      | JARI                                                      | source document | proposed CITS data dictionary |
| Remarks        |                                                           |                 |                               |

## obstacle distance

|                            |                                                                                                       |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ObstacleDistance                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                       | Data concept type    | data element                  |
| Definition and description | It provides a distance along the road from the reference position of the ITS-station to the obstacle. |                      |                               |
| Data structure             | <xs:simpleType name="ObstacleDistance" type="DistanceAlongRoad"/>                                     |                      |                               |
| Issued by                  | JARI                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                       |                      |                               |

## OBU information

|                            |                                                                                                      |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | OBUInformation                                                                                       | Data status category | static                        |
|                            |                                                                                                      | Data concept type    | data element                  |
| Definition and description | It provides the information on OBU. OBU information contains maker-code, device-identifier, version. |                      |                               |
| Data structure             | <xs:simpleType name="OBUInformation" type="EXTERNAL"/>                                               |                      |                               |
| Issued by                  | JARI                                                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                      |                      |                               |

## occupancy

|                            |                                                                              |                      |                               |
|----------------------------|------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Occupancy                                                                    | Data status category | dynamic                       |
|                            |                                                                              | Data concept type    | value domain                  |
| Definition and description | It provides the congestion ratio or the number of passengers in the vehicle. |                      |                               |
| Data structure             | <xs:simpleType name="Occupancy" type="xs:unsignedByte"/>                     |                      |                               |
| Issued by                  | JARI                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                              |                      |                               |

## occupant information

|                            |                                                                                                                                                                                                                                                          |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | OccupancyInformation                                                                                                                                                                                                                                     | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                          | Data concept type    | data frame                    |
| Definition and description | It provides congestion ratio or position of occupants in the vehicle.                                                                                                                                                                                    |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="OccupantInformation" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="occupancy" type="Occupancy"/&gt;     &lt;xs:element name="posOccupants" type="PosOccupants"/&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                          |                      |                               |

## offset location

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | OffsetLocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Data status category | static           |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data concept type    | aggregate domain |
| Definition and description | Offset Location expresses the relative position based on PointLocation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |
| Data structure             | <pre>&lt;xs:complexType name="OffsetLocation"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="standardResolutionOffset"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="standard-xOffset"&gt;           &lt;xs:simpleType name="StandardXOffset" type="SixDigitSignedInt" /&gt;         &lt;/xs:element&gt;         &lt;xs:element name="standard-yOffset"&gt;           &lt;xs:simpleType name="StandardYOffset" type="SixDigitSignedInt" /&gt;         &lt;/xs:element&gt;         &lt;xs:element name="standard-zOffset" minOccurs="0"&gt;           &lt;xs:simpleType name="StandardZOffset" type="SevenDigitSignedInt" /&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="highResolutionOffset"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="high-xOffset"&gt;           &lt;xs:simpleType name="HighXOffset" type="SevenDigitSignedInt" /&gt;         &lt;/xs:element&gt;         &lt;xs:element name="high-yOffset"&gt;           &lt;xs:simpleType name="HighYOffset" type="SevenDigitSignedInt" /&gt;         &lt;/xs:element&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                  |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
|           | <pre> &lt;/xs:element&gt; &lt;xs:element name="high-zOffset" minOccurs="0"&gt;   &lt;xs:simpleType name="HightZOffset" type="FiveDigitSigendInt" /&gt; &lt;/xs:element&gt; &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:choice&gt; &lt;xs:annotation&gt; &lt;xs:documentation&gt;   *standard resolution&gt;   x offset (longitude offset) valuse -0,999999deg to +0,999999deg&gt;   LSB = 1/ 1 million degree (36/ 10 thousand second) &gt;   y offset (latitude offset) valuse -0,999999deg to +0,999999deg&gt;   LSB = 1/ 1 milion degree (36/ 10 thousand second) &gt;   z offset (altitude -99,9m to +99,9m&gt;   LSB = 0.1 metre&gt;   *high resolution&gt;   x offset (longitude offset) valuse -0,9999999deg to +0,9999999deg&gt;   LSB = 1/ 10 million degree (3,6/ 10 thousand second) &gt;   y offset (latitude offset) valuse -0,9999999deg to +0,9999999deg&gt;   LSB = 1/ 10 million degree (3,6/ 10 thousand second) &gt;   z offset (altitude -99,999m to +99,999m&gt;   LSB = 1 millimetre&gt; &lt;/xs:documentation&gt; &lt;/xs:annotation&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source document | ISO 14296:2016 |
| Remarks   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                 |                |

## operating condition

|                            |                                                                                                                                                                                                                                                                                                                                               |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | OperatingCondition                                                                                                                                                                                                                                                                                                                            | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data frame         |
| Definition and description | Operating condition of a parking facility.                                                                                                                                                                                                                                                                                                    |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="OperatingStatus"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="numberOfVacancy" type="xs:unsignedByte" /&gt;     &lt;xs:element name="statusOfOperating" type="StatusOfOperating" /&gt;     &lt;xs:element name="mObstacle" type="PFObstacle" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                               |                      |                    |

## operating hour

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | OperatingHour                                                                                                                                                                                                                                                                                                                                                                                                                                  | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | aggregate domain   |
| Definition and description | Operating hour of a parking facility.                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="OperatingHour"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="dayOfWeek" type="DayOfWeek" /&gt;     &lt;xs:element name="startTimeForEntry" type="Time" /&gt;     &lt;xs:element name="endTimeForEntry" type="Time" /&gt;     &lt;xs:element name="startTimeForLeaving" type="Time" /&gt;     &lt;xs:element name="endTimeForLeaving" type="Time" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |

[p]

## parking

|                            |                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Parking                                                          | Data status category | static                        |
|                            |                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides parking information on the road side.                |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="Parking" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                  |                      |                               |

## parking charge

|                            |                     |                      |              |
|----------------------------|---------------------|----------------------|--------------|
| Data concept name          | ParkingCharge       | Data status category | static       |
|                            |                     | Data concept type    | value domain |
| Definition and description | Charge for parking. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                    |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingCharge"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="paymentMethod" type="TwoBitCode" /&gt;     &lt;xs:element name="collectionMethod" type="TwoBitCode" /&gt;     &lt;xs:element name="paymentLocation" type="Location" /&gt;     &lt;xs:element name="listOfCharge" &gt;       &lt;xs:complexType&gt;         &lt;xs:sequence&gt;           &lt;xs:element name="appliedVehicleType" type="BitAssignedVehicleType"/&gt;           &lt;xs:element name="creditHour" type="xs:unsignedByte"/&gt;           &lt;xs:element name="ratePerCreditHour" type="xs:unsignedByte"/&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |                    |

## parking charge type

|                            |                                                                                                                                                                   |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingChargeType                                                                                                                                                 | Data status category | static             |
|                            |                                                                                                                                                                   | Data concept type    | value domain       |
| Definition and description | Type of parking charge, i.e. free/hour/daily/weekly/monthly.                                                                                                      |                      |                    |
| Data structure             | <pre> &lt;xs:simpleType name="Parking ChargeType"&gt;   &lt;xs:element name="parkingFree-Hour-Daily-Weekly" type="TwoBitCode" /&gt; &lt;/xs:simpleType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                   |                      |                    |

## parking facility

|                            |                                                                                                                                                                                                                      |                      |                  |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | ParkingFacility                                                                                                                                                                                                      | Data status category | dynamic / static |
|                            |                                                                                                                                                                                                                      | Data concept type    | data module      |
| Definition and description | <p>Facilities and area where a vehicle is parked temporarily.</p> <p>It is called a parking lot, car park, parking garage.</p> <p>Parking facility information is constructed in static and dynamic information.</p> |                      |                  |

|                |                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingFacility"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="parkingFacilityID" type="ParkingFacilityID" /&gt;     &lt;xs:element name="parkingFacilityStaticInfo" type="ParkingFacilityStaticInfo" /&gt;     &lt;xs:element name="parkingFacilityDynamicInfo" type="ParkingFacilityDynamicInfo" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                    | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |

## parking facility dynamic information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingFacilityDynamic Information                                                                                                                                                                                                                                                                                                                                                                                       | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                          | Data concept type    | data frame         |
| Definition and description | Dynamic Information of a parking facility                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingFacilityDynamicInformation"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="operatingStatusInformation" type="OperatingCondition" /&gt;     &lt;xs:element name="passagewayStatusInformation" type="PassagewayCondition" /&gt;     &lt;xs:element name="parkingSpaceStatusInformation" type="ParkingSpaceCondition" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                          | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |

## parking facility general characteristics

|                            |                                                        |                      |            |
|----------------------------|--------------------------------------------------------|----------------------|------------|
| Data concept name          | ParkingFacilityGeneral Characteristics                 | Data status category | static     |
|                            |                                                        | Data concept type    | data frame |
| Definition and description | It provides general information on a parking facility. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingFacilityGeneralCharacteristics"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="parkingFacilityName" type="xs:string" /&gt;     &lt;xs:element name="parkingFacilityTelephone" type="TwelveDigitIntBCD" /&gt;     &lt;xs:element name="parkingFacilityAddress" type="xs:string" /&gt;     &lt;xs:element name="parkingFacilityLocation" type="Position" /&gt;     &lt;xs:element name="parkingFacilityConnectedRoad" type="ConnectedRoad" /&gt;     &lt;xs:element name="parkingFacilityOwner" type="xs:string" /&gt;     &lt;xs:element name="parkingFacilityNumberOfMaxsParking" type="xs:unsigned-Byte" /&gt;     &lt;xs:element name="parkingFacilityOperatingHour" type="OperatingHour" /&gt;     &lt;xs:element name="parkingFacilityCharge" type="ParkingCharge" /&gt;     &lt;xs:element name="parkingFacilityOperater" type="xs:boolean" /&gt;     &lt;xs:element name="parkingFacilityApplicabilityAPS" type="xs:boolean" /&gt;     &lt;xs:element name="parkingFacilityMethod" type="ParkingFacilityMethod" /&gt;     &lt;xs:element name="parkingFacilityStructure" type="TwoBitCode" /&gt;     &lt;xs:element name="parkingFacilityPlanarShape" type="PlanarShape" /&gt;     &lt;xs:element name="parkingFacilityAvailableService" type="AvailableService" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                    |

## parking facility method

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingFacilityMethod                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data concept type    | data frame         |
| Definition and description | It provides static characteristics of a parking facility.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingFacilityMethod"&gt;   &lt;xs:element name="parkingPlace" type="ParkingPlace" /&gt;   &lt;xs:element name="parkingLevel" type="ParkingLevel" /&gt;   &lt;xs:element name="parkingInOutBuilding" type="ParkingInOutBuilding" /&gt;   &lt;xs:element name="parkingType" type="ParkingType" /&gt;   &lt;xs:element name="parkingChargeType" type="ParkingChargeType"/&gt;   &lt;xs:element name="parkingIsolation" type="ParkingIsolation" /&gt;   &lt;xs:element name="parkingLock" type="ParkingLocking" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |

## parking facility obstacle

|                            |                                                                          |                      |              |
|----------------------------|--------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | ParkingFacilityObstacle                                                  | Data status category | dynamic      |
|                            |                                                                          | Data concept type    | data element |
| Definition and description | It provides obstacles in a parking, i.e. vehicle, person, shopping-cart. |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingFacilityObstacle"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="obstacleType" type="FourBitCode" /&gt;     &lt;xs:element name="obstacleLocation" type="Location" /&gt;     &lt;xs:element name="obstacleSize" type="Size" /&gt;     &lt;xs:element name="obstacleMoving" type="xs:boolean" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                    | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                    |

## parking facility static information

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingFacilityStatic Informatione                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data concept type    | data frame         |
| Definition and description | <p>It provides static information of a parking facility.</p> <p>Parking facility is constructed in a passageway block and a parking space block.</p> <p>Passageway block is the area for moving a vehicle and a parking space block is the area for parking/storing a vehicle.</p>                                                                                                                                                          |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingFacilityStaticInformation"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="generalInformation" type="ParkinFacilityGeneralCharacteristics" /&gt;     &lt;xs:element name="passagewayInformation" type="PassagewayBlockCharacteristics" /&gt;     &lt;xs:element name="parkingSpaceInformation" type="ParkingSpaceBlockCharacteristics" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |

## parking in-out building

|                            |                                                                                                                                                              |                      |                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingInOutBuilding                                                                                                                                         | Data status category | static             |
|                            |                                                                                                                                                              | Data concept type    | data element       |
| Definition and description | It provides classification of indoor/outdoor parking spaces.                                                                                                 |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name=" ParkingInOutBuilding"&gt;   &lt;xs:element name="indoor-Outdoor-Both" type="TwoBitCode" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                              | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                              |                      |                    |

parking isolation

|                            |                                                                                                                                             |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingIsolation                                                                                                                            | Data status category | static             |
|                            |                                                                                                                                             | Data concept type    | data element       |
| Definition and description | It provides the isolation method between the parking facility and the road, i.e. gate/free.                                                 |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingIsolation"&gt;   &lt;xs:element name="Free-Gate" type="TwoBitCode" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                             | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                             |                      |                    |

parking level

|                            |                                                                                                                                                                                                                   |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingLevel                                                                                                                                                                                                      | Data status category | static             |
|                            |                                                                                                                                                                                                                   | Data concept type    | value domain       |
| Definition and description | Level of the parking space, i.e. one-level/ multi-level                                                                                                                                                           |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingLevel"&gt;   &lt;xs:element name="oneLevel-MultiLevel-Both" type="TwoBitCode" /&gt;   &lt;xs:element name="numberOfLevel" type="xs:byte" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                   |                      |                    |

parking place

|                            |                                                                                                                                                 |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingPlace                                                                                                                                    | Data status category | static             |
|                            |                                                                                                                                                 | Data concept type    | data element       |
| Definition and description | The place of the parking space, i.e. on-street/off-street.                                                                                      |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingPlace"&gt;   &lt;xs:element name="OnStreet-OutStree" type="TwoBitCode" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                 | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                 |                      |                    |

parking space

|                   |              |                      |            |
|-------------------|--------------|----------------------|------------|
| Data concept name | ParkingSpace | Data status category | static     |
|                   |              | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Definition and description | It provides characteristics of an individual parking space where a vehicle can park.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpace"&gt;   &lt;xs:element name="parkingSpaceID" type="ParkingSpaceID" /&gt;   &lt;xs:element name="parkingMethod" type="ParkingMethod" /&gt;   &lt;xs:element name="appliedVehicleType" type="BitAssignedVehicleType"/&gt;   &lt;xs:element name="spaceDimension" type="SpaceDimension" /&gt;   &lt;xs:element name="spaceRectangle" type="SpaceRectangle" /&gt;   &lt;xs:element name="spaceLocation" type="SpaceLocation" /&gt;   &lt;xs:element name="entryVehicleDirectionOrder" type="EntryVehicleDirectionOrder" /&gt;   &lt;xs:element name="boundaryObject" type="BoundaryObject" /&gt;   &lt;xs:element name="parkingSpaceEquipment" type="ParkingSpaceEquipment" /&gt;   &lt;xs:element name="sideMirror-Antena Storage" type="TwoBitAssignedCode" /&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                    |

## parking space battery charger

|                            |                                                                                                                                                                                                                                                                                                                                                |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceBatteryCharger                                                                                                                                                                                                                                                                                                                     | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data element       |
| Definition and description | Information on the battery charger for an electrical vehicle nearby a parking space.                                                                                                                                                                                                                                                           |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceBatteryCharger"&gt;   &lt;xs:element name="BatteryChargerType" type="TwoBitCode" /&gt;   &lt;xs:element name="BatteryChargerLocation" type="Location" /&gt;   &lt;xs:element name="BatteryChargerSpecificationDetail" type="BatteryChargerSpecificationDetail" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                |                      |                    |

## parking space block characteristic

|                            |                                                                  |                      |            |
|----------------------------|------------------------------------------------------------------|----------------------|------------|
| Data concept name          | ParkingSpaceBlockCharacteristic                                  | Data status category | static     |
|                            |                                                                  | Data concept type    | data frame |
| Definition and description | Characteristics of parking spaces blocked in a parking facility. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                    |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingSpaceBlockCharacteristic"&gt;   &lt;xs:element name="availableVehicleTypeAndNumber" &gt;     &lt;xs:complexType&gt;       &lt;xs:sequence&gt;         &lt;xs:element name="vehicleType" type="VehicleType" /&gt;         &lt;xs:element name="numberOfParkingSpace" type="xs:unsignedByte" /&gt;       &lt;/xs:sequence&gt;     &lt;/xs:complexType&gt;   &lt;/xs:element&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="parkingSpaceBlockPlanarShape" type="PlanarShape" /&gt;   &lt;/xs:sequence&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="parkingSpace" type="ParkingSpace" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                    |

## parking space condition

|                            |                                                                                                                                                                                                                         |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceCondition                                                                                                                                                                                                   | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                         | Data concept type    | data frame         |
| Definition and description | Use of parking spaces in a parking facility.                                                                                                                                                                            |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceCondition"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="locationOfVacancySlot" type="ParkingSpaceLocation" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                         | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                         |                      |                    |

## parking space dimension

|                            |                                           |                      |                  |
|----------------------------|-------------------------------------------|----------------------|------------------|
| Data concept name          | ParkingSpaceDimension                     | Data status category | static           |
|                            |                                           | Data concept type    | aggregate domain |
| Definition and description | Dimension of an individual parking space. |                      |                  |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                    |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="SpaceDimension"&gt;   &lt;xs:element name="spaceWidth" type="Length" /&gt;   &lt;xs:element name="spaceDepthLeft" type="Length" /&gt;   &lt;xs:element name="spaceDepthRight" type="Length" /&gt;   &lt;xs:element name="spaceHeight" type="Length" /&gt;   &lt;xs:element name="angleBetweenPassagewayEdgeLineAndDepthLeftLine" type="Degree"/&gt;   &lt;xs:element name="slope" type="Slope" /&gt;   &lt;xs:element name="LengthFromEntrancePointOfDepthLeftLine ToEntranceLeft- CornerOfRectangle" type="Length" /&gt;   &lt;xs:element name="intervalLeft" type="Length" /&gt;   &lt;xs:element name="intervalRight" type="Length" /&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                 |                    |

## parking space empty detector

|                            |                                                                                                                                                                                                                                    |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceEmptyDetector                                                                                                                                                                                                          | Data status category | static             |
|                            |                                                                                                                                                                                                                                    | Data concept type    | data element       |
| Definition and description | Information on an empty detector of a parking space.                                                                                                                                                                               |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceEmptyDetector"&gt;   &lt;xs:element name="EmptyDetectorType" type="TwoBitCode" /&gt;   &lt;xs:element name="EmptyDetectorPosition" type="Location" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                    | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                    |                      |                    |

## parking space equipment

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceEquipment                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | data frame         |
| Definition and description | Information on equipment such as vehicle stopper, flap board, empty detector, battery charger, turn table, for a parking space.                                                                                                                                                                                                                                                                                                                                 |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceEquipment"&gt;   &lt;xs:element name="stopper" type="ParkingSpaceStopper" /&gt;   &lt;xs:element name="flapBoard" type="ParkingSpaceFlapBoard" /&gt;   &lt;xs:element name="emptyDetector" type="ParkingSpaceEmptyDetector" /&gt;   &lt;xs:element name="batteryCharger" type="ParkingSpaceBatteryCharger" /&gt;   &lt;xs:element name="turnTable" type="ParkingSpaceTurnTable" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                    |

## parking space flap board

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceFlapBoard                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data concept type    | aggregate domain   |
| Definition and description | Information on a flap board for a vehicle locking device in a parking space (position and height).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingSpaceFlapBoard"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="FlapSize"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="flapLength" type="xs:unsignedByte"/&gt;         &lt;xs:element name="flapWidth" type="xs:unsignedByte"/&gt;         &lt;xs:element name="flapHeight" type="xs:unsignedByte"/&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="FlapPosition"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="LengthFmFront" type="xs:unsignedByte"/&gt;         &lt;xs:element name="LengthFmLeftEdge" type="xs:unsignedByte"/&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                    |

## parking space location

|                            |                                                                                                                                                                                                                                                                                                                                                                     |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceLocation                                                                                                                                                                                                                                                                                                                                                | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                     | Data concept type    | data element       |
| Definition and description | Position of an individual parking space.                                                                                                                                                                                                                                                                                                                            |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingSpaceLocation"&gt;   &lt;xs:element name="EntranceLeftPositionFromReferencePosition" type="Position" /&gt;   &lt;xs:element name="ConnectedPassagewayElement" type="passagewayElementID" /&gt;   &lt;xs:element name="EntranceLeftPositionFromReferenceOfPassagewayElement" type="Position"/&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                     | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                     |                      |                    |

## parking space locking

|                   |                     |                      |              |
|-------------------|---------------------|----------------------|--------------|
| Data concept name | ParkingSpaceLocking | Data status category | static       |
|                   |                     | Data concept type    | data element |

|                            |                                                                                                                                                                 |                 |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Definition and description | Vehicle locking method of an individual parking space, i.e. free/individual locking/flap locking)                                                               |                 |                    |
| Data structure             | <pre>&lt;xs:simpleType name="ParkingSpaceLocking"&gt;   &lt;xs:element name="Free-IndividualLock-FlapLock" type="TwoBitCode" /&gt; &lt;/xs:simpleType&gt;</pre> |                 |                    |
| Issued by                  |                                                                                                                                                                 | source document | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                 |                 |                    |

## parking space method

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceMethod                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Data concept type    | data element       |
| Definition and description | Classification of an individual parking space.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingSpaceMethod"&gt;   &lt;xs:element name="OnStreet-OutStreet" type="ParkingPlace" /&gt;   &lt;xs:element name="OneLevel-MultiLevel-Both" type="ParkingLevel" /&gt;   &lt;xs:element name="Indoor-Outdoor-Both" type="ParkingInOutBuilding" /&gt;   &lt;xs:element name="Valet-SelfPropelled-Mechanical" type="ParkingType" /&gt;   &lt;xs:element name="Free-Hour-Daily-Weekly" type="ParkingChargeType" /&gt;   &lt;xs:element name="Free-Gate" type="ParkingIsolation" /&gt;   &lt;xs:element name="Free-IndividualLock-FlapLock" type="ParkingLock" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                      |                    |

## parking space rectangle

|                            |                                                                                                                                                                                                                                                                                                                                                                |                      |                    |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceRectangle                                                                                                                                                                                                                                                                                                                                          | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | value domain       |
| Definition and description | Position of the effective rectangle area of an individual parking space.                                                                                                                                                                                                                                                                                       |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="ParkingSpaceRectangle"&gt;   &lt;xs:element name="EntranceLeftPosition" type="Position" /&gt;   &lt;xs:element name="EntranceRightPosition" type="Position" /&gt;   &lt;xs:element name="DepthLeftPosition" type="Position" /&gt;   &lt;xs:element name="DepthRightPosition" type="Position" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                |                      |                    |

## parking space stopper

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceStopper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | value domain       |
| Definition and description | Vehicle stopper in a parking space (position and height).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceStopper"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="StopperSize"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="stopperLength" type="xs:unsignedByte"/&gt;         &lt;xs:element name="stopperWidth" type="xs:unsignedByte"/&gt;         &lt;xs:element name="stopperHeight" type="xs:unsignedByte"/&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="StopperPosition"&gt;       &lt;xs:complexType&gt;         &lt;xs:element name="lengthFromFrontLine" type="xs:unsignedByte" /&gt;         &lt;xs:element name="lengthFromLeftEdge" type="xs:unsignedByte" /&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | ISO 16787:2016 APS |
| Remarks                    | Unit is a centimetre.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                    |

## parking space turn table

|                            |                                                                                                                                                                                                                                                                                       |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingSpaceTurnTable                                                                                                                                                                                                                                                                 | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                       | Data concept type    | value domain       |
| Definition and description | Turn table for a parking space.                                                                                                                                                                                                                                                       |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="ParkingSpaceTurnTable"&gt;   &lt;xs:element name="TurnTableLocation" type="Location" /&gt;   &lt;xs:element name="TurnTableDiameter" type="Length" /&gt;   &lt;xs:element name="TurnTableTurnAngle" type="Degree" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                       | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                       |                      |                    |

## parking system status

|                            |                                   |                      |              |
|----------------------------|-----------------------------------|----------------------|--------------|
| Data concept name          | ParkingSystemStatus               | Data status category | static       |
|                            |                                   | Data concept type    | data element |
| Definition and description | Status of an Auto Parking System. |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                  |                 |                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="ParkingSystemStatus"&gt;   &lt;xs:element name="systemOnOff" type="xs:boolean" /&gt;   &lt;xs:element name="operatingStatusCode" type="TwoBitCode" /&gt;   &lt;xs:element name="operator" type="TwoBitCode" /&gt;   &lt;xs:element name="operatorPosition" type="TwoBitCode" /&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                  | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                  |                 |                    |

## parking type

|                            |                                                                                                                                                             |                      |                    |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | ParkingType                                                                                                                                                 | Data status category | static             |
|                            |                                                                                                                                                             | Data concept type    | data element       |
| Definition and description | Type of parking, i.e. valet/self-propelled, mechanical.                                                                                                     |                      |                    |
| Data structure             | <pre> &lt;xs:simpleType name="ParkingType"&gt;   &lt;xs:element name="Valet-SelfPropelled-Mechanical" type="TwoBitCode" /&gt; &lt;/xs:simpleType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                             | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                             |                      |                    |

## passageway block characteristics

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewayBlockCharacteristics                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | data frame         |
| Definition and description | <p>Characteristics of Passageway Block in a parking facility.</p> <p>Passageway is expressed by a Passageway network that is constructed in Passageway elements and Passageway crossings.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="PassagewayBlockCharacteristics"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayNetwork" type="PassagewayNetwork" /&gt;     &lt;xs:element name="passagewaySurfaceCommonAttributes" type="PassagewaySurfaceCommonAttribute" /&gt;     &lt;xs:element name="passagewayStructure" type="PassagewayStructure" /&gt;     &lt;xs:element name="passagewayPartialStructure" type="PassagewayPartialStructure" /&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="connectedRoad" type="ConnectedRoad" /&gt;     &lt;/xs:sequence&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  | J                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                    |

## passageway condition

|                            |                                                                                                                                                                                                                                                                                                                           |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewayCondition                                                                                                                                                                                                                                                                                                       | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                           | Data concept type    | data frame         |
| Definition and description | Dynamic information on a passageway of a parking facility.                                                                                                                                                                                                                                                                |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="PassagewayCondition"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewaySurfaceCondition" type="PassagewaySurfaceCondition" /&gt;     &lt;xs:element name="passagewayDisrepairStatus" type="PassagewayDisrepairStatus" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                           | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                           |                      |                    |

## passageway crossing

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewayCrossing                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data frame         |
| Definition and description | It provides a crossing of a passageway.<br>Both ends of Passageway Elements are connected to Passageway Crossings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="PassagewayCrossing"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayCrossingID" type="PassagewayCrossingID" /&gt;     &lt;xs:sequence&gt;       &lt;xs:element name="passagewayElementID" type="PassagewayElementID" /&gt;     &lt;/xs:sequence&gt;     &lt;xs:element name="passagewayCrossingType" type="TwoBitCode" /&gt;     &lt;xs:element name="passagewayCrossingLocation" type="Location" /&gt;     &lt;xs:element name="passagewayCrossingShape" type="PassagewayCrossingShape" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                      |                    |

## passageway disrepair status

|                            |                                                       |                      |            |
|----------------------------|-------------------------------------------------------|----------------------|------------|
| Data concept name          | PassagewayDisrepairStatus                             | Data status category | dynamic    |
|                            |                                                       | Data concept type    | data frame |
| Definition and description | It provides disrepair status of a passageway surface. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre> &lt;xs:complexType name="PassagewayDisrepairStatus"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayElementID" type="PassagewayElementID" /&gt;     &lt;xs:element name="disrepairType" type="DisrepairCode" /&gt;     &lt;xs:element name="location" type="Location" /&gt;     &lt;xs:element name="lengthFromReferencePosition" type="Length" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                    |

## passageway element

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewayElement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data concept type    | data frame         |
| Definition and description | It provides both ends of a passageway element connected to passageway crossings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                    |
| Data structure             | <pre> &lt;xs:complexType name="PassagewayElement"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayElementID" type="PassagewayElementID" /&gt;     &lt;xs:element name="startPassagewayCrossingID" type="PassagewayCrossingID" /&gt;     &lt;xs:element name="endPassagewayCrossingID" type="PassagewayCrossingID" /&gt;     &lt;xs:element name="passagewayElementType" type="TwoBitCode" /&gt;     &lt;xs:element name="directionOfTraffic" type="Direction" /&gt;     &lt;xs:element name="numberOfLane" type="xs:unsignedByte" /&gt;     &lt;xs:element name="length" type="Length" /&gt;     &lt;xs:element name="slope" type="Slope" /&gt;     &lt;xs:element name="passagewayShape" type="PassagewayShape" /&gt;     &lt;xs:element name="parkingGate" type="ParkingGate" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                    |

## passageway network

|                            |                                                                                    |                      |            |
|----------------------------|------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | PassagewayNetwork                                                                  | Data status category | static     |
|                            |                                                                                    | Data concept type    | data frame |
| Definition and description | Passageway Network is constructed in Passageway Elements and Passageway Crossings. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                      |                 |                    |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|--------------------|
| Data structure | <pre>&lt;xs:complexType name="PassagewayNetwork"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayElement" type="PassagewayElement" /&gt;   &lt;/xs:sequence&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayCrossing" type="PassagewayCrossing" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                    |
| Issued by      |                                                                                                                                                                                                                                                                                                                                      | source document | ISO 16787:2016 APS |
| Remarks        |                                                                                                                                                                                                                                                                                                                                      |                 |                    |

## passageway partial structure

|                            |                                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewayPartialStructure                                                                                                                                                                                                                                                                                                                                                        | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                   | Data concept type    | data frame         |
| Definition and description | It provides a partial structure of a passageway in a parking facility.                                                                                                                                                                                                                                                                                                            |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="PassagewayPartialStructure"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewayElementID" type="32BitID" /&gt;     &lt;xs:element name="passagewayPartialStructureType" type="TwoDigitCode" /&gt;     &lt;xs:element name="passagewayPartialStructureLocation" type="Location" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |

## passageway surface common attribute

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewaySurfaceCommonAttributes                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data status category | static             |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data concept type    | data frame         |
| Definition and description | It provides common attributes of a passageway surface.                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="PassagewaySurfaceCommonAttributes"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewaySurfaceType" type="PassagewaySurfaceType" /&gt;     &lt;xs:element name="passagewaySurfaceMaterial" type="RwunwaySurfaceMaterial" /&gt;     &lt;xs:element name="passagewaySurfaceRoughness" type="PassagewaySurfaceRoughness" /&gt;     &lt;xs:element name="passagewaySurfaceColor" type="RwunwaySurfaceColor" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                    |

## passageway surface condition

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PassagewaySurfaceCondition                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | data frame         |
| Definition and description | It provides dynamic conditions of a passageway surface.                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="PassagewaySafaceConditon"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="passagewaySurfaceConditionAttribute" type="EightBitAssignedCode" /&gt;     &lt;xs:element name="temperature" type="Temperature" /&gt;     &lt;xs:element name="humidity" type="Humidity" /&gt;     &lt;xs:element name="atmosheric pressure" type="AtmoshericPressure" /&gt;     &lt;xs:element name="weaather" type="Weather" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                    |

## path history

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PathHistory                                                          | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | data frame                    |
| Definition and description | History of position and running status of a vehicle.                 |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="PathHistory" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## payload data

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PayloadData                                                          | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | value domain                  |
| Definition and description | Payload of the objects (versatile data).                             |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="PayloadData" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## place

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Place                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | data element   |
| Definition and description | Place provides the information of named areas which can be used for Address Location.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="Place"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="placeId" type="ID32bit"/&gt;     &lt;xs:element name="nameOfPlace" type="xs:string" /&gt;     &lt;xs:element name="countryCode" type="FourDigitCode" numminOccurs="0"/&gt;     &lt;xs:element name="orderAreaCode" type="xs:string" numminOccurs="0"/&gt;     &lt;xs:element name="residenceName" type="xs:string" numminOccurs="0"/&gt;     &lt;xs:element name="residenceNumber" type="xs:string" numminOccurs="0"/&gt;     &lt;xs:element name="placeReferencePoint" type="PlaceReferencePoint" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |

## place reference point

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | PlaceReferencePoint                                                                                                                                                                                                                                                                                                                                                                                                                      | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data concept type    | data element   |
| Definition and description | Place Reference Point provides a representative point within a Place.<br>Place Reference Point contains the map object information regarding the Place.                                                                                                                                                                                                                                                                                  |                      |                |
| Data structure             | <pre>&lt;complexType name="PlaceReferencePoint"&gt;   &lt;xs:element name="placeId" type="ID32bit"/&gt;   &lt;xs:element name="placeReferencePoint" type="PointLocation"/&gt;   &lt;xs:element name="roadElementId" type="ID32bit" numminOccurs="0"/&gt;   &lt;xs:element name="figureElementId" type="ID32bit" numminOccurs="0"/&gt;   &lt;xs:element name="buildingId" type="ID32bit" numminOccurs="0"/&gt; &lt;/complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                          | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                          |                      |                |

## point along line location reference

|                   |                                 |                      |            |
|-------------------|---------------------------------|----------------------|------------|
| Data concept name | PointAlongLineLocationReference | Data status category | static     |
|                   |                                 | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Definition and description | Point along line location is bounded by two nodes. This point location is dependent on the road network. The point may be on the right side of the line, on the left side of the line, on both sides of the line, or directly on the line. Additionally, the point may have an orientation to indicate in which direction of the line the information referenced at that point is useful. Real world examples of this point location type are points of interests closely or directly related to the road network, i.e. petrol stations, shopping malls and restaurants, and also house numbers and address points. But it can also be used to reference speed cams or induction loops. |                 |                      |
| Data structure             | <pre>&lt;xs:complexType name="PointAlongLineLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="pointAlongLine" type="PointLocationLineReferenceData"/&gt;     &lt;xs:element name="shape" type="Shape" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre>                                                                                                                                                                                                                                                                                                                                                                                       |                 |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                      |

## point location

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | PointLocation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | value domain   |
| Definition and description | Point Location is expressed by the coordinates ITRF94(WGS84).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="PointLocation"&gt;   &lt;xs:element name="latitude" Type="Latitude" /&gt;   &lt;xs:element name="longitude" Type="Longitude" /&gt;   &lt;xs:element name="altitude" Type="Altitude" /&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       International Terrestrial Reference System (ITRF 94) is the global standard. &gt;       World Geodetic System (WGS 84) that is used for GPS is defined by United States Department of Defense     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |

## point location line reference data

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                |                      |            |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | PointLocationLineReferenceData                                                                                                                                                                                                                                                                                                                                                                                 | Data status category | static     |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | data frame |
| Definition and description | PointLocationLineReferenceData combines common properties of point location types with network connectivity. It provides information about the location reference path described by the first LRP and the last LRP, the actual point location along that path as defined by the positive offset value and orientation and side of road information of that point location with respect to the referenced path. |                      |            |



|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Data structure | <pre> &lt;xs:complexType name="PointLocationLineReferenceData"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="first" type="FirstLocationReferencePoint"/&gt;     &lt;xs:element name="last" type="LastLocationReferencePoint"/&gt;     &lt;xs:element name="sideOfRoad" type="olr004_SideOfRoad"/&gt;     &lt;xs:element name="orientation" type="olr003_Orientation"/&gt;     &lt;xs:element name="positiveOffset" type="tdt:DistanceMetresMax15000" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                      |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document | ISO/TS 21219-22:2017 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                      |

## POI with access point location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                      |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | POIWithAccessPointLocationReference                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data status category | static               |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data concept type    | data frame           |
| Definition and description | <p>Another point location type combines a point along line with a geo-coordinate. The point along line functions as an access point from the road network to some POI represented by the geo-coordinate part. The access point may be on the right side of the line, on the left side of the line, on both sides of the line, or directly on the line. Additionally, the point may have an orientation to indicate in which direction of the line the information referenced at that point is useful.</p> |                      |                      |
| Data structure             | <pre> &lt;xs:complexType name="POIWithAccessPointLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="lineWithAccessPoint" type="PointLocationLineReferenceData"/&gt;     &lt;xs:element name="poiLocation" type="RelativeGeoCoordinate"/&gt;     &lt;xs:element name="shape" type="Shape" minOccurs="0"/&gt;     &lt;xs:element name="pathToPoi" type="Path" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre>                                                   |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                      |                      |

## polygon location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |            |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | PolygonLocationReference                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Data status category | static     |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | data frame |
| Definition and description | <p>A polygon location is a non-intersecting shape defined by a sequence of geo-coordinate pairs. The coordinate pairs may be everywhere on the surface. They shall define the corners of the underlying geometrical polygon. The boundary of this polygon shall be constituted by straight lines between every pair of consecutive corners in the sequence, plus the straight line between the last and the first corner. The order of the geo-coordinate pairs may be clockwise or counter-clockwise.</p> |                      |            |



|                |                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                      |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Data structure | <pre>&lt;xs:complexType name="PolygonLocationReference"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="startCoordinate" type="AbsoluteGeoCoordinate"/&gt;     &lt;xs:element name="coordinatePath" type="RelativeGeoCoordinate" minOccurs="2" maxOccurs="unbounded"/&gt;     &lt;xs:element name="isFuzzyArea" type="tdt:Boolean"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                      |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                 | source document | ISO/TS 21219-22:2017 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                      |

## position attribute

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionAttribute                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | aggregate domain              |
| Definition and description | Attributes regarding a position and distance.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionAttribute" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="positionObject" type="PositionObject" minOccurs="0" /&gt;     &lt;xs:element name="distanceUnit" type="DistanceUnit" minOccurs="0" /&gt;     &lt;xs:element name="distanceSource" type="DistanceSource" minOccurs="0" /&gt;     &lt;xs:element name="distanceMileStone" type="DistanceMileStone" minOccurs="0" /&gt;     &lt;xs:element name="runningRoadIdentification" type="RunningRoadIdentification" minOccurs="0" /&gt;     &lt;xs:element name="positionInLane" type="PositionInLane" minOccurs="0" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |

## position code attribute

|                            |                                                                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionCodeAttribute                                                                                            | Data status category | dynamic                       |
|                            |                                                                                                                  | Data concept type    | data frame                    |
| Definition and description | It is an attribute for Code Location Reference. It contains the position difference from the reference position. |                      |                               |
| Data structure             | <pre>&lt;xs:simpletype name="PositionCodeAttributes" type="EXTERNAL"/&gt;</pre>                                  |                      |                               |
| Issued by                  | JARI                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                  |                      |                               |

position code method

|                            |                                                                                                                                                             |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionCodeMethod                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                             | Data concept type    | data element                  |
| Definition and description | It provides a position code for Code Location Reference.                                                                                                    |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="PositonCodeMethod" &gt;   &lt;xs:element name="codeOfCodeLocationReference" type="xs:string"/&gt; &lt;/xs:simpleType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                             |                      |                               |

position code reference

|                            |                                                                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionCodeReference                                                                                                                                                                                                                                                                                 | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                       | Data concept type    | data frame                    |
| Definition and description | Position by Code Location Reference.                                                                                                                                                                                                                                                                  |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionCodeReference" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="positionCodeMethod" type="PositionCodeMethod"/&gt;     &lt;xs:element name="positionCodeAttributes" type="PositionCodeAttributes" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                       |                      |                               |

position confidence

|                            |                                                                                                            |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionConfidence                                                                                         | Data status category | dynamic                       |
|                            |                                                                                                            | Data concept type    | value domain                  |
| Definition and description | PositionConfidence provides the confidence of a position.<br>It is a confidence level of 95 % reliability. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="PositionConfidence" type="Confidence"/&gt;</pre>                              |                      |                               |
| Issued by                  | JARI                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                            |                      |                               |

position confidence ellipse

|                   |                           |                      |              |
|-------------------|---------------------------|----------------------|--------------|
| Data concept name | PositionConfidenceEllipse | Data status category | dynamic      |
|                   |                           | Data concept type    | value domain |

|                            |                                                                                                                                                                                                                                                                                                                                                  |                 |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | Position confidence is expressed by ellipse.                                                                                                                                                                                                                                                                                                     |                 |                               |
| Data structure             | <pre>&lt;xs:complexType name="PosConfidenceEllipse" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="SemiMajorConfidence" type="Confidence"/&gt;     &lt;xs:element name="SemiMajorConfidence" type="Confidence"/&gt;     &lt;xs:element name="SemiMajorOrientation" type="Azimuth"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                             | source document | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                  |                 |                               |

## position confidence set

|                            |                                                                                                                                                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionConfidenceSet                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | aggregate domain              |
| Definition and description | It provides confidence of latitude, longitude and altitude/elevation.                                                                                                                                                                                                                                                                                                          |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionConfidenceSet" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="latitudeConfidence" type="LatitudeConfidence"/&gt;     &lt;xs:element name="longitudeConfidence" type="LongitudeConfidence" /&gt;     &lt;xs:element name="elevationConfidence" type="ElevationConfidence" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                |                      |                               |

## position geographical

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionGeographical                                                                                                                                                                                                                                                                                                                                                                                                    | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | aggregate domain              |
| Definition and description | It provides latitude, longitude and altitude/elevation by GNSS.                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PsitionGeographical" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="latitude" type="Latitude" /&gt;     &lt;xs:element name="longitude" type="Longitude" /&gt;     &lt;xs:element name="elevetion" type="Elevation" minOccurs="0" /&gt;     &lt;xs:element name="goordinateSystem" type="GCoordinateSystem" minOccurs="0" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |

## position GPS correction

|                            |                                                               |                      |                               |
|----------------------------|---------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionGPSCorrection                                         | Data status category | dynamic                       |
|                            |                                                               | Data concept type    | value domain                  |
| Definition and description | It provides GPS correction data.                              |                      |                               |
| Data structure             | <xs:simpleType name="PositionGPSCorrection" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                               |                      |                               |

## position in lane

|                            |                                                                                   |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionInLane                                                                    | Data status category | dynamic                       |
|                            |                                                                                   | Data concept type    | value domain                  |
| Definition and description | It provides the position in the lane: right-leaning/left-leaning/central/unknown. |                      |                               |
| Data structure             | <xs:simpleType name="PositionInLane" type="OneDigitUnsignedInt"/>                 |                      |                               |
| Issued by                  | JARI                                                                              | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                   |                      |                               |

## position in mesh

|                            |                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionInMesh                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                         | Data concept type    | aggregate domain              |
| Definition and description | It provides the normalized position in a map mesh.                                                                                                                                                                      |                      |                               |
| Data structure             | <xs:complexType name="PositionInMesh" ><br><xs:sequence><br><xs:element name="XnormalizedCoordinate" type="xs:int"/><br><xs:element name="YnormalizedCoordinate" type="xs:int"/><br></xs:sequence><br></xs:complexType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                         |                      |                               |

## position link reference

|                   |                       |                      |            |
|-------------------|-----------------------|----------------------|------------|
| Data concept name | PositionLinkReference | Data status category | dynamic    |
|                   |                       | Data concept type    | data frame |

|                            |                                                                                                                                                                                                                                                                      |                 |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | It provides the position on the road by link/node and distance.                                                                                                                                                                                                      |                 |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionLinkReference" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="linkMethod" type="LinkMethod"/&gt;     &lt;xs:element name="linkAttributes" type="LinkAttributes"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                 | source document | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                      |                 |                               |

## position map

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionMap                                                                                                                                                                                                                                                                                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | aggregate domain              |
| Definition and description | It provides coordinates on the map. It contains a map mesh and coordinate differences.                                                                                                                                                                                                                                                                                                                                                                     |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionMap" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="gCoordinateSystem" type="GCoordinateSystem" minOccurs="0" /&gt;     &lt;xs:element name="positionMAPVersion" type="PositionMAPVersion" minOccurs="0" /&gt;     &lt;xs:element name="positionMAPMesh" type="PositionMAPMesh" /&gt;     &lt;xs:element name="positionInMesh" type="PositionInMesh" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                               |

## position map mesh

|                            |                                                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionMapMesh                                                                                                                                                                                                                                                                                                         | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                                                                                         | Data concept type    | aggregate domain              |
| Definition and description | It provides a mesh code of a map.                                                                                                                                                                                                                                                                                       |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionMapMesh" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="firstMesh" type="FourDigitCode"/&gt;     &lt;xs:element name="secondMesh" type="TwoDigitCode"/&gt;     &lt;xs:element name="thirdMesh" type="TwoDigitCode"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                         |                      |                               |

## position map version

|                            |                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionMapVersion                                                             | Data status category | static                        |
|                            |                                                                                | Data concept type    | value domain                  |
| Definition and description | It provides a version of the map.                                              |                      |                               |
| Data structure             | <xs:simpleType name="PositionMapVersion" type="FourDigitCode" minOccurs="0" /> |                      |                               |
| Issued by                  | JARI                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                |                      |                               |

## position object

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionObject                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Data concept type    | aggregate domain              |
| Definition and description | It provides the position of ITS objects which are device, road, event and region.                                                                                                                                                                                                                                                                                                                                                                       |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="PositionObject" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="positionObjectDevice" type="PositionObjectDevice" /&gt;     &lt;xs:element name="positionObjectRoad" type="PositionObjectRoad" /&gt;     &lt;xs:element name="positionObjectEvent" type="PositionObjectEvent" /&gt;     &lt;xs:element name="positionObjectRegion" type="PositionObjectRegion" /&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |

## position object device

|                            |                                                              |                      |                               |
|----------------------------|--------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionObjectDevice                                         | Data status category | static                        |
|                            |                                                              | Data concept type    | value domain                  |
| Definition and description | It provides the position of the ITS device.                  |                      |                               |
| Data structure             | <xs:simpleType name="PositionObjectDevice" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                              |                      |                               |

## position object event

|                            |                                                             |                      |                               |
|----------------------------|-------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionObjectEvent                                         | Data status category | static                        |
|                            |                                                             | Data concept type    | value domain                  |
| Definition and description | It provides the position of an ITS event.                   |                      |                               |
| Data structure             | <xs:simpleType name="PositionObjectEvent" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                             |                      |                               |

## position object region

|                            |                                                              |                      |                               |
|----------------------------|--------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionObjectRegion                                         | Data status category | static                        |
|                            |                                                              | Data concept type    | value domain                  |
| Definition and description | It provides the position of the ITS region.                  |                      |                               |
| Data structure             | <xs:simpleType name="PositionObjectRegion" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                              |                      |                               |

## position object road

|                            |                                                            |                      |                               |
|----------------------------|------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionObjectRoad                                         | Data status category | static                        |
|                            |                                                            | Data concept type    | value domain                  |
| Definition and description | It provides the position of the road.                      |                      |                               |
| Data structure             | <xs:simpleType name="PositionObjectRoad" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                            |                      |                               |

## position type

|                            |                                              |                      |              |
|----------------------------|----------------------------------------------|----------------------|--------------|
| Data concept name          | PositionType                                 | Data status category | static       |
|                            |                                              | Data concept type    | value domain |
| Definition and description | It provides the type of position expression. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:simpleType name="PositionType" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="GPS position"/&gt;         &lt;xs:enumeration value="position on map"/&gt;         &lt;xs:enumeration value="link referenced position"/&gt;         &lt;xs:enumeration value="code referenced position"/&gt;         &lt;xs:enumeration value="reserved"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"&gt;         &lt;xs:minInclusive value="0" /&gt;         &lt;xs:maxInclusive value="4" /&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                 |                               |

## position pillar

|                            |                                                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PositionPillar                                                                                                                                                                                                                                                                 | Data status category | static                        |
|                            |                                                                                                                                                                                                                                                                                | Data concept type    | value domain                  |
| Definition and description | <p>It provides the position of the pillar of the vehicle. Position is indicated by the length from the reference point of the vehicle.</p> <p>Unit value is assigned to a 4 bit code that means 0,01 m/0,05 m/0,1 m/0,2 m.</p>                                                 |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="PositionPillar"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfPosPillar" type="ThreeDigitUnsignedInt"/&gt;     &lt;xs:element name="codeOfUnitValue" type="FourBitCode" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                |                      |                               |

## pressure

|                            |                                                                                                                                                                                            |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Pressure                                                                                                                                                                                   | Data status category | dynamic      |
|                            |                                                                                                                                                                                            | Data concept type    | value domain |
| Definition and description | <p>It provides the pressure value of devices of a vehicle. Pressure is indicated by value and unit.</p> <p>Unit value is assigned to a 4 bit code that means 1 kPa/2 kPa/4 kPa/10 kPa.</p> |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                            |                 |                               |
|----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <code>&lt;xs:complexType name="Pressure" &gt;</code><br><code>  &lt;xs:sequence&gt;</code><br><code>    &lt;xs:element name="valueOfPressure" type="FourDigitUnsignedInt"/&gt;</code><br><code>    &lt;xs:element name="codeOfUnitValue" type="dd:FourBitCode" /&gt;</code><br><code>  &lt;/xs:sequence&gt;</code><br><code>&lt;/xs:complexType&gt;</code> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                       | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                            |                 |                               |

## probe information

|                            |                                                                                                                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ProbeInformation                                                                                                                                                                                                                                                                                                                                      | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | data frame                    |
| Definition and description | It provides probe information such as OBU information and history data of path.                                                                                                                                                                                                                                                                       |                      |                               |
| Data structure             | <code>&lt;xs:complexType name="ProbeInformation" &gt;</code><br><code>  &lt;xs:sequence&gt;</code><br><code>    &lt;xs:element name="oBUinformation" type="oBUinformation" /&gt;</code><br><code>    &lt;xs:element name="pathHistory" type="PathHistory" /&gt;</code><br><code>  &lt;/xs:sequence&gt;</code><br><code>&lt;/xs:complexType&gt;</code> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                       |                      |                               |

## processing status

|                            |                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ProcessingStatus                                                           | Data status category | dynamic                       |
|                            |                                                                            | Data concept type    | data element                  |
| Definition and description | It provides the status of a recovering of hazard.                          |                      |                               |
| Data structure             | <code>&lt;xs:simpleType name="ProcessingStatus" base="string" /&gt;</code> |                      |                               |
| Issued by                  | JARI                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                            |                      |                               |

## priority

|                            |                                                    |                      |              |
|----------------------------|----------------------------------------------------|----------------------|--------------|
| Data concept name          | Priority                                           | Data status category | dynamic      |
|                            |                                                    | Data concept type    | value domain |
| Definition and description | It provides an ITS priority event and information. |                      |              |

|                |                                                     |                 |                               |
|----------------|-----------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="Priority" " type=xs:integer"/> |                 |                               |
| Issued by      | JARI                                                | source document | proposed CITS data dictionary |
| Remarks        |                                                     |                 |                               |

## public vehicle status

|                            |                                                                                                  |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | PublicVehicleStatus                                                                              | Data status category | dynamic                       |
|                            |                                                                                                  | Data concept type    | aggregate domain              |
| Definition and description | It provides the status of the exterior of a public vehicle such as a school bus and a route bus. |                      |                               |
| Data structure             | <xs:simpleType name="PublicVehicleStatus" type="EXTERNAL"/>                                      |                      |                               |
| Issued by                  | JARI                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                  |                      |                               |

## precedent vehicle gap distance

|                            |                                                                                   |                      |                    |
|----------------------------|-----------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | PrecedentVehicle GapDistance                                                      | Data status category | dynamic            |
|                            |                                                                                   | Data concept type    | value domain       |
| Definition and description | It provides a gap distance between the precedent vehicle and the subject vehicle. |                      |                    |
| Data structure             | <xs:simpleType name="PecedentVehicleGapDistance" type="Length" />                 |                      |                    |
| Issued by                  |                                                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                   |                      |                    |

[r]

## rain and snow

|                            |                                                      |                      |                               |
|----------------------------|------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Rain                                                 | Data status category | dynamic                       |
|                            |                                                      | Data concept type    | data element                  |
| Definition and description | It provides the level and quantity of rain and snow. |                      |                               |
| Data structure             | <xs:simpleType name="Rain" type="EXTERNAL"/>         |                      |                               |
| Issued by                  | JARI                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                      |                      |                               |

rate of departure

|                            |                                                                                                 |                      |                     |
|----------------------------|-------------------------------------------------------------------------------------------------|----------------------|---------------------|
| Data name                  | RateOfDeparture                                                                                 | Data status category | dynamic             |
|                            |                                                                                                 | Data concept type    | value domain        |
| Definition and description | Component of subject vehicle's approach velocity at the right angle to the lane boundary [m/s]. |                      |                     |
| Data structure             | <xs:simpleType name="RateOfDeparture" type="EXTERNAL"/>                                         |                      |                     |
| Issued by                  |                                                                                                 | source document      | ISO 11270:2014 LKAS |
| Remarks                    |                                                                                                 |                      |                     |

recommend CACC message

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                    |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | RecommendCACCMessage                                                                                                                                                                                                                                                                                                                                                                                                                       | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data concept type    | message            |
| Definition and description | Recommend/restriction message from road station to CACC vehicle station.                                                                                                                                                                                                                                                                                                                                                                   |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="RecommendCACCMessage" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="recommendRoad" type="Road" /&gt;     &lt;xs:element name="recomendLane" type="Lane" /&gt;     &lt;xs:element name="recommendSection" type="Section" /&gt;     &lt;xs:element name="recommendSpeed" type="Speed" /&gt;     &lt;xs:element name="recommendGap" type="Gap" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                            |                      |                    |

recommend gap

|                            |                                                     |                      |                    |
|----------------------------|-----------------------------------------------------|----------------------|--------------------|
| Data concept name          | RecommendGap                                        | Data status category | dynamic            |
|                            |                                                     | Data concept type    | value domain       |
| Definition and description | Recommend/restriction of gap for CACC vehicle.      |                      |                    |
| Data structure             | <xs:simpleType name="RecommendGap" type="Length" /> |                      |                    |
| Issued by                  |                                                     | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                     |                      |                    |

## recommend lane

|                            |                                                                                                                                                                                                                                          |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | RecommendLane                                                                                                                                                                                                                            | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                          | Data concept type    | aggregate domain   |
| Definition and description | Recommend/restriction lane for CACC vehicle.                                                                                                                                                                                             |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="RecomendLane"&gt;   &lt;xs:choice&gt;     &lt;xs:element name="laneID" type="LaneID" /&gt;     &lt;xs:element name="laneNumber" type="LaneNumber" /&gt;   &lt;/xs:choice&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                          | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                          |                      |                    |

## recommend road

|                            |                                                                      |                      |                    |
|----------------------------|----------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | RecommendRoad                                                        | Data status category | dynamic            |
|                            |                                                                      | Data concept type    | data element       |
| Definition and description | Recommend/restriction road for CACC vehicle.                         |                      |                    |
| Data structure             | <pre>&lt;xs:simpleType name="RecomendRoad" type="RoadID" /&gt;</pre> |                      |                    |
| Issued by                  |                                                                      | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                      |                      |                    |

## recommend section

|                            |                                                                                                                                             |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | RecommendSection                                                                                                                            | Data status category | dynamic            |
|                            |                                                                                                                                             | Data concept type    | data element       |
| Definition and description | Recommend/restriction road section for CACC vehicle.                                                                                        |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="RecomendSection"&gt;   &lt;xs:element name="section" type="SectionOfRoad" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                             | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                             |                      |                    |

## recommend speed

|                   |                |                      |              |
|-------------------|----------------|----------------------|--------------|
| Data concept name | RecommendSpeed | Data status category | dynamic      |
|                   |                | Data concept type    | value domain |

|                            |                                                      |                 |                    |
|----------------------------|------------------------------------------------------|-----------------|--------------------|
| Definition and description | Recommend/restriction speed for CACC vehicle.        |                 |                    |
| Data structure             | <xs:simpleType name="RecommendSpeed" type="Speed" /> |                 |                    |
| Issued by                  |                                                      | source document | ISO 16787:2016 APS |
| Remarks                    |                                                      |                 |                    |

## rectangle

|                            |                                                                                                                                                                                                                                              |                      |                      |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | Rectangle                                                                                                                                                                                                                                    | Data status category | static               |
|                            |                                                                                                                                                                                                                                              | Data concept type    | aggregate domain     |
| Definition and description | Rectangle specifies a rectangle with a lower left and upper right coordinate.                                                                                                                                                                |                      |                      |
| Data structure             | <xs:complexType name="Rectangle"><br><xs:sequence><br><xs:element name="lowerLeftCoordinate" type="AbsoluteGeoCoordinate"/><br><xs:element name="upperRightCoordinate" type="AbsoluteGeoCoordinate"/><br></xs:sequence><br></xs:complexType> |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                              | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                              |                      |                      |

## rectangle location reference

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                      |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------------|
| Data concept name          | RectangleLocationReference                                                                                                                                                                                                                                                                                                                                                                                         | Data status category | static               |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data element         |
| Definition and description | A rectangle location references a rectangular shape. It shall be given by two geo-coordinate pairs which may be everywhere on the surface. The geo-coordinate pairs shall define the lower left (A) and the upper right (B) corner of the rectangular shape. Real-world examples are weather information or any area where the shape is not exactly specified and the location references shall be light-weighted. |                      |                      |
| Data structure             | <xs:complexType name="RectangleLocationReference"><br><xs:sequence><br><xs:element name="rectangle" type="Rectangle"/><br><xs:element name="isFuzzyArea" type="tdt:Boolean"/><br></xs:sequence><br></xs:complexType>                                                                                                                                                                                               |                      |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                    | source document      | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                    |                      |                      |

## relative geo-coordinate

|                   |                       |                      |              |
|-------------------|-----------------------|----------------------|--------------|
| Data concept name | RelativeGeoCoordinate | Data status category | static       |
|                   |                       | Data concept type    | data element |

|                            |                                                                                                                                                                                                                                                                                                                                       |                 |                      |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------------|
| Definition and description | RelativeGeoCoordinate stores geo-coordinates as relative values in deca micro degree precision.<br>longitude: The relative longitude value in deca micro degree precision.<br>latitude: The relative latitude value in deca micro degree precision.<br>altitude: Elevation of location in metres above/below Mean Sea Level.          |                 |                      |
| Data structure             | <pre>&lt;xs:complexType name="RelativeGeoCoordinate"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="longitude" type="tdt:IntSiLi"/&gt;     &lt;xs:element name="latitude" type="tdt:IntSiLi"/&gt;     &lt;xs:element name="altitude" type="tdt:IntSiLoMB" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                      |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                       | source document | ISO/TS 21219-22:2017 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                       |                 |                      |

## restricted status

|                            |                                                                           |                      |                               |
|----------------------------|---------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RestrictedStatus                                                          | Data status category | dynamic                       |
|                            |                                                                           | Data concept type    | data element                  |
| Definition and description | It provides a restriction by the obstacle.                                |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="RestrictedStatus" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                           |                      |                               |

## restriction cause

|                            |                                                   |                      |              |
|----------------------------|---------------------------------------------------|----------------------|--------------|
| Data concept name          | RestrictionCause                                  | Data status category | static       |
|                            |                                                   | Data concept type    | value domain |
| Definition and description | It provides the cause of the traffic restriction. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:simpleType name="RestrictionCause" type="EightBitAssignedCode" /&gt; &lt;xs:annotation&gt;   &lt;xs:documentation&gt;     "RestrictionCause" is as follows; &gt;     bit 0 "ordinary" value=0: not apply / =1: apply&gt;     bit 1 "season" value=0: not apply / =1: apply&gt;     bit 2 "festival/event" value=0: not apply / =1: apply&gt;     bit 3 "locked gate" value=0: not apply / =1: apply&gt;     bit 4 "permitted gate" value=0: not apply / =1: apply&gt;     bit 5 "special" value=0: not apply / =1: apply&gt;     bit 6 "reserved" value=0: not apply / =1: apply&gt;     bit 7 "reserved" value=0: not apply / =1: apply&gt;   &lt;/xs:documentation&gt; &lt;/xs:annotation&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |

## road

|                            |                                                                                                                                                                                                                                                                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Road                                                                                                                                                                                                                                                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                       | Data concept type    | data Frame                    |
| Definition and description | It provides road information for intersections, crosswalks and simple roads.                                                                                                                                                                                                                                          |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="Road"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="Intersection" type="Intersection" /&gt;     &lt;xs:element name="CrosswalkLane" type="CrosswalkLane" /&gt;     &lt;xs:element name="SimpleRoad" type="SimpleRoad" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                       |                      |                               |

## road

|                            |                                                                                                                       |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | Road                                                                                                                  | Data status category | static       |
|                            |                                                                                                                       | Data concept type    | data element |
| Definition and description | <p>Road is a passable area which is called a street/roadway.</p> <p>Each Road is an aggregation of Road Sections.</p> |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="Road"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadNetworkLevel" type="OneDigitSignedInt"/&gt;     &lt;xs:element name="roadId" type="ID32bit"/&gt;     &lt;xs:element name="roadClass" type="RoadClass"/&gt;     &lt;xs:element name="routeNumber" type="RoadNumber" minOccurs="0" /&gt;     &lt;xs:element name="roadName" type="xs:string" minOccurs="0"/&gt;     &lt;xs:element name="roadSectionParallelList"&gt;       &lt;xs:complexType&gt;         &lt;xs:sequence minOccurs="1" maxOccurs="2"&gt;           &lt;xs:element name="numSerialRoadSection" type="FourDigitUnsignedInt" /&gt;           &lt;xs:element name="serialList"&gt;             &lt;xs:complexType&gt;               &lt;xs:sequence maxOccurs="unbounded"&gt;                 &lt;xs:element name="roadSection" type="RoadSection" /&gt;               &lt;/xs:sequence&gt;             &lt;/xs:complexType&gt;           &lt;/xs:element&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                 |                |

## road class

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | RoadClass                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Data concept type    | value domain   |
| Definition and description | Road class is one of the coded classifications of the road such as highway, national road, stats road, city road and town road.                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                |
| Data structure             | <pre> &lt;xs:simpleType name="RoadClass" type="dd:OneDigitUnsignedInt"/&gt; &lt;xs:annotation&gt;   &lt;xs:documentation&gt;     encoded as a 4 bit value&gt;     Road Class indicates the national/regional road class. &gt;     class0 (0) -- the highest road class&gt;     class1 (1) &gt;     class2 (2) &gt;     class3 (3) &gt;     class4 (4) &gt;     class5 (5) &gt;     class6 (6) &gt;     class7 (7) &gt;     class8 (8) &gt;     class9 (9) -- the lowest road class&gt;   &lt;/xs:documentation&gt; &lt;/xs:annotation&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                      |                |



## road element

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadElement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Data status category | static       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | Data element |
| Definition and description | <p>Road Element (alias Link) is connected to two Intersection Connection Points that are in each Intersection in the Road Section.</p> <p>The start and end of Road Element are an Intersection Connection Point at Intersection. Therefore Road Element connects to Intersection logically.</p> <p>Road Element is associated with Road Section.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |              |
| Data structure             | <pre> &lt;xs:complexType name="RoadElement"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadNetworkLevel" type="OneDigitUnsignedInt" /&gt;     &lt;xs:element name="roadSectionId" type="ID32bit" /&gt;     &lt;xs:element name="roadElementId" type="ID32bit"/&gt;     &lt;xs:element name="startIntersectionId" type="ID32bit"/&gt;     &lt;xs:element name="startICPId" type="ID32bit"/&gt;     &lt;xs:element name="endIntersectionId" type="ID32bit"/&gt;     &lt;xs:element name="endICPId" type="ID32bit"/&gt;     &lt;xs:element name="upperLevelExistenceFlag" type="Flag"/&gt;     &lt;xs:element name="upperLevelRoadElementId" type="ID32bit" minOccurs="0"/&gt;     &lt;xs:element name="roadType" type="RoadType"/&gt;     &lt;xs:element name="lengthRoadElement" type="Lenght"/&gt;     &lt;xs:element name="directionTrafficFlow" type="OneDigitUnsignedInt"/&gt;     &lt;xs:element name="roadFunctionalCode" type="OneDigitInt" minOccurs="0"/&gt;     &lt;xs:element name="roadslopeInfor" type="RoadSlope" minOccurs="0"/&gt;     &lt;xs:element name="sidewalkType" type="OneDigitUnsignedInt" minOccurs="0" /&gt;     &lt;xs:element name="roadElementWidth" type="Lenght" minOccurs="0"/&gt;     &lt;xs:element name="roadElementWidth(opposite)" type="Lenght" minOccurs="0"/&gt;     &lt;xs:element name="numTrafficSignals" type="FourDigitUnsignedInt" minOccurs="0"/&gt;   </pre> |                      |              |

|           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           | <pre> &lt;xs:element name="numRoadSignage" type="FourDigitUnsignedInt" minOccurs="0"/&gt; &lt;xs:element name="typicalSpeedLimitsValue" type="SpeedLimits" minOccurs="0"/&gt; &lt;xs:element name="onewayFlag" type="Flag"/&gt; &lt;xs:element name="investigationFlag" type="Flag"/&gt; &lt;xs:element name="laneInfoExistenceFlag" type="Flag"/&gt; &lt;xs:element name="bridgeTunnelExistenceFlag" type="Flag"/&gt; &lt;xs:element name="streetNnameExistenceFlag" type="Flag"/&gt; &lt;xs:element name="streetAddressExistenceFlag" type="Flag"/&gt; &lt;xs:element name="roadNameExistenceFlag" type="Flag"/&gt; &lt;xs:element name="stopSignExistenceFlag(startside)" type="Flag"/&gt; &lt;xs:element name="stopSignExistenceFlag(endside)" type="Flag"/&gt; &lt;xs:element name="passthroughFlag" type="Flag"/&gt; &lt;xs:element name="onTheStreetParkingFlag" type="Flag"/&gt; &lt;xs:element name="plannedRoadFlag" type="Flag"/&gt; &lt;xs:element name="scheduledDateTheOpeningPlannedRoad" type="xs:date" minOccurs="0"/&gt; &lt;xs:element name="roadName" type="xs:string" minOccurs="0"/&gt; &lt;xs:annotation&gt;   &lt;documentation&gt;     value and meaning of "directionTrafficFlow" is as follow&gt;     value = "0" "dual direction"&gt;     value = "1" "from start terminal to end terminal"&gt;     value = "2" "from end terminal to start"&gt;     value and meaning of "sidewalkType" is as follow      value = "0" "no sidewalk"&gt;     value = "1" "with sidewalk"&gt;     value = "2" "with sidewalk and bicycle lane" &gt;     meaning of value="0" or "false" of Flag&gt;     "upperLevelExistenceFlag" = not existence&gt;     "laneInfoExistenceFlag" = not existence&gt;     "bridgeTunnelExistenceFlag" = not existence&gt;     "streetNameExistenceFlag" = not existence&gt;     "streetAddressExistenceFlag" = not existence&gt;     "roadNameExistenceFlag" = not existence&gt;     "stopSignExistenceFlag" = not existence&gt;     "onTheStreetParkingFlag" = not existence&gt;     "onewayFlag" = not one-way&gt;     "investigationFlag" = complete&gt;     "passthroughFlag" = not pass-through&gt;     "plannedRoadFlag" = not planned road&gt;   &lt;/documentation&gt; &lt;/xs:annotation&gt; &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |
| Issued by | source document ISO 14296:2016                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Remarks   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## road element shape

|                   |                  |                      |              |
|-------------------|------------------|----------------------|--------------|
| Data concept name | RoadElementShape | Data status category | static       |
|                   |                  | Data concept type    | Data element |

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Definition and description | Road Element Shape is defined by the polyline in the central line of a Road Element.<br>The beginning point and ending point of Road Element Shape are an Intersection Connection Point (ICP).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |
| Data structure             | <pre> &lt;xs:complexType name="RoadElementShape"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadSectionId" type="ID32bit" /&gt;     &lt;xs:element name="roadId" type="ID32bit" /&gt;     &lt;xs:element name="coordinatesStartICP" type="PointLocation"/&gt;     &lt;xs:element name="coordinatesEndICP" type="PointLocation"/&gt;     &lt;xs:element name="numShapePoint" type="FourDigitUnsignedInt"/&gt;     &lt;xs:element name="linkShapePointList"&gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="offsetLocation" type="OffsetLocation"/&gt;           &lt;xs:element name="roadStructureId" type="ID32bit" minOccurs="0"/&gt;           &lt;xs:element name="advisoryPointId" type="ID32bit" minOccurs="0"/&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |

## road functional code

|                            |                                                                                                                            |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | RoadFunctionalCode                                                                                                         | Data status category | static         |
|                            |                                                                                                                            | Data concept type    | value domain   |
| Definition and description | Road functional code provides the type code of road function.<br>The type codes and the meanings are provided by Metadata. |                      |                |
| Data structure             | <pre> &lt;xs:simpleType name="RoadFunctionalCode" type="OneDigitUnsignedInt"/&gt; </pre>                                   |                      |                |
| Issued by                  |                                                                                                                            | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                            |                      |                |

## road furniture

|                            |                                                                                                                                                                                                                                                                                                                                                                                   |                      |              |
|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadFurniture                                                                                                                                                                                                                                                                                                                                                                     | Data status category | static       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                   | Data concept type    | data element |
| Definition and description | Road furniture provides the shape and location of the road furniture, i.e. curb, gutter, traffic island, central island, road lighting, mirror, traffic barriers, guardrail, speedbump, bump post, pole corn, flower bed, verge, landmark, detection sensor, distance post, crossing bridge, tram track. The road furniture type codes and the meanings are provided by Metadata. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="RoadFurniture"&gt;   &lt;xs:sequence&gt;     &lt;xs:element rname="roadElementId" type="ID32bit" minOccurs="0"/&gt;     &lt;xs:element name="intersectionId" type="ID32bit" minOccurs="0"/&gt;     &lt;xs:element name="roadFurnitureId" type="dd:ID32bit" /&gt;     &lt;xs:element name="roadFurnitureTypeCode" type="FourDigitCode" /&gt;     &lt;xs:element name="furnitureAverageHeight" type="Height" minOccurs="0"/&gt;     &lt;xs:element name="colour" type="TwoDigitCode"/&gt;     &lt;xs:element name="coordinatesRoadFurniture" type="PointLocation"/&gt;     &lt;xs:element name="numOfShape" type="TwoDigitUnsignedInt"/&gt;     &lt;xs:element name="roadFurnitureShapeList"&gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="shapeType" type="OneDigitUnsignedInt" /&gt;           &lt;xs:element name="lineType" type="OneDigitUnsignedInt" minOccurs="0" /&gt;           &lt;xs:element name="shapePointList" type="ShapePointList"/&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |                |

## road irregularity

|                            |                                                                             |                      |                               |
|----------------------------|-----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadIrregularity                                                            | Data status category | dynamic                       |
|                            |                                                                             | Data concept type    | data frame                    |
| Definition and description | It provides information on unevenness and cracks in the road surface.       |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="RoadIrregularity" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                             |                      |                               |

## road marking

|                            |                                                                                                                                                                                                                                                                                                                     |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadMarking                                                                                                                                                                                                                                                                                                         | Data status category | static       |
|                            |                                                                                                                                                                                                                                                                                                                     | Data concept type    | data element |
| Definition and description | <p>Road Marking provides the shape of painted markings on roads such as lane markings. The shoulder lane of roads, lane lines, centre lines, stop lines, pedestrian crossings, and tram traffic belts are assumed.</p> <p>This entity is used for drawing, map matching, giving attention, and driving support.</p> |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="RoadMarking"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadSectionId" type="ID32bit" minOccurs="0" /&gt;     &lt;xs:element name="roadElementId" type="ID32bit" minOccurs="0" /&gt;     &lt;xs:element name="intersectionId" type="ID32bit" minOccurs="0" /&gt;     &lt;xs:element name="roadMarkingId" type="ID32bit" /&gt;     &lt;xs:element name="roadMarkingType" type="RoadMarkingType"/&gt;     &lt;xs:element name="roadMarkingCode" type="FourDigitCode" /&gt;     &lt;xs:element name="paintedColour" type="TwoDigitCode"/&gt;     &lt;xs:element name="coordinatesRoadMarking" type="PointLocation"/&gt; </pre>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                |
|                | <pre> &lt;xs:element name="numShape" type="FourDigitUnsignedInt"/&gt; &lt;xs:element name="roadMarkingShapeList"&gt;   &lt;xs:complexType&gt;     &lt;xs:sequence maxOccurs="unbounded"&gt;       &lt;xs:element name="shapeType" type="dd:OneDigitUnsignedInt"/&gt;       &lt;xs:annotation&gt;         &lt;xs:documentation&gt;           value = "1"; "point"/&gt;           value = "2"; "polyline"/&gt;           value = "3"; "polygon"/&gt;           value = "4"; "symbol"/&gt;         &lt;/xs:documentation&gt;       &lt;/xs:annotation&gt;       &lt;xs:element name="lineType" type="OneDigitUnsignedInt minOccurs="0" /&gt;       &lt;xs:annotation&gt;         &lt;xs:documentation&gt;           value = "0"; "single line" &lt;default&gt;           value = "1"; "double line"           value = "2"; "single dash line"           value = "3"; "double dash line"           value = "4"; "right line left dash line"           value = "5"; "right dash line left line"         &lt;/xs:documentation&gt;       &lt;/xs:annotation&gt;       &lt;xs:element name="shapePointList" type="ShapePointList"/&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; &lt;/xs:element&gt; &lt;/xs:sequence&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |                |

## road marking type

|                            |                                                                                                                          |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadMarkingType                                                                                                          | Data status category | static       |
|                            |                                                                                                                          | Data concept type    | value domain |
| Definition and description | RoadMarkingType provides the type code of the road marking.<br>The type codes and the meanings are provided by Metadata. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |           |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-----------|
| Data structure | <pre> &lt;xs:simpleType name="RoadMarkingType" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string" &gt;         &lt;xs:enumeration value="guide"/&gt;         &lt;xs:enumeration value="attention"/&gt;         &lt;xs:enumeration value="restrict"/&gt;         &lt;xs:enumeration value="order"/&gt;         &lt;xs:enumeration value="others"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |           |
| Issued by      | WG3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | source document | ISO 14296 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                 |           |

## road network connector

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | RoadNetworkConnector                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Data concept type    | data element   |
| Definition and description | Road Network Connector is an object that makes the connection between Road Element and Transfer Zone for other networks.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="RoadNetworkConnector" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadNetworkConnectionId" type="ID32bit"/&gt;     &lt;xs:element name="transferZoneId" type="ID32bit"/&gt;     &lt;xs:element name="referenceLocationRoadNetworkConnection" type="PointLocation"/&gt;     &lt;xs:element name="numRelatedRoadElementPosition" type="OneDigitUnsigned-Int"/&gt;     &lt;xs:element name="relatedRoadElementPositionList" minOccurs="0" &gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="roadElementId" type="ID32bit" /&gt;           &lt;xs:element name="positionOnTheRoad" type="Length"/&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;   &lt;/xs:sequence&gt; &lt;/complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                      |                |

## road number

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | RoadNumber                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Data concept type    | value domain   |
| Definition and description | A road number or route number is often assigned to a stretch of public roadway. The number chosen is often dependent on the type of road, with numbers differentiating between interstates, motorways, arterial thoroughfares, two-lane roads.                                                                                                                                                                                                                         |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="RoadNumber" &gt;   &lt;xs:choice&gt;     &lt;xs:element name="fourDigitNumber" type="FourDigitCode"/&gt;     &lt;xs:element name="sixDigitNumber" type="SixDigitCode"/&gt;   &lt;/xs:choice&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       route number is defined by the road authority       such as "N123", "I91 " and "E999".     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                      |                |

## road section

|                            |                                                                                                                                                                                                                                |                      |            |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | RoadSection                                                                                                                                                                                                                    | Data status category | static     |
|                            |                                                                                                                                                                                                                                | Data concept type    | data frame |
| Definition and description | <p>Road Section is a serial aggregation of Road Elements and Intersections.</p> <p>Each Road Section consists of one or more Road Elements and two or more Intersections, and both ends of Road Section are Intersections.</p> |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="RoadSection"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadNetworkLevel" type="OneDigitUnsignedInt" /&gt;     &lt;xs:element name="roadId" type="ID32bit" /&gt;     &lt;xs:element name="roadSectionId" type="ID32bit" /&gt;     &lt;xs:element name="numIntersection" type="TwoDigitUnsignedInt"/&gt;     &lt;xs:element name="startIntersectionId" type="ID32bit" /&gt;     &lt;xs:element name="end_intersectionId" type="ID32bit" /&gt;     &lt;xs:element name="roadEelementList"&gt;       &lt;xs:complexType&gt;         &lt;xs:sequence maxOccurs="unbounded"&gt;           &lt;xs:element name="roadElement" type="RoadElement" /&gt;         &lt;/xs:sequence&gt;       &lt;/xs:complexType&gt;     &lt;/xs:element&gt;     &lt;xs:element name="tollRoadFlag" type="Flag"/&gt;   &lt;/xs:sequence&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       Road Section is organized by serial Road Elements.     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |                |

## road sign

|                            |                                                                                                                                                                                                                                                                                                                                                      |                      |                               |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSign                                                                                                                                                                                                                                                                                                                                             | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | data frame                    |
| Definition and description | It provides a road sign that contains contents, targets and conditions.                                                                                                                                                                                                                                                                              |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="RoadSign" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadSignContents" type="RoadSignContents" /&gt;     &lt;xs:element name="roadSignObjects" type="RoadSignObjects" /&gt;     &lt;xs:element name="roadSignCondition" type="RoadSignCondition" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                      |                      |                               |

## road sign condition

|                            |                                                        |                      |            |
|----------------------------|--------------------------------------------------------|----------------------|------------|
| Data concept name          | RoadSignCondition                                      | Data status category | dynamic    |
|                            |                                                        | Data concept type    | data frame |
| Definition and description | It provides an application condition of the road sign. |                      |            |



|                |                                                           |                 |                               |
|----------------|-----------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="RoadSignCondition" type="EXTERNAL"/> |                 |                               |
| Issued by      | JARI                                                      | source document | proposed CITS data dictionary |
| Remarks        |                                                           |                 |                               |

## road sign contents

|                            |                                                          |                      |                               |
|----------------------------|----------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSignContents                                         | Data status category | dynamic                       |
|                            |                                                          | Data concept type    | data frame                    |
| Definition and description | It provides an application contents of the road sign.    |                      |                               |
| Data structure             | <xs:simpleType name="RoadSignContents" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                          |                      |                               |

## road sign object

|                            |                                                        |                      |                               |
|----------------------------|--------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSignObject                                         | Data status category | dynamic                       |
|                            |                                                        | Data concept type    | data frame                    |
| Definition and description | It provides an object of a road sign.                  |                      |                               |
| Data structure             | <xs:simpleType name="RoadSignObject" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                        |                      |                               |

## road signage

|                            |                                                                                                                          |                      |              |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadSignage                                                                                                              | Data status category | static       |
|                            |                                                                                                                          | Data concept type    | data element |
| Definition and description | RoadSignages are traffic signs, signboards, guide plates on the road. Road Signage provides the location and attributes. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="RoadSignage"&gt;   &lt;xs:element name="roadSignageId" type="ID32bit"/&gt;   &lt;xs:element name="roadSectionId" type="ID32bit"/&gt;   &lt;xs:element name="roadElementId" type="ID32bit"/&gt;   &lt;xs:element name="directionRoadSignage" type="OneDigitUnsignedInt" /&gt;   &lt;xs:annotation&gt;     &lt;xs:documentation&gt;       value = "1" "forward"&gt;       value = "2" "opposite"&gt;       value = "3" "both"&gt;     &lt;/xs:documentation&gt;   &lt;/xs:annotation&gt; &lt;/xs:element&gt;  &lt;xs:element name="messageType" type="Flag"/&gt; &lt;xs:element name="roadSignageType" type="OneDigitUnsignedInt" /&gt; &lt;xs:annotation&gt;   &lt;xs:documentation&gt;     value = "0" "guide"&gt;     value = "1" "attention"&gt;     value = "2" "restrict"&gt;     value = "3" "order"&gt;     value = "4" "other"/&gt;   &lt;/xs:documentation&gt; &lt;/xs:annotation&gt; &lt;/xs:element&gt; &lt;xs:element name="roadSignageCode" type="FourDigitCode"/&gt; &lt;xs:element name="locationRoadSignage" type="PointLocation"/&gt; &lt;xs:element name="roadSignNumericText" type="FourDigitInt"/&gt; &lt;xs:element name="supplementarySignageFlag" type="Flag"/&gt; &lt;xs:element name="supplementarySignageText" type="xs:string" minOccurs="0"/&gt; &lt;xs:element name="heightSignage" type="xs:unsignedByte" minOccurs="0"/&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                 |                |

## road slope

|                            |                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | RoadSlope                                                                                                                                                                                                                                                                                                                                                                 | Data status category | static           |
|                            |                                                                                                                                                                                                                                                                                                                                                                           | Data concept type    | aggregate domain |
| Definition and description | RoadSlope provides the sum total value of the length and the difference in height of the up-slope, downslope and flat parts of the road. There is no difference in height for the flat parts.                                                                                                                                                                             |                      |                  |
| Data structure             | <pre> &lt;xs:complexType name="RoadSlope"&gt;   &lt;xs:element name="ascentLength" type="Length" /&gt;   &lt;xs:element name="ascentHeight" type="Height" /&gt;   &lt;xs:element name="descentLength" type="Length" /&gt;   &lt;xs:element name="descentHeight" type="Height" /&gt;   &lt;xs:element name="flatLength" type="Length" /&gt; &lt;/xs:complexType&gt; </pre> |                      |                  |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                           | source document      | ISO 14296:2016   |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                           |                      |                  |

## road surface status

|                            |                                                           |                      |                               |
|----------------------------|-----------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSurfaceStatus                                         | Data status category | dynamic                       |
|                            |                                                           | Data concept type    | value domain                  |
| Definition and description | It provides the status of the road surface.               |                      |                               |
| Data structure             | <xs:simpleType name="RoadSurfaceStatus" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                           |                      |                               |

## road temperature

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadTemperature                                                      | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | value domain                  |
| Definition and description | It provides the temperature around the vehicle and the road surface. |                      |                               |
| Data structure             | <xs:simpleType name="RoadTemperature" type="Temperature"/>           |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## road type

|                            |                                                                                      |                      |              |
|----------------------------|--------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | RoadType                                                                             | Data status category | static       |
|                            |                                                                                      | Data concept type    | value domain |
| Definition and description | RoadType provides road type information, i.e. main road, service road and slip road. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:simpleType name="RoadType"&gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="main road (dual carriageway)"/&gt;         &lt;xs:enumeration value="multiple carriageway not motorway"/&gt;         &lt;xs:enumeration value="main road (single carriageway)"/&gt;         &lt;xs:enumeration value="roundabout link"/&gt;         &lt;xs:enumeration value="slip road"/&gt;         &lt;xs:enumeration value="service road"/&gt;         &lt;xs:enumeration value="entrance/exit road to/from car park"/&gt;         &lt;xs:enumeration value="entrance/exit road to/from service"/&gt;         &lt;xs:enumeration value="runaway vehicle ramp"/&gt;         &lt;xs:enumeration value="maneuver carriageway"/&gt;         &lt;xs:enumeration value="indescribable carriageway"/&gt;         &lt;xs:enumeration value="traffic square"/&gt;         &lt;xs:enumeration value="enclosed traffic area"/&gt;         &lt;xs:enumeration value="pedestrian zone"/&gt;         &lt;xs:enumeration value="intersection link"/&gt;         &lt;xs:enumeration value="reserved"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                |

## road work status

|                            |                                                                           |                      |                               |
|----------------------------|---------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadWorkStatus                                                            | Data status category | dynamic                       |
|                            |                                                                           | Data concept type    | data frame                    |
| Definition and description | It provides the status of roadwork.                                       |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="RoadWorkStatus" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                           |                      |                               |

## roadside sensing

|                            |                                                   |                      |            |
|----------------------------|---------------------------------------------------|----------------------|------------|
| Data concept name          | RoadSideSensing                                   | Data status category | dynamic    |
|                            |                                                   | Data concept type    | data frame |
| Definition and description | It provides the applied area of roadside sensing. |                      |            |

|                |                                                         |                 |                               |
|----------------|---------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="RoadSideSensing" type="EXTERNAL"/> |                 |                               |
| Issued by      | JARI                                                    | source document | proposed CITS data dictionary |
| Remarks        |                                                         |                 |                               |

## roadside unit information

|                            |                                                                                                                                                                                                                                                                                                                                                    |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSideUnitInformation                                                                                                                                                                                                                                                                                                                            | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                    | Data concept type    | data frame                    |
| Definition and description | It provides information on roadside units.                                                                                                                                                                                                                                                                                                         |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="RSUInformation" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="RSUInstallation" type="RoadSideUnitInstallation" /&gt;     &lt;xs:element name="RSUMatter" type="RoadSideUnitMatter" /&gt;     &lt;xs:element name="RSSensing" type="RoadSideSensing" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                               | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                    |                      |                               |

## roadside unit installation

|                            |                                                                  |                      |                               |
|----------------------------|------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RoadSideUnitInformation                                          | Data status category | dynamic                       |
|                            |                                                                  | Data concept type    | data frame                    |
| Definition and description | It provides the location of roadside units.                      |                      |                               |
| Data structure             | <xs:simpleType name="RoadSideUnitInstallation" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                  |                      |                               |

## roadside unit matter

|                            |                                            |                      |            |
|----------------------------|--------------------------------------------|----------------------|------------|
| Data concept name          | RoadSideUnitMatter                         | Data status category | dynamic    |
|                            |                                            | Data concept type    | data frame |
| Definition and description | It provides the details of roadside units. |                      |            |

|                |                                                            |                 |                               |
|----------------|------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="RoadSideUnitMatter" type="EXTERNAL"/> |                 |                               |
| Issued by      | JARI                                                       | source document | proposed CITS data dictionary |
| Remarks        |                                                            |                 |                               |

## running road identification

|                            |                                                                   |                      |                               |
|----------------------------|-------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | RunningRoadIdentification                                         | Data status category | dynamic                       |
|                            |                                                                   | Data concept type    | data element                  |
| Definition and description | It provides the identification of a running road.                 |                      |                               |
| Data structure             | <xs:simpleType name="RunningRoadIdentification" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                              | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                   |                      |                               |

[s]

## sending frequency

|                            |                                                          |                      |                               |
|----------------------------|----------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SendingFrequency                                         | Data status category | dynamic                       |
|                            |                                                          | Data concept type    | value domain                  |
| Definition and description | It provides interval time of sending.                    |                      |                               |
| Data structure             | <xs:simpleType name="SendingFrequency" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                     | source document      | proposed CITS data dictionary |
| Remarks                    |                                                          |                      |                               |

## sensing altitude

|                            |                                                                                                                                                                                                                                       |                      |              |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | SensingAltitude                                                                                                                                                                                                                       | Data status category | static       |
|                            |                                                                                                                                                                                                                                       | Data concept type    | data element |
| Definition and description | Altitude of the vehicle observed by the location position sensor, and accuracy of a sensor.<br>Unit of Altitude is "metre". Value is expressed by the short integer.<br>Unit of accuracy is "metre". Value is expressed by the float. |                      |              |

|                |                                                                                                                                                                                                                                                         |                 |                |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre>&lt;xs:complexType name="SensingAltitude"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="altitude" type="xs:short" /&gt;     &lt;xs:element name="confidence" type="Accuracy_metre" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                         | source document | ISO 22837:2009 |
| Remarks        |                                                                                                                                                                                                                                                         |                 |                |

## sensing latitude

|                            |                                                                                                                                                                                                                                                                                                    |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | SensingLatitude                                                                                                                                                                                                                                                                                    | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                    | Data concept type    | value domain   |
| Definition and description | Latitude of the vehicle observed by the location position sensor, and accuracy of a sensor. Unit of Latitude is "degree". Value is expressed by double float but the decimal place is undefined. Unit of Accuracy is "millimetre". Value is expressed by float but the decimal place is undefined. |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="SensingLatitude"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="latitude" type="Degree" /&gt;     &lt;xs:element name="confidence" type="Accuracy_millimetre" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre>                                         |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                    | source document      | ISO 22837:2009 |
| Remarks                    |                                                                                                                                                                                                                                                                                                    |                      |                |

## sensing longitude

|                            |                                                                                                                                                                                                                                                                                                      |                      |                |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | SensingLongitude                                                                                                                                                                                                                                                                                     | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                      | Data concept type    | value domain   |
| Definition and description | Longitude of the vehicle observed by the location position sensor, and accuracy of a sensor. Unit of Longitude is "degree". Value is expressed by double float but the decimal place is undefined. Unit of Accuracy is "millimetre". Value is expressed by float but the decimal place is undefined. |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="SensingLongitude"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="longitude" type="Degree" /&gt;     &lt;xs:element name="confidence" type="Accuracy_millimetre" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre>                                         |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                      | source document      | ISO 22837:2009 |
| Remarks                    |                                                                                                                                                                                                                                                                                                      |                      |                |

## sensing time stamp

|                            |                                                                                                                                                                                                                                        |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | SensingTimeStamp                                                                                                                                                                                                                       | Data status category | static         |
|                            |                                                                                                                                                                                                                                        | Data concept type    | value domain   |
| Definition and description | Sensing timestamp provides the time of the sensing. Value of timestamp is based on 1 January 1970 same as "UNIX epoch time"<br><br>Unit of measure is "second". Value is expressed by double float but the decimal place is undefined. |                      |                |
| Data structure             | <pre>&lt;xs:simpleType name=SensingTimestamp"&gt;   &lt;xs:restriction base="xs:double"&gt;     &lt;xs:minInclusive value="0.0"/&gt;   &lt;/xs:restriction&gt; &lt;/xs:simpleType&gt;</pre>                                            |                      |                |
| Issued by                  |                                                                                                                                                                                                                                        | source document      | ISO 22837:2009 |
| Remarks                    |                                                                                                                                                                                                                                        |                      |                |

## service

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | Service                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Data concept type    | data element   |
| Definition and description | Service is an object for a commercial activity of interest to travellers as a destination and/or orientation that is associated with Road Element(s) or place(s), by which it can be accessed.                                                                                                                                                                                                                                                                                                                                       |                      |                |
| Data structure             | <pre>&lt;complexType name="Service"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="serviceId" type="ID32bit"/&gt;     &lt;xs:element name="serviceCategory" type="FourDigitCode"/&gt;     &lt;xs:element name="nameOfService" type="xs:string" /&gt;     &lt;xs:element name="addressOfService" type="xs:string" /&gt;     &lt;xs:element name="phoneNumberOfService" type="xs:string" /&gt;     &lt;xs:element name="serviceReferencePoint" type="ServiceReferencePoint"/&gt;   &lt;/xs:sequence&gt; &lt;/complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                      |                |

## service reference point

|                            |                                                                                                                |                      |              |
|----------------------------|----------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | ServiceReferencePoint                                                                                          | Data status category | static       |
|                            |                                                                                                                | Data concept type    | data element |
| Definition and description | Service Reference Point provides a representative point of a Service and POI and relationship to the map data. |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                                                      |                 |                |
|----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre>&lt;complexType name="ServiceReferencePoint" &gt;   &lt;xs:element name="serviceId" type="ID32bit" /&gt;   &lt;xs:element name="serviceRefelencePointLocation" type="PointLocation" /&gt;   &lt;xs:element name="roadElementId" type="ID32bit" numminOccurs="0"/&gt;   &lt;xs:element name="figureElementId" type="ID32bit" numminOccurs="0"/&gt; &lt;/xs:complexType&gt;</pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                      | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                      |                 |                |

## service information

|                            |                                                                                      |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ServiceInformation                                                                   | Data status category | dynamic                       |
|                            |                                                                                      | Data concept type    | data frame                    |
| Definition and description | It provides management information for the services. It contains a tag for profiles. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="ServiceInformation" type="EXTERNAL"/&gt;</pre>          |                      |                               |
| Issued by                  | JARI                                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                      |                      |                               |

## shape point list

|                            |                                                                                                                                                                                                                         |                      |                  |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------------|
| Data concept name          | ShapePointList                                                                                                                                                                                                          | Data status category | static           |
|                            |                                                                                                                                                                                                                         | Data concept type    | aggregate domain |
| Definition and description | Shape Point List provides the shape points for the figure such as the polyline and polygon.                                                                                                                             |                      |                  |
| Data structure             | <pre>&lt;xs:complexType name="ShapePointList"&gt;   &lt;xs:sequence maxOccurs="unbounded"&gt;     &lt;xs:element name="offsetLocation" type="OffsetLocation" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                  |
| Issued by                  |                                                                                                                                                                                                                         | source document      | ISO 14296:2016   |
| Remarks                    |                                                                                                                                                                                                                         |                      |                  |

## signal

|                            |                                                                                                |                      |            |
|----------------------------|------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | Signal                                                                                         | Data status category | dynamic    |
|                            |                                                                                                | Data concept type    | data frame |
| Definition and description | It provides traffic signal information such as direction, status of signal light and priority. |                      |            |

|                |                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                               |
|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre>&lt;xs:complexType name="Signal" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="signalDevice" type="SignalDevice" /&gt;     &lt;xs:element name="signalDirection" type="SignalDirection" /&gt;     &lt;xs:element name="signalLightStatus" type="SignalLightStatus" /&gt;     &lt;xs:element name="signalPriority" type="SignalPriority" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                          | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                               |                 |                               |

## signal device

|                            |                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SignalDevice                                                          | Data status category | dynamic                       |
|                            |                                                                       | Data concept type    | data frame                    |
| Definition and description | It provides detailed information on the signal light.                 |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="SignalDevice" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                       |                      |                               |

## signal direction

|                            |                                                                      |                      |                               |
|----------------------------|----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SignalDirection                                                      | Data status category | dynamic                       |
|                            |                                                                      | Data concept type    | data frame                    |
| Definition and description | It provides the traffic direction of the traffic signal.             |                      |                               |
| Data structure             | <pre>xs:simpleType name="SignalDirection" type="EXTERNAL"/&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                 | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                      |                      |                               |

## signal light status

|                            |                                                                                                           |                      |            |
|----------------------------|-----------------------------------------------------------------------------------------------------------|----------------------|------------|
| Data concept name          | SignalLightStatus                                                                                         | Data status category | dynamic    |
|                            |                                                                                                           | Data concept type    | data frame |
| Definition and description | It provides the status of the traffic signal. It contains interval time and remaining time of the signal. |                      |            |

|                |                                                           |                 |                               |
|----------------|-----------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <xs:simpleType name="SignalLightStatus" type="EXTERNAL"/> |                 |                               |
| Issued by      | JARI                                                      | source document | proposed CITS data dictionary |
| Remarks        |                                                           |                 |                               |

## signal priority

|                            |                                                        |                      |                               |
|----------------------------|--------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SignalPriority                                         | Data status category | dynamic                       |
|                            |                                                        | Data concept type    | data frame                    |
| Definition and description | It provides priority status of the traffic signal.     |                      |                               |
| Data structure             | <xs:simpleType name="SignalPriority" type="EXTERNAL"/> |                      |                               |
| Issued by                  | JARI                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                        |                      |                               |

## simple road

|                            |                                                               |                      |                               |
|----------------------------|---------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SimpleRoad                                                    | Data status category | dynamic                       |
|                            |                                                               | Data concept type    | data frame                    |
| Definition and description | It provides information on the road but not the intersection. |                      |                               |
| Data structure             | <xs:simpleType name="SimpleRoad" type="EXTERNAL"/>            |                      |                               |
| Issued by                  | JARI                                                          | source document      | proposed CITS data dictionary |
| Remarks                    |                                                               |                      |                               |

## simple system status

|                            |                                                                       |                      |              |
|----------------------------|-----------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | SimpleSystemStatus                                                    | Data status category | dynamic      |
|                            |                                                                       | Data concept type    | data element |
| Definition and description | It provides the general status of the optional system of the vehicle. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                               |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:simpleType name="SimpleSystemStatus" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="unavailable"/&gt;         &lt;xs:enumeration value="disabled"/&gt;         &lt;xs:enumeration value="enabled"/&gt;         &lt;xs:enumeration value="engaged"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                 |                               |

## siren in use

|                            |                                                                       |                      |                               |
|----------------------------|-----------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SirenInUse                                                            | Data status category | dynamic                       |
|                            |                                                                       | Data concept type    | value domain                  |
| Definition and description | It provides a use state of the siren of the emergency vehicle.        |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="SirenInUse" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                       |                      |                               |

## special route

|                            |                                                                 |                      |              |
|----------------------------|-----------------------------------------------------------------|----------------------|--------------|
| Data concept name          | SpecialRoute                                                    | Data status category | static       |
|                            |                                                                 | Data concept type    | data element |
| Definition and description | Special Route is a pre-defined route between two intersections. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;complexType name="SpecialRoute"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="specialRouteId" type="ID32bit"/&gt;     &lt;xs:element name="intersectionTerminal1" type="ID32bit"/&gt;     &lt;xs:element name="intersectionTerminal2" type="ID32bit"/&gt;     &lt;xs:element name="specialRouteType" type="SpecialRouteType"/&gt;     &lt;xs:element name="directionSpecialRoute" type="FlagV" minOccurs="0"/&gt;     &lt;xs:element name="tollCharge" type="EightDigitUnsignedInt" minOccurs="0"/&gt;     &lt;xs:element name="currency" type="ThreeDigitCode" /&gt;     &lt;xs:element name="lengthSpecialRoute" type="Length" minOccurs="0"/&gt;     &lt;xs:element name="averageTravelTimeSpecialRoute" type="xs:time" minOccurs="0"/&gt;     &lt;xs:choice&gt;       &lt;xs:element name="specialRoadElementList"&gt;         &lt;complexType&gt;           &lt;xs:sequence maxOccurs="unbounded"&gt;             &lt;xs:element name="roadElementId" type="ID32bit"/&gt;           &lt;/xs:sequence&gt;         &lt;/complexType&gt;       &lt;/xs:element&gt;       &lt;xs:element name="specialIntersectionList"&gt;         &lt;complexType&gt;           &lt;xs:sequence maxOccurs="unbounded"&gt;             &lt;xs:element name="intersectionId" type="ID32bit" /&gt;           &lt;/xs:sequence&gt;         &lt;/complexType&gt;       &lt;/xs:element&gt;     &lt;/xs:choice&gt;   &lt;/xs:sequence&gt; &lt;/complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |

## special route type

|                            |                                                                                                    |                      |              |
|----------------------------|----------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | SpecialRouteType                                                                                   | Data status category | static       |
|                            |                                                                                                    | Data concept type    | value domain |
| Definition and description | Type of special route, e.g. highway, scenic route, sightseeing route, evacuation route and detour. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:simpleType name="dd:SpecialRouteType" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="OneDigitUnsignedInt"/&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:string" &gt;         &lt;xs:enumeration value="Highway route"/&gt;         &lt;xs:enumeration value="Scenic route"&gt;         &lt;xs:enumeration value="Sightseeing route"&gt;         &lt;xs:enumeration value="Evacuation route"&gt;         &lt;xs:enumeration value="Detour route"&gt;         &lt;xs:enumeration value="others"&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                 |                |

## special transport

|                            |                                                                             |                      |                               |
|----------------------------|-----------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SpecialTransport                                                            | Data status category | dynamic                       |
|                            |                                                                             | Data concept type    | data frame                    |
| Definition and description | It provides information about special transportation.                       |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="SpecialTransport" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                        | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                             |                      |                               |

## speed

|                            |                                                                                                                                                                                                                                                                                |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Speed                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                | Data concept type    | value domain                  |
| Definition and description | <p>It provides vehicle speed. Speed is indicated by value and unit.</p> <p>Unit value is assigned to a 4 bit code that means 0,01 km/h, 0,02 km/h, 1 km/h.</p>                                                                                                                 |                      |                               |
| Data structure             | <pre> &lt;xs:complexType name="Speed" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfSpeed" type="FourDigitUnsignedInt"/&gt;     &lt;xs:element name="unitcodeOfSpeed" type="FourBitCode" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                           | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                |                      |                               |

## speed

|                            |                                                                                                                                                                                                                                                                              |                      |                    |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | Speed                                                                                                                                                                                                                                                                        | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                                              | Data concept type    | value domain       |
| Definition and description | Vehicle moving speed.                                                                                                                                                                                                                                                        |                      |                    |
| Data structure             | <pre>&lt;xs:complexType name="Speed" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="valueOfSpeed" type="FourDigitUnsignedInt"/&gt;     &lt;xs:element name="unitCodeOfSpeed" type="FourBitCode" minOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                                              | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                                              |                      |                    |

## speed limits

|                            |                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | SpeedLimits                                                                                                                                                                                                                                                                                                                                                                           | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                                       | Data concept type    | value domain   |
| Definition and description | The maximum (or minimum in some cases) speed and applied type of vehicle.                                                                                                                                                                                                                                                                                                             |                      |                |
| Data structure             | <pre>&lt;xs:complexType name="SpeedLimits"&gt;   &lt;xs:element name="appliedVehicleType" type="VehicleTypeCode-BA" minOccurs="0" /&gt;   &lt;xs:element name="speedValue" type="ThreeDigitUnsignedInt" &gt;     &lt;xs:maxInclusive value="499"/&gt;   &lt;/xs:element&gt;   &lt;xs:element name="unitOfSpeed" type="UnitOfMeasure" minOccurs="0"/&gt; &lt;/xs:complexType&gt;</pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                                       | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                       |                      |                |

## speed confidence

|                            |                                                                                                                                  |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SpeedConfidence                                                                                                                  | Data status category | dynamic                       |
|                            |                                                                                                                                  | Data concept type    | value domain                  |
| Definition and description | <p>SpeedConfidence provides the confidence of the speed of the vehicle.</p> <p>It is a confidence level of 95 % reliability.</p> |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="SpeedConfidence" type="Confidence"/&gt;</pre>                                                       |                      |                               |
| Issued by                  | JARI                                                                                                                             | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                  |                      |                               |

## station characteristics

|                            |                                                                                                                                                                                                                                                 |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | StationCharacteristics                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                 | Data concept type    | data frame                    |
| Definition and description | It provides the characteristics of the ITS station. It contains station type, vehicle status.                                                                                                                                                   |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="StationCharacteristics" &gt;   &lt;xs:element name="mainCharacteristics" type="MainCharacteristics"/&gt;   &lt;xs:element name="subCharacteristics" type="SubCharacteristics" /&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                 |                      |                               |

## station ID

|                            |                                                                                            |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | StationID                                                                                  | Data status category | dynamic                       |
|                            |                                                                                            | Data concept type    | aggregate domain              |
| Definition and description | It contains the characteristics of the ITS station, i.e. ID, station type, vehicle status. |                      |                               |
| Data structure             | <pre>&lt;xs:simpleType name="StationID" type="32BitID"/&gt;</pre>                          |                      |                               |
| Issued by                  | JARI                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                            |                      |                               |

## station type

|                            |                                      |                      |              |
|----------------------------|--------------------------------------|----------------------|--------------|
| Data concept name          | StationType                          | Data status category | dynamic      |
|                            |                                      | Data concept type    | value domain |
| Definition and description | It provides the type of ITS station. |                      |              |



|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                               |
|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Data structure | <pre> &lt;xs:simpleType name="StationType" &gt;   &lt;xs:union&gt;     &lt;xs:simpleType &gt;       &lt;xs:restriction base="xs:string"&gt;         &lt;xs:enumeration value="vehicle (general)"/&gt;         &lt;xs:enumeration value="vehicle (emergency)"/&gt;         &lt;xs:enumeration value="vehicle (public)"/&gt;         &lt;xs:enumeration value="roadside"/&gt;         &lt;xs:enumeration value="center"/&gt;         &lt;xs:enumeration value="nomadic"/&gt;       &lt;/xs:restriction&gt;     &lt;/xs:simpleType&gt;     &lt;xs:simpleType&gt;       &lt;xs:restriction base="xs:unsignedByte"/&gt;     &lt;/xs:simpleType&gt;   &lt;/xs:union&gt; &lt;/xs:simpleType&gt; </pre> |                 |                               |
| Issued by      | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | source document | proposed CITS data dictionary |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                 |                               |

## status confidence

|                            |                                                                                           |                      |                               |
|----------------------------|-------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | StatusConfidence                                                                          | Data status category | dynamic                       |
|                            |                                                                                           | Data concept type    | value domain                  |
| Definition and description | StatusConfidence indicates the percentage ratio of confidence. Value 127 means "unknown". |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="StatusConfidence" type="xs:unsignedByte"/&gt; </pre>        |                      |                               |
| Issued by                  | JARI                                                                                      | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                           |                      |                               |

## steering axle lube pressure

|                            |                                                                                                                            |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SteeringAxleLubePressure                                                                                                   | Data status category | dynamic                       |
|                            |                                                                                                                            | Data concept type    | value domain                  |
| Definition and description | <p>It provides the pressure of the lube of the steering axle.</p> <p>Conformity SAE J1939.</p> <p>Unit value is 4 kPa.</p> |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="SteeringAxleLubePressure" type="xs:unsignedByte"/&gt; </pre>                                 |                      |                               |
| Issued by                  | JARI                                                                                                                       | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                            |                      |                               |

## steering axle temperature

|                            |                                                                                                                                                                                                        |                      |                               |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SteeringAxleTemperature                                                                                                                                                                                | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                        | Data concept type    | value domain                  |
| Definition and description | It provides the temperature of the steering axle.<br>Conformity SAE J1939.<br>Unit value is 1 °C and temperature value is the integer. If steering axle temperature is –40 °C, value is taken as zero. |                      |                               |
| Data structure             | <xs:simpleType name="SteeringAxleTemperature" type="Temperature"/>                                                                                                                                     |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                        |                      |                               |

## steering wheel angle

|                            |                                                                     |                      |                               |
|----------------------------|---------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SteeringWheelAngle                                                  | Data status category | dynamic                       |
|                            |                                                                     | Data concept type    | value domain                  |
| Definition and description | It provides the angle of the steering wheel.<br>Unit value is 1,5°. |                      |                               |
| Data structure             | <xs:simpleType name="SteeringWheelAngle" type="xs:short"/>          |                      |                               |
| Issued by                  | JARI                                                                | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                     |                      |                               |

## steering wheel angle confidence

|                            |                                                                                                                 |                      |                               |
|----------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SteeringWheelAngleConfidence                                                                                    | Data status category | dynamic                       |
|                            |                                                                                                                 | Data concept type    | value domain                  |
| Definition and description | It provides the confidence of the angle of the steering wheel.<br>It is a confidence level of 95 % reliability. |                      |                               |
| Data structure             | <xs:simpleType name="SteeringWheelAngleConfidence" type="Confidence"/>                                          |                      |                               |
| Issued by                  | JARI                                                                                                            | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                 |                      |                               |

## steering wheel angle rate of change

|                   |                                |                      |              |
|-------------------|--------------------------------|----------------------|--------------|
| Data concept name | SteeringWheelAngleRateOfChange | Data status category | dynamic      |
|                   |                                | Data concept type    | value domain |

|                            |                                                                                      |                 |                               |
|----------------------------|--------------------------------------------------------------------------------------|-----------------|-------------------------------|
| Definition and description | It provides the change rate of the angle of the steering wheel.<br>Unit value is 3°. |                 |                               |
| Data structure             | <xs:simpleType name="SteeringWheelAngle" type="xs:short"/>                           |                 |                               |
| Issued by                  | JARI                                                                                 | source document | proposed CITS data dictionary |
| Remarks                    |                                                                                      |                 |                               |

## steering wheel status

|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | SteeringWheelStatus                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Data status category | dynamic                       |
|                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Data concept type    | aggregate domain              |
| Definition and description | It provides the status of the steering wheel. It contains angle, change rate, pressure and temperature for steering.                                                                                                                                                                                                                                                                                                                                                                         |                      |                               |
| Data structure             | <pre>&lt;xs:complexType name="SteeringWheelStatus" &gt;   &lt;xs:sequence&gt;     &lt;xs:element name="steeringWheelAngle" type="SteeringWheelAngle" /&gt;     &lt;xs:element name="steeringWheelAngleRateOfChange" type="SteeringWheelAngleRateOfChange" /&gt;     &lt;xs:element name="steeringAxlePressure" type="SteeringAxlePressure" /&gt;     &lt;xs:element name="steeringAxleTemperature" type="SteeringAxleTemperature" /&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt;</pre> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                      |                               |

## street address

|                            |                                                                                                                                                                      |                      |              |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------|
| Data concept name          | StreetAddress                                                                                                                                                        | Data status category | static       |
|                            |                                                                                                                                                                      | Data concept type    | data element |
| Definition and description | Street address is used to identify a point or an area on the earth's surface. It contains address type, postal city / settlement name, postal code and house number. |                      |              |

|                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |
|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|----------------|
| Data structure | <pre> &lt;xs:complexType name="StreetAddress"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="roadElementId" type="ID32bit" /&gt;     &lt;xs:element name="streetAddressType" type="TwoDigitCode"/&gt;     &lt;xs:element name="streetName" type="StreetName" /&gt;     &lt;xs:element name="addressInfomation"&gt;       &lt;xs:complexType minOccurs="0"&gt;         &lt;xs:element name="postalCitySettlementName" type="xs:string"/&gt;         &lt;xs:element name="postalCode" type="xs:string"/&gt;         &lt;xs:element name="lowerHouseNumber" type="FourDigitInt" minOccurs="0"/&gt;         &lt;xs:element name="upperHouseNumber" type="FourDigitInt" minOccurs="0"/&gt;       &lt;/xs:complexType&gt;     &lt;/xs:sequence&gt;   &lt;/xs:complexType&gt; </pre> |                 |                |
| Issued by      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | source document | ISO 14296:2016 |
| Remarks        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |                |

## street name

|                            |                                                                                                                                                                                                                                                                                                                                                                |                      |                |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|----------------|
| Data concept name          | StreetName                                                                                                                                                                                                                                                                                                                                                     | Data status category | static         |
|                            |                                                                                                                                                                                                                                                                                                                                                                | Data concept type    | value domain   |
| Definition and description | It provides the text of the street name.                                                                                                                                                                                                                                                                                                                       |                      |                |
| Data structure             | <pre> &lt;xs:complexType name="StreetName"&gt;   &lt;xs:sequence&gt;     &lt;xs:element name="streetNamePrefix" type="xs:string" numminOccurs="0"/&gt;     &lt;xs:element name="streetNameBody" type="xs:string" /&gt;     &lt;xs:element name="streetNameSuffix" type="xs:string" numminOccurs="0"/&gt;   &lt;/xs:sequence&gt; &lt;/xs:complexType&gt; </pre> |                      |                |
| Issued by                  |                                                                                                                                                                                                                                                                                                                                                                | source document      | ISO 14296:2016 |
| Remarks                    |                                                                                                                                                                                                                                                                                                                                                                |                      |                |

## sunshine

|                            |                                                                        |                      |                               |
|----------------------------|------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | sunshine                                                               | Data status category | dynamic                       |
|                            |                                                                        | Data concept type    | data element                  |
| Definition and description | It provides the quantity and level of sunshine.                        |                      |                               |
| Data structure             | <pre> &lt;xs:simpleType name="DE_Sunshine" type="EXTERNAL"/&gt; </pre> |                      |                               |
| Issued by                  | JARI                                                                   | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                        |                      |                               |

[t]

target gap

|                            |                                                  |                      |                    |
|----------------------------|--------------------------------------------------|----------------------|--------------------|
| Data concept name          | TargetGap                                        | Data status category | dynamic            |
|                            |                                                  | Data concept type    | value domain       |
| Definition and description | Target gap that a system aims for.               |                      |                    |
| Data structure             | <xs:simpleType name="TargetGap" type="Length" /> |                      |                    |
| Issued by                  |                                                  | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                  |                      |                    |

target time gap

|                            |                                                                                    |                      |                    |
|----------------------------|------------------------------------------------------------------------------------|----------------------|--------------------|
| Data name                  | TargetTimeGap                                                                      | Data status category | dynamic            |
|                            |                                                                                    | Data concept type    | value domain       |
| Definition and description | It provides the target time gap to the forward vehicle for cruise control systems. |                      |                    |
| Data structure             | <xs:simpleType name="TargetTimeGap" type="Second" />                               |                      |                    |
| Issued by                  |                                                                                    | source document      | ISO 15622:2010 ACC |
| Remarks                    |                                                                                    |                      |                    |

target acceleration-deceleration speed

|                            |                                                                                                                                                                                                                                                               |                      |                    |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|--------------------|
| Data concept name          | TargetAcceleration- DecelerationSpeed                                                                                                                                                                                                                         | Data status category | dynamic            |
|                            |                                                                                                                                                                                                                                                               | Data concept type    | value domain       |
| Definition and description | Target acceleration and deceleration speed that a system aims for.                                                                                                                                                                                            |                      |                    |
| Data structure             | <xs:complexType name="TargetAcceleration-DecelerationSpeed" ><br><xs:sequence><br><xs:element name="valueOfSpeed" type="FourDigitSignedInt"/><br><xs:element name="unitCodeOfSpeed" type="FourBitCode" minOccurs="0"/><br></xs:sequence><br></xs:complexType> |                      |                    |
| Issued by                  |                                                                                                                                                                                                                                                               | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                                                                                                                                                                                                                               |                      |                    |

## target speed

|                            |                                                   |                      |                    |
|----------------------------|---------------------------------------------------|----------------------|--------------------|
| Data concept name          | TargetSpeed                                       | Data status category | dynamic            |
|                            |                                                   | Data concept type    | value domain       |
| Definition and description | Speed that a system aims for.                     |                      |                    |
| Data structure             | <xs:simpleType name="TargetSpeed" type="Speed" /> |                      |                    |
| Issued by                  |                                                   | source document      | ISO 16787:2016 APS |
| Remarks                    |                                                   |                      |                    |

## temperature

|                            |                                                                                                                                                                                       |                      |                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | Temperature                                                                                                                                                                           | Data status category | dynamic                       |
|                            |                                                                                                                                                                                       | Data concept type    | value domain                  |
| Definition and description | It provides the change rate of the angle of the steering wheel.<br>Unit value is 1 °C.                                                                                                |                      |                               |
| Data structure             | <xs:simpleType name="Temperature" ><br><xs:restriction base="xs:short" ><br><xs:minInclusive value="-40"/><br><xs:maxInclusive value="255"/><br></xs:restriction><br></xs:simpleType> |                      |                               |
| Issued by                  | JARI                                                                                                                                                                                  | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                                                                                                                       |                      |                               |

## throttle confidence

|                            |                                                                                              |                      |                               |
|----------------------------|----------------------------------------------------------------------------------------------|----------------------|-------------------------------|
| Data concept name          | ThrottleConfidence                                                                           | Data status category | dynamic                       |
|                            |                                                                                              | Data concept type    | value domain                  |
| Definition and description | It provides the confidence of the throttle.<br>It is a confidence level of 95 % reliability. |                      |                               |
| Data structure             | <xs:simpleType name="ThrottleConfidence" type="Confidence"/>                                 |                      |                               |
| Issued by                  | JARI                                                                                         | source document      | proposed CITS data dictionary |
| Remarks                    |                                                                                              |                      |                               |

## throttle status

|                   |                |                      |              |
|-------------------|----------------|----------------------|--------------|
| Data concept name | ThrottleStatus | Data status category | dynamic      |
|                   |                | Data concept type    | value domain |