



# Technical Specification

**ISO/TS 22726-2**

## **Intelligent transport systems — Dynamic data and map database specification for connected and automated driving system applications —**

### **Part 2: Logical data model of dynamic data**

*Systèmes de transport intelligents — Spécification de  
données dynamiques et de bases de données cartographiques  
pour les applications de système de conduite connectées et  
automatisées —*

*Partie 2: Modèle de données logique des données dynamiques*

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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 document 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)).

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This document was prepared by Technical Committee ISO/TC 204, *Intelligent transport systems*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 278, *Intelligent transport systems*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement).

A list of all parts in the ISO 22726 series can be found on the ISO website.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at [www.iso.org/members.html](http://www.iso.org/members.html).

## Introduction

In response to emerging automated driving system development, the need to define associated map database standards has been recognized. Automated driving systems require information on the road, lane and intersection. Conventional road networks for intelligent transport systems (ITS) use a linear modelling method such as link and node. Due to these new requirements, automated driving systems need a data model to express advanced features. The belt-shaped data modelling method has already been developed based on the "belt concept" in ISO 20524-2 to provide information about the road, lane and intersection. The concept of "map for highly automated driving" (MHAD) adopts the belt-shaped data model and harmonizes with the conventional road model such as that of ISO/TS 22726-1.

This document can be used as a reference model for ITS, for example, connected and automated driving system applications and applications of backend map centres which use map and map-related data. Implementation of this document can lead to cost reductions in maintenance/expansion of map access libraries as well as compilation/maintenance of map and map-related data for data providers and connected and automated driving/vehicle control applications.

This document does not define or specify new standards for dynamic information. Neither does it define procedures and/or methods for generating unified contents. It can be used for connected and automated driving system applications. This document's data model of MHAD and that of ISO/TS 22726-1 complement each other.

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# Intelligent transport systems — Dynamic data and map database specification for connected and automated driving system applications —

## Part 2: Logical data model of dynamic data

### 1 Scope

This document specifies a unified logical data model based on available existing dynamic information standards. The data has precise relative location references to be linked with ISO/TS 22726-1 which specifies the architecture and the logical data model of static map data for connected and automated driving applications. Dynamic event data comes from external systems and has been defined and specified independently by existing standards. Therefore, the logical data model in this document is formed to synthesize contents referring to other standards.

### 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 19505 (all parts), *Information technology — Object Management Group Unified Modeling Language (OMG UML)*

### 3 Terms and definitions

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

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

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

#### 3.1

##### **cancellation**

action which provides indication that all the element information previously sent is not considered valid, due to an incorrect content

#### 3.2

##### **end**

binary attribute specifying whether the situation element is finished (true) or not (false)

**EXAMPLE** In EN 16157-7:2018, Table A.10, if finished (i.e. end is true) the overallEndTime in the OverallPeriod class associated with the SituationRecord is populated.

#### 3.3

##### **correctness**

correspondence with the universe of discourse

[SOURCE: ISO 19157-1:2023, 3.4]

### 3.4

#### **accuracy**

closeness of agreement between a test result or measurement result and the true value

[SOURCE: ISO 19157-1:2023, 3.1 modified — Note 1 to entry has been removed.]

### 3.5

#### **timeliness**

degree to which an IT service delivers outcomes within time limits

Note 1 to entry: In some cases, service timeliness is affected by a combination of multiple services provided by different service providers. For example, online shopping service is expected to provide not only timely retrieval of newly added products on sale, but also timely delivery to the user by the parcel-delivery service provider.

[SOURCE: ISO/IEC TS 25011:2017, 3.2.6.1]

### 3.6

#### **location reference**

specification of a location according to a specific set of rules

### 3.7

#### **location**

identifiable place within a three-dimensional space

### 3.8

#### **area location**

location that has a two-dimensional character

### 3.9

#### **linear location**

location that has a one-dimensional character

### 3.10

#### **line string**

geometric object representing a sequence of connected line segments in a 2D or 3D space and consisting of two or more points connected by straight line segments

Note 1 to entry: It can be used to represent a variety of features, such as roads, paths, or boundaries.

### 3.11

#### **multipolygon**

collection of polygons

### 3.12

#### **point by coordinates**

point location defined by a coordinate set with an optional bearing direction

Note 1 to entry: Adapted from EN 16157-2:2019, Table A.42.

### 3.13

#### **point location**

location that has a zero-dimensional character

### 3.14

#### **position confidence**

degree of certainty of the current location or position of an event or an object

### 3.15

#### **transversal location reference**

method of determining the location of a point or feature relative to a fixed reference line or centreline

**3.16****universe of discourse**

view of the real or hypothetical world that includes everything of interest

[SOURCE: ISO 19101-1:2014, 4.1.38]

**4 Abbreviated terms**

|       |                                                                                                                       |
|-------|-----------------------------------------------------------------------------------------------------------------------|
| DATEX | data exchange                                                                                                         |
|       | NOTE "DATEX" refers to a European standard dealing with data exchange for traffic management and traffic information. |
| DENM  | decentralized environmental notification message                                                                      |
| EV    | electric vehicle                                                                                                      |
| IVI   | in-vehicle information                                                                                                |
| MHAD  | map for highly automated driving                                                                                      |
| VICS  | vehicle information and communication systems                                                                         |
| VMS   | variable message sign                                                                                                 |

**5 Conformance**

The UML diagrams used in this document shall be in conformance with the ISO/IEC 19505 series.

**6 Modelling****6.1 Introduction**

This document was created by developing a generic logical data model for dynamic data services and comparing with the data models of services of interest, namely EN 16157-2, EN 16157-3 and EN 16157-7 (DATEX II), ISO 21219-15 (TPEG2-TEC), ISO/TS 19321 (IVI), ETSI EN 302 637-3 (DENM), ISO/TS 18234-8 (TPEG1-CTT) and VICS, which is based on a Japanese national standard. The methodology uses data modelling based on the Unified Modeling Language (UML), version 2, as specified in the ISO/IEC 19505 series. The generic data model specified in this document does conform to ISO 19103 and ISO 19107.

**6.2 Mapping of the different standards' classes and the proposed generic data model's classes**

The generic data model specified within this document has been compared with the data models of EN 16157-2, EN 16157-3 and EN 16157-7 (DATEX II) in the first case, ISO 21219-15 (TPEG2-TEC) in the second case, ISO/TS 19321 (IVI) in the third case, and ETSI EN 302 637-3 (DENM) for the fourth. When relevant, relationships have been established between classes of one of the existing specifications' data model and the generic logical data model of this document.

[Annex A](#) contains various matrices. The Relationship Matrix is a spreadsheet display of relationships between elements (classes) in two different packages, one of the generic data model and the other from one of the existing data models. The Relationship Matrices have been produced for all models.

NOTE The matrices were exported to Excel and merged into one single matrix where the corresponding classes can be managed together. Where no UML model is available (in the case of ISO/TS 18234-8 (TPEG1-CTT) and VICS) the classes of the specifications concerned have been added manually and the correctness of the mapping checked with the corresponding stakeholders (Republic of Korea and Japan).

Once the classes have been mapped to each other, the corresponding data attributes and metadata have been processed and the generic data model complemented.

### 6.3 Relationship between ISO/TS 22726-1 and this document (ISO/TS 22726-1)

Dynamic map data needs to be set onto the right location on a digital map. For this purpose, a map-matching function is used which consists of using different types of location referencing systems such as point locations, linear locations and area locations. For this reason, this document also covers the description of the interface specifying the logical link between dynamic data and static data as specified respectively by this document and by ISO/TS 22726-1.

The LocationRealisation package of the LocationReference package is used for this purpose. All location reference packages (AreaLocation, LinearLocation, PointLocation) have their respective Location Realisation class diagram implementing the interface to RoadNetworkElement specified in ISO/TS 22726-1 (see [Figure 1](#)).

[Annex B](#) presents different possible use cases in relation to location referencing.

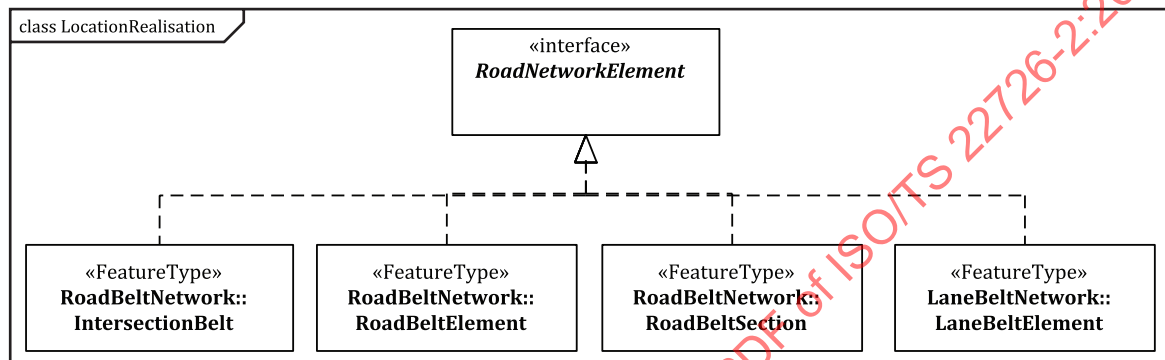


Figure 1 — LocationRealisation class from ISO/TS 22726-1:2023

## 7 Data content specification

### 7.1 Introduction

This clause provides a detailed overview of the data packages and related data classes of the generic data model, including their definition, structure and content.

### 7.2 "DynamicInformationDataSet" package

#### 7.2.1 Overall presentation

The DynamicInformationDataSet package shall contain the different packages dealing with data sets that can be exchanged via one the dynamic data interface considered by this document.

[Figure 2](#) pictures the classes of the package including the relationships between them.

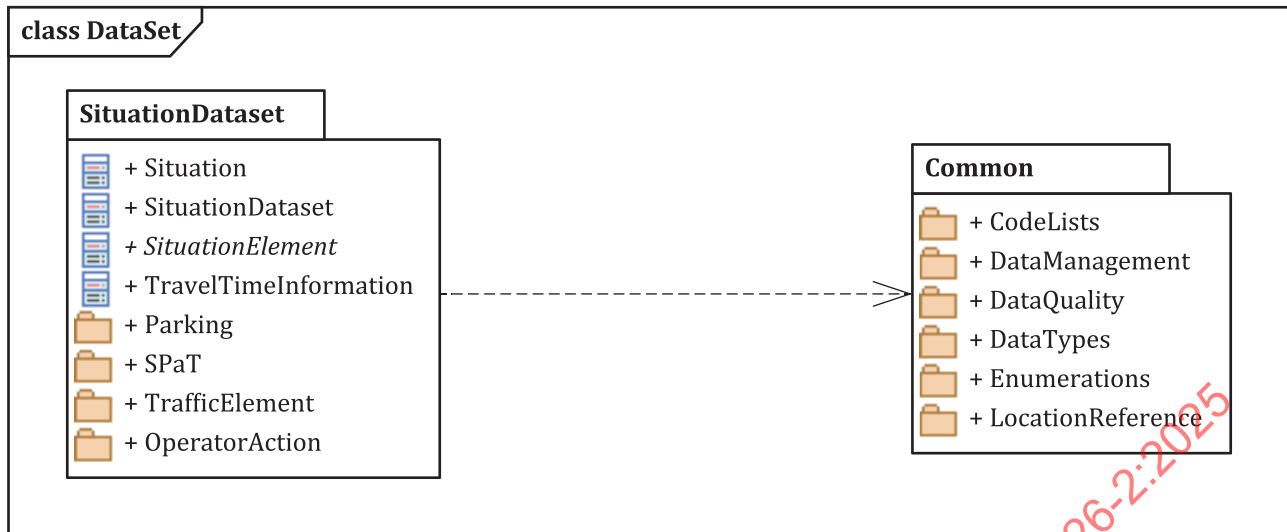


Figure 2 — The "DataSet" class diagram

### 7.2.2 Class definition

The classes belonging to the difference packages shown in [Figure 2](#) are described by the tables appearing in the subclause in which the package is detailed.

## 7.3 "Common" package

### 7.3.1 Overall presentation

The Common package shall comprise a collection of information including data types, reusable collections and lists of enumerations.

[Figure 3](#) pictures the classes of the package including the relationships between them.

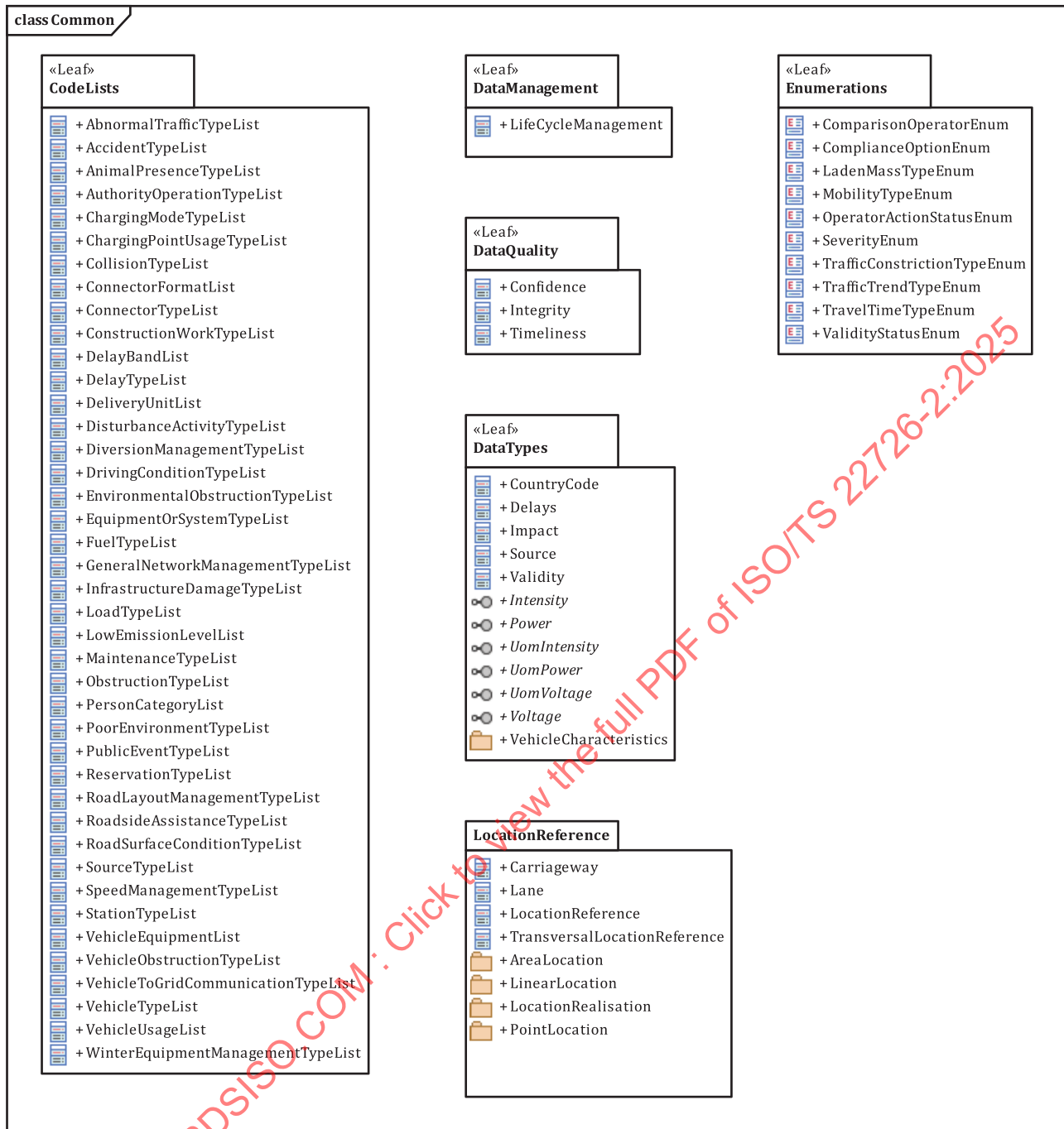


Figure 3 — The "Common" class diagram

### 7.3.2 Class definition

The classes belonging to the difference packages shown in [Figure 3](#) are described by the tables appearing in the subclause in which the package is detailed.

## 7.4 "CodeLists" package

### 7.4.1 Overall presentation

The CodeLists package shall comprise a collection of code lists used by the dynamic data services.



For these classes, examples of corresponding information are provided for illustrative purposes. They are implemented as XML files available separately and each included literal contains a numeric code, the corresponding value in lower CamelCase notation and the definition.

[Figure 4](#) pictures the classes of the package including the relationships between them.

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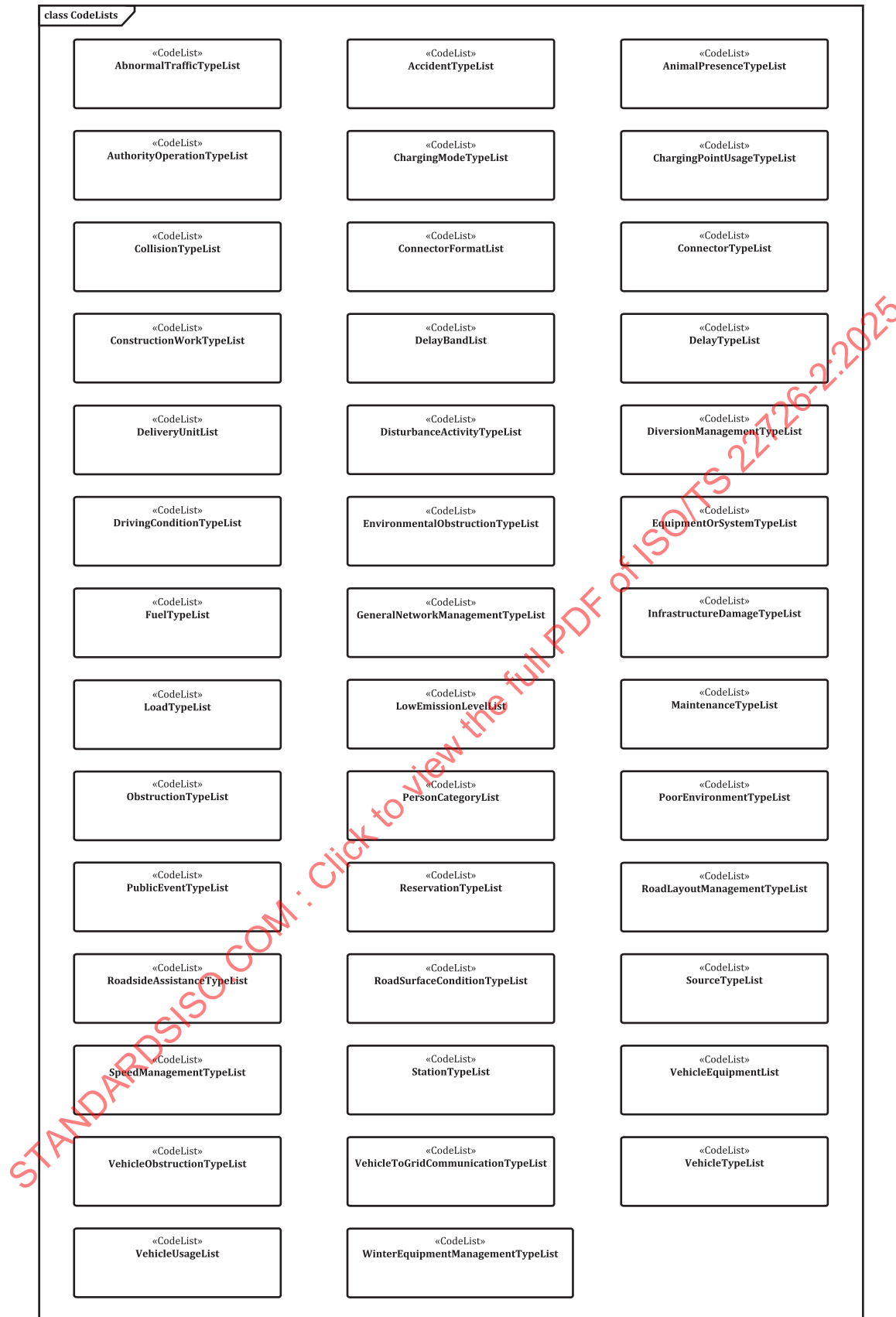


Figure 4 — The "CodeLists" class diagram

[Annex C](#) summarises the different URLs implementing these codelists as XML files.

## 7.4.2 Class definition

The tables below define the different classes used in this package.

[Table 1](#) defines the characteristics of the AbnormalTrafficTypeList class.

**Table 1 — AbnormalTrafficTypeList Class**

| Class <<CodeList>>: AbnormalTrafficTypeList                                                                                                            |              |                                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Descriptive terms for abnormal traffic conditions specifically relating to the nature of the traffic movement, implying levels of service. |              |                                                                                                                                                                                                             |
| Stereotypes: «CodeList»                                                                                                                                |              |                                                                                                                                                                                                             |
| Tagged values:                                                                                                                                         |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AbnormalTrafficTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AbnormalTrafficTypeList.xml</a> |
| Code (example)                                                                                                                                         | Value        | Definition                                                                                                                                                                                                  |
| 0                                                                                                                                                      | heavyTraffic | Traffic is heavy at the specified location (i.e. average speed is between 75 % and 90 % of its free-flow level).                                                                                            |
| 1                                                                                                                                                      | slowTraffic  | Traffic is slow-moving at the specified location, but not yet forming queues (i.e. average speed is between 25 % and 75 % of its free-flow level).                                                          |
|                                                                                                                                                        | ...          |                                                                                                                                                                                                             |

[Table 2](#) defines the characteristics of the AccidentTypeList class.

**Table 2 — AccidentTypeList Class**

| Class <<CodeList>>: AccidentTypeList                                |           |                                                                                                                                                                                                                                         |
|---------------------------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Collection of descriptive terms for types of accidents. |           |                                                                                                                                                                                                                                         |
| Stereotypes: «CodeList»                                             |           |                                                                                                                                                                                                                                         |
| Tagged values:                                                      |           | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AccidentTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AccidentTypeList.xml</a>                                           |
| Code (example)                                                      | Value     | Definition                                                                                                                                                                                                                              |
| 0                                                                   | accident  | Situations in which one or more vehicles lose control and do not recover. This includes collisions between vehicle(s) or other road user(s), between vehicle(s) and fixed obstacle(s), or the result of a vehicle running off the road. |
| 11                                                                  | collision | Collision of vehicle with another object of unspecified type.                                                                                                                                                                           |
|                                                                     | ...       |                                                                                                                                                                                                                                         |

[Table 3](#) defines the characteristics of the AnimalPresenceTypeList class.

**Table 3 — AnimalPresenceTypeList Class**

| Class <<CodeList>>: AnimalPresenceTypeList |       |                                                                                                                                                                                                           |
|--------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of animal presence.      |       |                                                                                                                                                                                                           |
| Stereotypes: «CodeList»                    |       |                                                                                                                                                                                                           |
| Tagged values:                             |       | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AnimalPresenceTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AnimalPresenceTypeList.xml</a> |
| Code (example)                             | Value | Definition                                                                                                                                                                                                |

**Table 3** (continued)

|   |                        |                                                                           |
|---|------------------------|---------------------------------------------------------------------------|
| 0 | animalOnTheRoad        | Traffic is potentially disrupted due to animals on the roadway.           |
| 1 | herdOfAnimalsOnTheRoad | Traffic is potentially disrupted due to a herd of animals on the roadway. |
|   | ...                    |                                                                           |

[Table 4](#) defines the characteristics of the AuthorityOperationTypeList class.

**Table 4 — AuthorityOperationTypeList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: AuthorityOperationTypeList</b> |                 |                                                                                                                                                                                                                   |
|-------------------------------------------------------------------|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of authority operations.                        |                 |                                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                                           |                 |                                                                                                                                                                                                                   |
| Tagged values:                                                    |                 | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AuthorityOperationTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/AuthorityOperationTypeList.xml</a> |
| Code (example)                                                    | Value           | Definition                                                                                                                                                                                                        |
| 2                                                                 | civilEmergency  | A situation, perceived or actual, relating to a civil emergency which could disrupt traffic. This includes large scale destruction, through events such as earthquakes, insurrection and civil disobedience.      |
| 14                                                                | vehicleWeighing | A permanent or temporary operation established on or adjacent to the carriageway for weighing of vehicles by authorities.                                                                                         |
|                                                                   | ...             |                                                                                                                                                                                                                   |

[Table 5](#) defines the characteristics of the ChargingModeTypeList class.

**Table 5 — ChargingModeTypeList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: ChargingModeTypeList</b>                                  |           |                                                                                                                                                                                                       |
|----------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the types of electric charging modes according to IEC 61851 terminology. |           |                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                                                      |           |                                                                                                                                                                                                       |
| Tagged values:                                                                               |           | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ChargingModeTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ChargingModeTypeList.xml</a> |
| Code (example)                                                                               | Value     | Definition                                                                                                                                                                                            |
| 0                                                                                            | ccs       | Charging with a combined charging solution (CCS). AC and DC are used simultaneously.                                                                                                                  |
| 5                                                                                            | mode2AC3p | Mode 2, AC 3 phases.                                                                                                                                                                                  |
|                                                                                              | ...       |                                                                                                                                                                                                       |

[Table 6](#) defines the characteristics of the ChargingPointUsageTypeList class.

**Table 6 — ChargingPointUsageTypeList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: ChargingPointUsageTypeList</b>      |       |                                                                                                                                                                                                                   |
|------------------------------------------------------------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the types of usage for an electric charging point. |       |                                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                                                |       |                                                                                                                                                                                                                   |
| Tagged values:                                                         |       | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ChargingPointUsageTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ChargingPointUsageTypeList.xml</a> |
| Code (example)                                                         | Value | Definition                                                                                                                                                                                                        |

**Table 6** (continued)

|   |                       |                                                                                   |
|---|-----------------------|-----------------------------------------------------------------------------------|
| 4 | electricVehicle       | Charging of electric vehicles.                                                    |
| 5 | lorryPowerConsumption | Supply for lorries with power consumption, e.g. for refrigerated goods transport. |
|   | ...                   |                                                                                   |

[Table 7](#) defines the characteristics of the CollisionTypeList class.

**Table 7 — CollisionTypeList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: CollisionTypeList</b> |                       |                                                                                                                                                                                                 |
|----------------------------------------------------------|-----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Identifies a type of collision.              |                       |                                                                                                                                                                                                 |
| Stereotypes: «CodeList»                                  |                       |                                                                                                                                                                                                 |
| Tagged values:                                           |                       | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/CollisionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/CollisionTypeList.xml</a> |
| Code (example)                                           | Value                 | Definition                                                                                                                                                                                      |
| 1                                                        | collisionWithAnimal   | Collision of vehicle with one or more animals.                                                                                                                                                  |
| 2                                                        | collisionWithObstacle | Collision of vehicle with an object of a stationary nature.                                                                                                                                     |
|                                                          | ...                   |                                                                                                                                                                                                 |

[Table 8](#) defines the characteristics of the ConnectorFormatList class.

**Table 8 — ConnectorFormatList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: ConnectorFormatList</b>          |            |                                                                                                                                                                                                     |
|---------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: A list of cable types used during the charging process. |            |                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                                             |            |                                                                                                                                                                                                     |
| Tagged values:                                                      |            | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConnectorFormatList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConnectorFormatList.xml</a> |
| Code (example)                                                      | Value      | Definition                                                                                                                                                                                          |
| 0                                                                   | cableMode2 | The connector is an attached cable; the user of an electric vehicle (EV) needs to have a fitting inlet for a mode 2 cable, common for most domestic sockets.                                        |
| 3                                                                   | socket     | The connector is a socket; the EV user needs to bring a fitting plug.                                                                                                                               |
|                                                                     | ...        |                                                                                                                                                                                                     |

[Table 9](#) defines the characteristics of the ConnectorTypeList class.

**Table 9 — ConnectorTypeList Class**

| <b>Class &lt;&lt;CodeList&gt;&gt;: ConnectorTypeList</b>                |         |                                                                                                                                                                                                 |
|-------------------------------------------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: A list of commonly used connectors and charging interfaces. |         |                                                                                                                                                                                                 |
| Stereotypes: «CodeList»                                                 |         |                                                                                                                                                                                                 |
| Tagged values:                                                          |         | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConnectorTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConnectorTypeList.xml</a> |
| Code (example)                                                          | Value   | Definition                                                                                                                                                                                      |
| 0                                                                       | cee3    | Connector CEE3 (Voltage 230 V intensity 16A)                                                                                                                                                    |
| 2                                                                       | chademo | Connector CHAdeMO (600 V DC). Used mostly in Japan.                                                                                                                                             |
|                                                                         | ...     |                                                                                                                                                                                                 |

[Table 10](#) defines the characteristics of the ConstructionWorkTypeList class.

**Table 10 — ConstructionWorkTypeList Class**

| Class <<CodeList>>: ConstructionWorkTypeList         |                  |                                                                                                                                                                                                               |
|------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of works relating to construction. |                  |                                                                                                                                                                                                               |
| Stereotypes: «CodeList»                              |                  |                                                                                                                                                                                                               |
| Tagged values:                                       |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConstructionWorkTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ConstructionWorkTypeList.xml</a> |
| Code (example)                                       | Value            | Definition                                                                                                                                                                                                    |
| 0                                                    | blastingWork     | Blasting or quarrying work at the specified location.                                                                                                                                                         |
| 4                                                    | roadWideningWork | Road widening work at the specified location.                                                                                                                                                                 |
|                                                      | ...              |                                                                                                                                                                                                               |

[Table 11](#) defines the characteristics of the DelayBandList class.

**Table 11 — DelayBandList Class**

| Class <<CodeList>>: DelayBandList                                                                             |                |                                                                                                                                                                                         |
|---------------------------------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of values as a classification of a delay banded by length (i.e. the additional travel time). |                |                                                                                                                                                                                         |
| Stereotypes: «CodeList»                                                                                       |                |                                                                                                                                                                                         |
| Tagged values:                                                                                                |                | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DelayBandList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DelayBandList.xml</a> |
| Code (example)                                                                                                | Value          | Definition                                                                                                                                                                              |
| 0                                                                                                             | negligible     | Negligible delay.                                                                                                                                                                       |
| 1                                                                                                             | upToTenMinutes | Delay up to ten minutes.                                                                                                                                                                |
|                                                                                                               | ...            |                                                                                                                                                                                         |

[Table 12](#) defines the characteristics of the DelayTypeList class.

**Table 12 — DelayTypeList Class**

| Class <<CodeList>>: DelayTypeList                                     |            |                                                                                                                                                                                         |
|-----------------------------------------------------------------------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of coarse values used as classifications of a delay. |            |                                                                                                                                                                                         |
| Stereotypes: «CodeList»                                               |            |                                                                                                                                                                                         |
| Tagged values:                                                        |            | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DelayTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DelayTypeList.xml</a> |
| Code (example)                                                        | Value      | Definition                                                                                                                                                                              |
| 0                                                                     | delays     | Delays on the road network as a result of any situation which causes hold-ups.                                                                                                          |
| 2                                                                     | longDelays | Delays on the road network of unusual severity.                                                                                                                                         |
|                                                                       | ...        |                                                                                                                                                                                         |

[Table 13](#) defines the characteristics of the DeliveryUnitList class.

Table 13 — DeliveryUnitList Class

| Class <<CodeList>>: DeliveryUnitList                                       |          |                                                                                                                                                                                               |
|----------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the different units in which the delivery is measured. |          |                                                                                                                                                                                               |
| Stereotypes: «CodeList»                                                    |          |                                                                                                                                                                                               |
| Tagged values:                                                             |          | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DeliveryUnitList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DeliveryUnitList.xml</a> |
| Code (example)                                                             | Value    | Definition                                                                                                                                                                                    |
| 3                                                                          | kWh      | Kilowatt hour.                                                                                                                                                                                |
| 6                                                                          | usGallon | US gallon (3,785 litres).                                                                                                                                                                     |
|                                                                            | ...      |                                                                                                                                                                                               |

[Table 14](#) defines the characteristics of the DisturbanceActivityTypeList class.

Table 14 — DisturbanceActivityTypeList Class

| Class <<CodeList>>: DisturbanceActivityTypeList |                  |                                                                                                                                                                                                                     |
|-------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of disturbance activities.    |                  |                                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                         |                  |                                                                                                                                                                                                                     |
| Tagged values:                                  |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DisturbanceActivityTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DisturbanceActivityTypeList.xml</a> |
| Code (example)                                  | Value            | Definition                                                                                                                                                                                                          |
| 3                                               | assetDestruction | A situation where assets of one or more persons or authorities have been destroyed.                                                                                                                                 |
| 9                                               | demonstration    | A public protest with the potential to disrupt traffic.                                                                                                                                                             |
|                                                 | ...              |                                                                                                                                                                                                                     |

[Table 15](#) defines the characteristics of the DiversionManagementTypeList class.

Table 15 — DiversionManagementTypeList Class

| Class <<CodeList>>: DiversionManagementTypeList                    |                            |                                                                                                                                                                                                                     |
|--------------------------------------------------------------------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Management actions relating to diversion or rerouting. |                            |                                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                                            |                            |                                                                                                                                                                                                                     |
| Tagged values:                                                     |                            | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DiversionManagementTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DiversionManagementTypeList.xml</a> |
| Code (example)                                                     | Value                      | Definition                                                                                                                                                                                                          |
| 0                                                                  | doNotFollowDiversion-Signs | Do not follow diversion signs.                                                                                                                                                                                      |
| 5                                                                  | followLocalDiversion       | Rerouted traffic is to follow local diversion.                                                                                                                                                                      |
|                                                                    | ...                        |                                                                                                                                                                                                                     |

[Table 16](#) defines the characteristics of the DrivingConditionTypeList class.

Table 16 — DrivingConditionTypeList Class

| Class <<CodeList>>: DrivingConditionTypeList           |                  |                                                                                                                                                                                                               |
|--------------------------------------------------------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of the perceived driving conditions. |                  |                                                                                                                                                                                                               |
| Stereotypes: «CodeList»                                |                  |                                                                                                                                                                                                               |
| Tagged values:                                         |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DrivingConditionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/DrivingConditionTypeList.xml</a> |
| Code (example)                                         | Value            | Definition                                                                                                                                                                                                    |
| 0                                                      | impossible       | Current conditions are making driving impossible.                                                                                                                                                             |
| 3                                                      | passableWithCare | The roadway is passable to vehicles with driver care.                                                                                                                                                         |
|                                                        | ...              |                                                                                                                                                                                                               |

[Table 17](#) defines the characteristics of the EnvironmentalObstructionTypeList class.

Table 17 — EnvironmentalObstructionTypeList Class

| Class <<CodeList>>: EnvironmentalObstructionTypeList |                  |                                                                                                                                                                                                                               |
|------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of environmental obstructions.     |                  |                                                                                                                                                                                                                               |
| Stereotypes: «CodeList»                              |                  |                                                                                                                                                                                                                               |
| Tagged values:                                       |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/EnvironmentalObstructionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/EnvironmentalObstructionTypeList.xml</a> |
| Code (example)                                       | Value            | Definition                                                                                                                                                                                                                    |
| 0                                                    | avalanches       | The road is obstructed or partially obstructed due to snow slides.                                                                                                                                                            |
| 1                                                    | earthquakeDamage | The road is obstructed or partially obstructed because of damage caused by an earthquake.                                                                                                                                     |
|                                                      | ...              |                                                                                                                                                                                                                               |

[Table 18](#) defines the characteristics of the EquipmentOrSystemTypeList class.

Table 18 — EquipmentOrSystemTypeList Class

| Class <<CodeList>>: EquipmentOrSystemTypeList                                                 |              |                                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of equipment and systems used to support the operation of the road network. |              |                                                                                                                                                                                                                 |
| Stereotypes: «CodeList»                                                                       |              |                                                                                                                                                                                                                 |
| Tagged values:                                                                                |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/EquipmentOrSystemTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/EquipmentOrSystemTypeList.xml</a> |
| Code (example)                                                                                | Value        | Definition                                                                                                                                                                                                      |
| 2                                                                                             | cctvCameras  | Closed-circuit television cameras.                                                                                                                                                                              |
| 9                                                                                             | rampControls | Ramp control equipment.                                                                                                                                                                                         |
|                                                                                               | ...          |                                                                                                                                                                                                                 |

[Table 19](#) defines the characteristics of the FuelTypeList class.



Table 19 — FuelTypeList Class

| Class <<CodeList>>: FuelTypeList                     |         |                                                                                                                                                                                       |
|------------------------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of types of fuel used by a vehicle. |         |                                                                                                                                                                                       |
| Stereotypes: «CodeList»                              |         |                                                                                                                                                                                       |
| Tagged values:                                       |         | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/FuelTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/FuelTypeList.xml</a> |
| Code (example)                                       | Value   | Definition                                                                                                                                                                            |
| 1                                                    | battery | Battery.                                                                                                                                                                              |
| 5                                                    | ethanol | Ethanol.                                                                                                                                                                              |
|                                                      | ...     |                                                                                                                                                                                       |

[Table 20](#) defines the characteristics of the GeneralNetworkManagementTypeList class.

Table 20 — GeneralNetworkManagementTypeList Class

| Class <<CodeList>>: GeneralNetworkManagementTypeList |                        |                                                                                                                                                                                                                               |
|------------------------------------------------------|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of network management actions.     |                        |                                                                                                                                                                                                                               |
| Stereotypes: «CodeList»                              |                        |                                                                                                                                                                                                                               |
| Tagged values:                                       |                        | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/GeneralNetworkManagementTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/GeneralNetworkManagementTypeList.xml</a> |
| Code (example)                                       | Value                  | Definition                                                                                                                                                                                                                    |
| 0                                                    | bridgeSwingInOperation | The bridge at the specified location has swung or lifted and is therefore temporarily closed to traffic.                                                                                                                      |
| 4                                                    | temporaryTrafficLights | Traffic is being controlled by temporary traffic lights (red-yellow-green or red-green).                                                                                                                                      |
|                                                      | ...                    |                                                                                                                                                                                                                               |

[Table 21](#) defines the characteristics of the InfrastructureDamageTypeList class.

Table 21 — InfrastructureDamageTypeList Class

| Class <<CodeList>>: InfrastructureDamageTypeList                                         |                     |                                                                                                                                                                                                                       |
|------------------------------------------------------------------------------------------|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of infrastructure damage which may have an effect on the road network. |                     |                                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                                                  |                     |                                                                                                                                                                                                                       |
| Tagged values:                                                                           |                     | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/InfrastructureDamageTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/InfrastructureDamageTypeList.xml</a> |
| Code (example)                                                                           | Value               | Definition                                                                                                                                                                                                            |
| 4                                                                                        | damagedCrashBarrier | Damage to a crash barrier that may cause traffic disruption.                                                                                                                                                          |
| 11                                                                                       | fallenPowerCables   | The road is obstructed or partially obstructed by one or more fallen power cables.                                                                                                                                    |
|                                                                                          | ...                 |                                                                                                                                                                                                                       |

[Table 22](#) defines the characteristics of the LoadTypeList class.

Table 22 — LoadTypeList Class

| Class <<CodeList>>: LoadTypeList                        |              |                                                                                                                                                                                        |
|---------------------------------------------------------|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of types of load carried by a vehicle. |              |                                                                                                                                                                                        |
| Stereotypes: «CodeList»                                 |              |                                                                                                                                                                                        |
| Tagged values:                                          |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/LoadTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/LoadTypeList.xml</a>  |
| Code (example)                                          | Value        | Definition                                                                                                                                                                             |
| 0                                                       | abnormalLoad | A load that exceeds normal vehicle dimensions in terms of height, length, width, gross vehicle weight or axle weight or any combination of these. Generally termed an "abnormal load". |
| 2                                                       | chemicals    | Chemicals of unspecified type.                                                                                                                                                         |
|                                                         | ...          |                                                                                                                                                                                        |

[Table 23](#) defines the characteristics of the LowEmissionLevelList class.

Table 23 — LowEmissionLevelList Class

| Class <<CodeList>>: LowEmissionLevelList                  |                  |                                                                                                                                                                                                       |
|-----------------------------------------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the low emission levels of a vehicle. |                  |                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                   |                  |                                                                                                                                                                                                       |
| Tagged values:                                            |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/LowEmissionLevelList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/LowEmissionLevelList.xml</a> |
| Code (example)                                            | Value            | Definition                                                                                                                                                                                            |
| 0                                                         | lowEmissionLevel | Vehicles with low level emission.                                                                                                                                                                     |
| 1                                                         | freeOfEmission   | Only vehicles that do not produce emissions (e.g. electric driven). Hybrid driven cars are allowed, when they switch to emission free mode within the considered situation.                           |
|                                                           | ...              |                                                                                                                                                                                                       |

[Table 24](#) defines the characteristics of the MaintenanceTypeList class.

Table 24 — MaintenanceTypeList Class

| Class <<CodeList>>: MaintenanceTypeList |                  |                                                                                                                                                                                                     |
|-----------------------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of road maintenance.  |                  |                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                 |                  |                                                                                                                                                                                                     |
| Tagged values:                          |                  | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/MaintenanceTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/MaintenanceTypeList.xml</a> |
| Code (example)                          | Value            | Definition                                                                                                                                                                                          |
| 1                                       | clearanceWork    | Clearance work of an unspecified nature.                                                                                                                                                            |
| 17                                      | snowploughsInUse | Snowploughs or other similar mechanical devices in use to clear snow from the road.                                                                                                                 |
|                                         | ...              |                                                                                                                                                                                                     |

[Table 25](#) defines the characteristics of the ObstructionTypeList class.

Table 25 — ObstructionTypeList Class

| Class <<CodeList>>: ObstructionTypeList               |                |                                                                                                                                                                                                     |
|-------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of obstructions on the carriageway. |                |                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                               |                |                                                                                                                                                                                                     |
| Tagged values:                                        |                | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ObstructionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ObstructionTypeList.xml</a> |
| Code (example)                                        | Value          | Definition                                                                                                                                                                                          |
| 3                                                     | craneOperating | A crane is operating either on or adjacent to the road which can cause an obstruction to traffic.                                                                                                   |
| 21                                                    | shedLoad       | Spillage of transported goods on the roadway which can cause traffic disruption.                                                                                                                    |
|                                                       | ...            |                                                                                                                                                                                                     |

[Table 26](#) defines the characteristics of the PersonCategoryList class.

Table 26 — PersonCategoryList Class

| Class <<CodeList>>: PersonCategoryList |              |                                                                                                                                                                                                   |
|----------------------------------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Categories of person.      |              |                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                |              |                                                                                                                                                                                                   |
| Tagged values:                         |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PersonCategoryList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PersonCategoryList.xml</a> |
| Code (example)                         | Value        | Definition                                                                                                                                                                                        |
| 1                                      | child        | Child (age 4 to 17).                                                                                                                                                                              |
| 5                                      | medicalStaff | A member of the medical service.                                                                                                                                                                  |
|                                        | ...          |                                                                                                                                                                                                   |

[Table 27](#) defines the characteristics of the PoorEnvironmentTypeList class.

Table 27 — PoorEnvironmentTypeList Class

| Class <<CodeList>>: PoorEnvironmentTypeList         |            |                                                                                                                                                                                                             |
|-----------------------------------------------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of poor environmental conditions. |            |                                                                                                                                                                                                             |
| Stereotypes: «CodeList»                             |            |                                                                                                                                                                                                             |
| Tagged values:                                      |            | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PoorEnvironmentTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PoorEnvironmentTypeList.xml</a> |
| Code (example)                                      | Value      | Definition                                                                                                                                                                                                  |
| 4                                                   | crosswinds | Strong cross winds across the direction of the roadway (e.g. on a ridge or bridge).                                                                                                                         |
| 17                                                  | heavyRain  | Heavy rainfall, limiting visibility to 50 m or less.                                                                                                                                                        |
|                                                     | ...        |                                                                                                                                                                                                             |

[Table 28](#) defines the characteristics of the PublicEventTypeList class.

Table 28 — PublicEventTypeList Class

| Class <<CodeList>>: PublicEventTypeList                       |          |                                                                                                                                                                                                     |
|---------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Type of public event which could disrupt traffic. |          |                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                                       |          |                                                                                                                                                                                                     |
| Tagged values:                                                |          | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PublicEventTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/PublicEventTypeList.xml</a> |
| Code (example)                                                | Value    | Definition                                                                                                                                                                                          |
| 28                                                            | fair     | Periodic (e.g. annual), often traditional, gathering for entertainment or trade promotion, which could disrupt traffic.                                                                             |
| 61                                                            | marathon | Marathon, cross-country or road running event that could disrupt traffic.                                                                                                                           |
|                                                               | ...      |                                                                                                                                                                                                     |

[Table 29](#) defines the characteristics of the ReservationTypeList class.

Table 29 — ReservationTypeList Class

| Class <<CodeList>>: ReservationTypeList                                 |              |                                                                                                                                                                                                     |
|-------------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the different types of reservation of a time frame. |              |                                                                                                                                                                                                     |
| Stereotypes: «CodeList»                                                 |              |                                                                                                                                                                                                     |
| Tagged values:                                                          |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ReservationTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/ReservationTypeList.xml</a> |
| Code (example)                                                          | Value        | Definition                                                                                                                                                                                          |
| 0                                                                       | mandatory    | Reservation is mandatory                                                                                                                                                                            |
| 1                                                                       | notAvailable | Reservation is not possible.                                                                                                                                                                        |
|                                                                         | ...          |                                                                                                                                                                                                     |

[Table 30](#) defines the characteristics of the RoadLayoutManagementTypeList class.

Table 30 — RoadLayoutManagementTypeList Class

| Class <<CodeList>>: RoadLayoutManagementTypeList                            |                        |                                                                                                                                                                                                                       |
|-----------------------------------------------------------------------------|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Management actions relating to road, carriageway or lane usage. |                        |                                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                                     |                        |                                                                                                                                                                                                                       |
| Tagged values:                                                              |                        | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadLayoutManagementTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadLayoutManagementTypeList.xml</a> |
| Code (example)                                                              | Value                  | Definition                                                                                                                                                                                                            |
| 0                                                                           | carPoolLaneInOperation | Dedicated car pool lane(s) is/are in operation for vehicles carrying at least the specified number of occupants.                                                                                                      |
| 13                                                                          | laneClosures           | Lane closures are in operation at the specified location for vehicles with the specified characteristics or all, if none defined, in the specified direction.                                                         |
|                                                                             | ...                    |                                                                                                                                                                                                                       |

[Table 31](#) defines the characteristics of the RoadsideAssistanceTypeList class.

Table 31 — RoadsideAssistanceTypeList Class

| Class <<CodeList>>: RoadsideAssistanceTypeList |              |                                                                                                                                                                                                                   |
|------------------------------------------------|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of roadside assistance.      |              |                                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                        |              |                                                                                                                                                                                                                   |
| Tagged values:                                 |              | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadsideAssistanceTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadsideAssistanceTypeList.xml</a> |
| Code (example)                                 | Value        | Definition                                                                                                                                                                                                        |
| 0                                              | airAmbulance | Air ambulance assistance.                                                                                                                                                                                         |
| 4                                              | foodDelivery | Food delivery.                                                                                                                                                                                                    |
|                                                | ...          |                                                                                                                                                                                                                   |

[Table 32](#) defines the characteristics of the RoadSurfaceConditionTypeList class.

Table 32 — RoadSurfaceConditionTypeList Class

| Class <<CodeList>>: RoadSurfaceConditionTypeList                                      |                |                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------|----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of road surface conditions which are related or not to the weather. |                |                                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                                               |                |                                                                                                                                                                                                                       |
| Tagged values:                                                                        |                | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadSurfaceConditionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/RoadSurfaceConditionTypeList.xml</a> |
| Code (example)                                                                        | Value          | Definition                                                                                                                                                                                                            |
| 0                                                                                     | blackIce       | Severe skid risk due to black ice (i.e. clear ice, which is impossible or very difficult to see).                                                                                                                     |
| 2                                                                                     | looseChippings | Increased skid risk and injury risk due to loose chippings on road.                                                                                                                                                   |
|                                                                                       | ...            |                                                                                                                                                                                                                       |

[Table 33](#) defines the characteristics of the SourceTypeList class.

Table 33 — SourceTypeList Class

| Class <<CodeList>>: SourceTypeList                                           |                   |                                                                                                                                                                                           |
|------------------------------------------------------------------------------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Type of sources from which situation information may be derived. |                   |                                                                                                                                                                                           |
| Stereotypes: «CodeList»                                                      |                   |                                                                                                                                                                                           |
| Tagged values:                                                               |                   | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/SourceTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/SourceTypeList.xml</a> |
| Code (example)                                                               | Value             | Definition                                                                                                                                                                                |
| 1                                                                            | cameraObservation | A camera observation (either still or video camera).                                                                                                                                      |
| 10                                                                           | policePatrol      | A police patrol.                                                                                                                                                                          |
|                                                                              | ...               |                                                                                                                                                                                           |

[Table 34](#) defines the characteristics of the SpeedManagementTypeList class.

Table 34 — SpeedManagementTypeList Class

| Class <<CodeList>>: SpeedManagementTypeList       |                               |                                                                                                                                                                                                             |
|---------------------------------------------------|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Management actions relating to speed. |                               |                                                                                                                                                                                                             |
| Stereotypes: «CodeList»                           |                               |                                                                                                                                                                                                             |
| Tagged values:                                    |                               | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/SpeedManagementTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/SpeedManagementTypeList.xml</a> |
| Code (example)                                    | Value                         | Definition                                                                                                                                                                                                  |
| 0                                                 | activeSpeedControlInOperation | Automatic speed control measures are in place at the specified location, whereby speed limits are set by an automatic system which is triggered by traffic sensing equipment.                               |
| 4                                                 | reduceYourSpeed               | Reduce your speed.                                                                                                                                                                                          |
|                                                   | ...                           |                                                                                                                                                                                                             |

[Table 35](#) defines the characteristics of the StationTypeList class.

Table 35 — StationTypeList Class

| Class <<CodeList>>: StationTypeList                                                                                      |             |                                                                                                                                                                                             |
|--------------------------------------------------------------------------------------------------------------------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: A list of the different station types (service levels) to be expected for fuelling or charging, and payment. |             |                                                                                                                                                                                             |
| Stereotypes: «CodeList»                                                                                                  |             |                                                                                                                                                                                             |
| Tagged values:                                                                                                           |             | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/StationTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/StationTypeList.xml</a> |
| Code (example)                                                                                                           | Value       | Definition                                                                                                                                                                                  |
| 0                                                                                                                        | fullService | Full fuelling service carried out by an employee.                                                                                                                                           |
| 1                                                                                                                        | selfService | Self-service for fuelling.                                                                                                                                                                  |
|                                                                                                                          | ...         |                                                                                                                                                                                             |

[Table 36](#) defines the characteristics of the VehicleEquipmentList class.

Table 36 — VehicleEquipmentList Class

| Class <<CodeList>>: VehicleEquipmentList                               |                                 |                                                                                                                                                                                                       |
|------------------------------------------------------------------------|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of the types of vehicle equipment in use or on board. |                                 |                                                                                                                                                                                                       |
| Stereotypes: «CodeList»                                                |                                 |                                                                                                                                                                                                       |
| Tagged values:                                                         |                                 | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleEquipmentList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleEquipmentList.xml</a> |
| Code (example)                                                         | Value                           | Definition                                                                                                                                                                                            |
| 2                                                                      | snowChainInUse                  | Vehicle using snow chains.                                                                                                                                                                            |
| 5                                                                      | withoutSnowTyresOrChainsOnBoard | Vehicle which is not carrying on board snow tyres or chains.                                                                                                                                          |
|                                                                        | ...                             |                                                                                                                                                                                                       |

[Table 37](#) defines the characteristics of the VehicleObstructionType class.

Table 37 — VehicleObstructionTypeList Class

| Class <<CodeList>>: VehicleObstructionTypeList        |               |                                                                                                                                                                                                                   |
|-------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of obstructions involving vehicles. |               |                                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                               |               |                                                                                                                                                                                                                   |
| Tagged values:                                        |               | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleObstructionTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleObstructionTypeList.xml</a> |
| Code (example)                                        | Value         | Definition                                                                                                                                                                                                        |
| 15                                                    | slowVehicle   | A vehicle travelling at well below normal highway speeds which can potentially cause traffic disruption.                                                                                                          |
| 20                                                    | vehicleOnFire | A vehicle is or has been on fire and can potentially cause traffic disruption.                                                                                                                                    |
|                                                       | ...           |                                                                                                                                                                                                                   |

[Table 38](#) defines the characteristics of the VehicleToGridCommunicationTypeList class.

Table 38 — VehicleToGridCommunicationTypeList Class

| Class <<CodeList>>: VehicleToGridCommunicationTypeList                                     |          |                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------------------|----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: A list of communication types for communication between vehicles and the grid. |          |                                                                                                                                                                                                                                   |
| Stereotypes: «CodeList»                                                                    |          |                                                                                                                                                                                                                                   |
| Tagged values:                                                                             |          | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleToGridCommunicationTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleToGridCommunicationTypeList.xml</a> |
| Code (example)                                                                             | Value    | Definition                                                                                                                                                                                                                        |
| 1                                                                                          | iso15118 | Communication according to ISO 15118-20.                                                                                                                                                                                          |
| 3                                                                                          | other    | Communication according to other guidelines or specifications.                                                                                                                                                                    |
|                                                                                            | ...      |                                                                                                                                                                                                                                   |

[Table 39](#) defines the characteristics of the VehicleTypeList class.

Table 39 — VehicleTypeList Class

| Class <<CodeList>>: VehicleTypeList                   |                |                                                                                                                                                                                             |
|-------------------------------------------------------|----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Types of vehicle. (SOURCE: ISO 3833:1977) |                |                                                                                                                                                                                             |
| Stereotypes: «CodeList»                               |                |                                                                                                                                                                                             |
| Tagged values:                                        |                | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleTypeList.xml</a> |
| Code (example)                                        | Value          | Definition                                                                                                                                                                                  |
| 6                                                     | bus            | Bus.                                                                                                                                                                                        |
| 11                                                    | carWithTrailer | Car towing a trailer.                                                                                                                                                                       |
|                                                       | ...            |                                                                                                                                                                                             |

[Table 40](#) defines the characteristics of the VehicleUsageList class.

Table 40 — VehicleUsageList Class

| Class <<CodeList>>: VehicleUsageList        |               |                                                                                                                                                                                               |
|---------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of usage type of vehicles. |               |                                                                                                                                                                                               |
| Stereotypes: «CodeList»                     |               |                                                                                                                                                                                               |
| Tagged values:                              |               | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleUsageList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/VehicleUsageList.xml</a> |
| Code (example)                              | Value         | Definition                                                                                                                                                                                    |
| 0                                           | agricultural  | Vehicle used for agricultural purposes.                                                                                                                                                       |
| 2                                           | cityLogistics | Vehicles that are used to deliver goods in a city area.                                                                                                                                       |
|                                             | ...           |                                                                                                                                                                                               |

[Table 41](#) defines the characteristics of the WinterEquipmentManagementTypeList class.

Table 41 — WinterEquipmentManagementTypeList Class

| Class <<CodeList>>: WinterEquipmentManagementTypeList             |                                |                                                                                                                                                                                                                                 |
|-------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Instructions relating to the use of winter equipment. |                                |                                                                                                                                                                                                                                 |
| Stereotypes: «CodeList»                                           |                                |                                                                                                                                                                                                                                 |
| Tagged values:                                                    |                                | asDictionary = true<br>codeList = <a href="https://standards.iso.org/iso/ts/22726/-2/ed-1/en/WinterEquipmentManagementTypeList.xml">https://standards.iso.org/iso/ts/22726/-2/ed-1/en/WinterEquipmentManagementTypeList.xml</a> |
| Code (example)                                                    | Value                          | Definition                                                                                                                                                                                                                      |
| 0                                                                 | doNotUseStudTyres              | Do not use stud tyres.                                                                                                                                                                                                          |
| 4                                                                 | winterEquipmentOnBoardRequired | The carrying of winter equipment (snow chains and/or snow tyres) is required.                                                                                                                                                   |
|                                                                   | ...                            |                                                                                                                                                                                                                                 |

## 7.5 "DataManagement" package

### 7.5.1 Overall presentation

The DataManagement package shall contain a collection of information describing data types used for data management of situation elements in this document.

[Figure 5](#) pictures the classes of the package including the relationships between them.



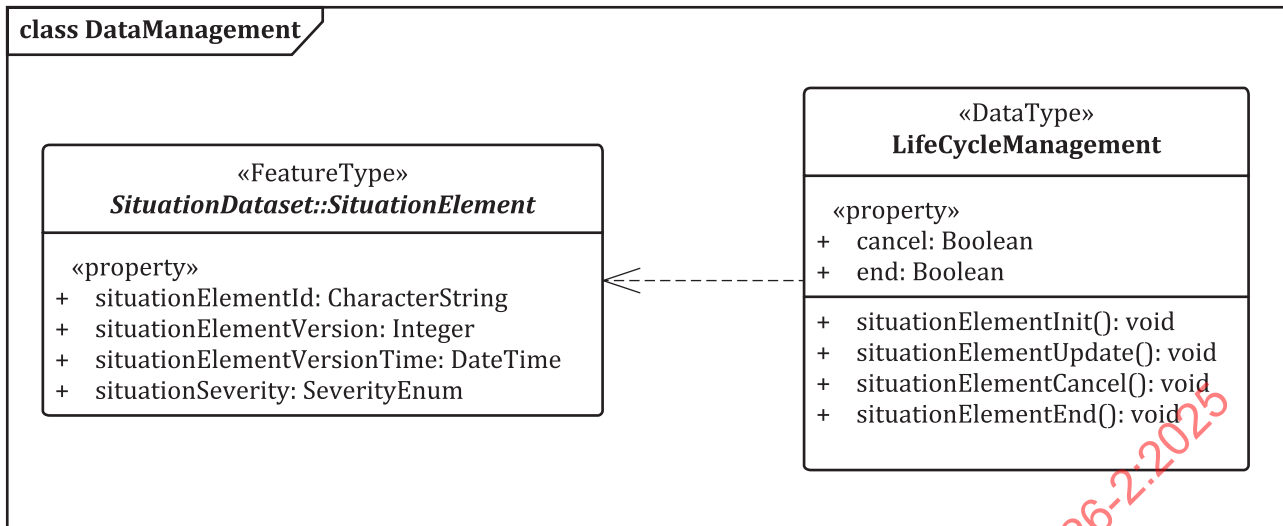


Figure 5 — The "DataManagement" class diagram

### 7.5.2 Class definition

The tables below define the different classes used in this package.

[Table 42](#) defines the characteristics of the LifeCycleManagement class.

Table 42 — LifeCycleManagement Class

| Class <<DataType>>: LifeCycleManagement                                                 |               |                                                                                                                                  |
|-----------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------|
| Definition: Information relating to the life cycle management of the situation element. |               |                                                                                                                                  |
| Subtype of:                                                                             |               |                                                                                                                                  |
| Stereotypes: «DataType»                                                                 |               |                                                                                                                                  |
| <b>Attribute: cancel</b>                                                                |               |                                                                                                                                  |
|                                                                                         | Definition:   | Indication that all the element information previously sent is not considered valid, due to an incorrect content (cancellation). |
|                                                                                         | Value type:   | Boolean                                                                                                                          |
|                                                                                         | Multiplicity: |                                                                                                                                  |
| <b>Attribute: end</b>                                                                   |               |                                                                                                                                  |
|                                                                                         | Definition:   | A binary attribute specifying whether the situation element is finished (true) or not (false).                                   |
|                                                                                         | Value type:   | Boolean                                                                                                                          |
|                                                                                         | Multiplicity: |                                                                                                                                  |

## 7.6 "DataQuality" package

### 7.6.1 Overall presentation

The DataQuality package shall contain a collection of information describing data types used for qualifying data quality in this document.

[Figure 6](#) pictures the classes of the package including the relationships between them.

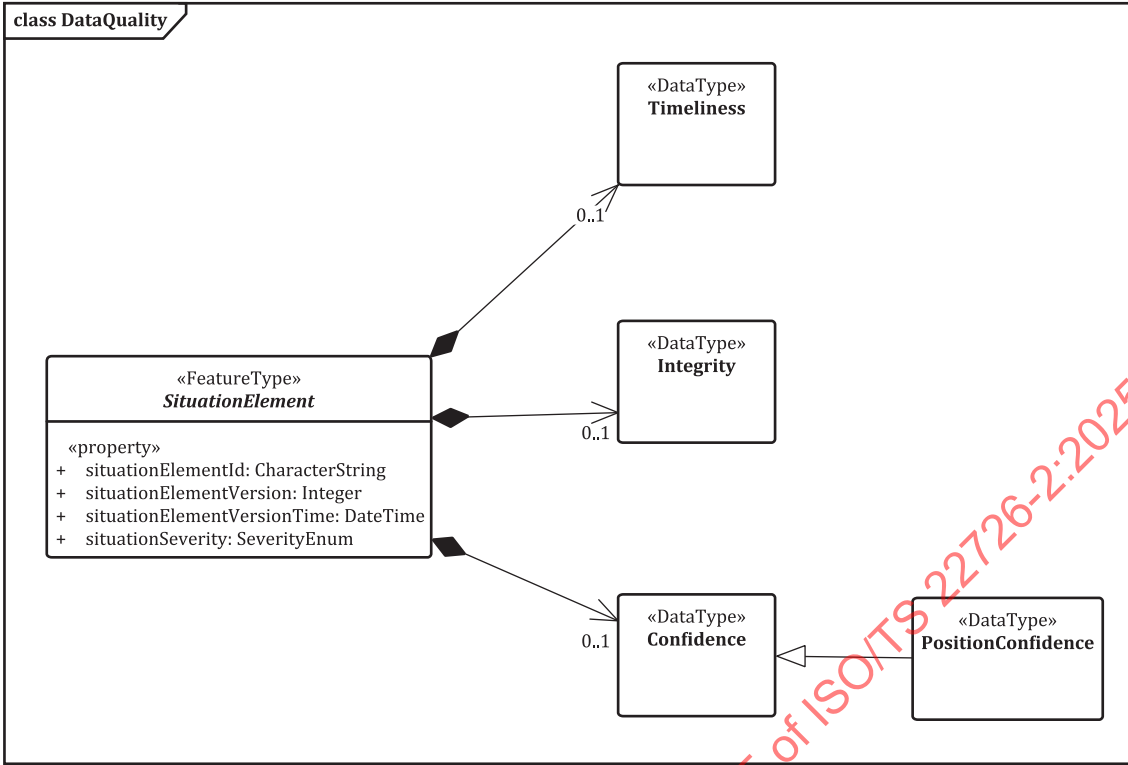


Figure 6 — The "DataQuality" class diagram

7.6.2 Class definition

The tables below define the different classes used in this package.

[Table 43](#) defines the characteristics of the Confidence class.

Table 43 — Confidence Class

|                                                                                                      |
|------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Confidence</b>                                                    |
| Definition: Indication of the correctness and accuracy of the attributes of the related information. |
| Subtype of:                                                                                          |
| Stereotypes: «DataType»                                                                              |

[Table 44](#) defines the characteristics of the Integrity class.

Table 44 — Integrity Class

|                                                                                              |
|----------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Integrity</b>                                             |
| Definition: Property that data have not been altered or destroyed in an unauthorized manner. |
| Subtype of:                                                                                  |
| Stereotypes: «DataType»                                                                      |

[Table 45](#) defines the characteristics of the Timeliness class.

Table 45 — Timeliness Class

|                                                                                                               |
|---------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Timeliness</b>                                                             |
| Definition: Degree to which information is delivered within time limits (adapted from ISO/IEC TS 25011:2017). |
| Subtype of:                                                                                                   |
| Stereotypes: «DataType»                                                                                       |

## 7.7 "DataTypes" package

### 7.7.1 Overall presentation

The DataTypes package shall contain a collection of information describing data types used throughout the generic model in this document.

Figure 7 pictures the classes of the package including the relationships between them.

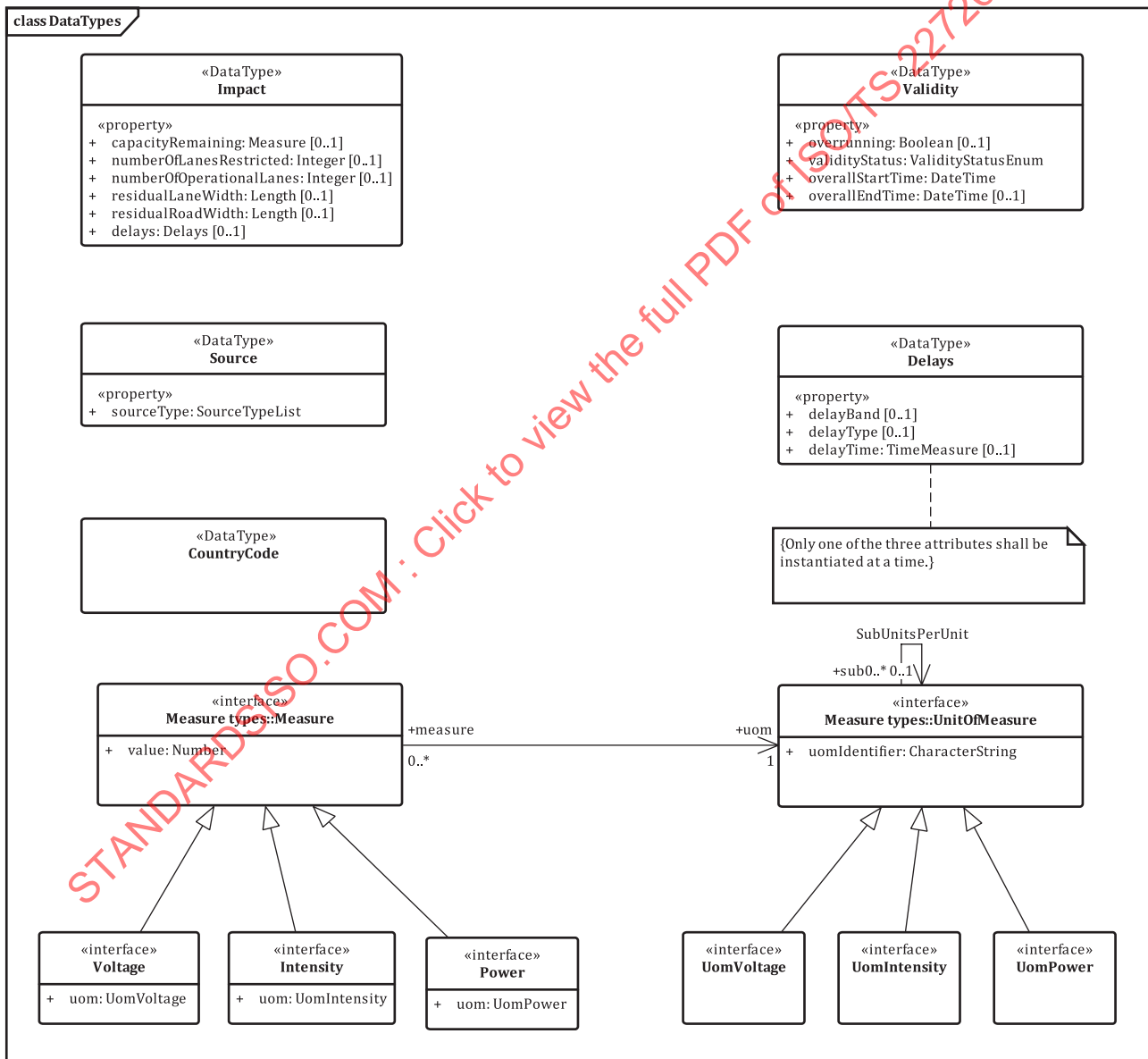


Figure 7 — The "DataTypes" class diagram

### 7.7.2 Class definition

The tables below define the different classes used in this package.

[Table 46](#) defines the characteristics of the CountryCode class.

**Table 46 — CountryCode Class**

|                                                         |
|---------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: CountryCode</b>      |
| Definition: ISO 3166-1 alpha-2 two-letter country code. |
| Subtype of:                                             |
| Stereotypes: «DataType»                                 |

[Table 47](#) defines the characteristics of the Delays class.

**Table 47 — Delays Class**

|                                                                                                                                                                                                |               |                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Delays</b>                                                                                                                                                  |               |                                                                                                                                                 |
| Definition: The details of the delays being caused by the situation element defined in the situation element. It is recommended to only use one of the optional attributes to avoid confusion. |               |                                                                                                                                                 |
| Subtype of:                                                                                                                                                                                    |               |                                                                                                                                                 |
| Stereotypes: «DataType»                                                                                                                                                                        |               |                                                                                                                                                 |
| <b>Attribute: delayBand</b>                                                                                                                                                                    |               |                                                                                                                                                 |
|                                                                                                                                                                                                | Definition:   | The time band within which the additional travel time due to adverse travel conditions of any kind falls, when compared to "normal conditions". |
|                                                                                                                                                                                                | Value type:   |                                                                                                                                                 |
|                                                                                                                                                                                                | Multiplicity: | [0..1]                                                                                                                                          |
| <b>Attribute: delayType</b>                                                                                                                                                                    |               |                                                                                                                                                 |
|                                                                                                                                                                                                | Definition:   | Coarse classification of the delay.                                                                                                             |
|                                                                                                                                                                                                | Value type:   |                                                                                                                                                 |
|                                                                                                                                                                                                | Multiplicity: | [0..1]                                                                                                                                          |
| <b>Attribute: delayTime</b>                                                                                                                                                                    |               |                                                                                                                                                 |
|                                                                                                                                                                                                | Definition:   | The value of the additional travel time due to adverse travel conditions of any kind, when compared to "normal conditions".                     |
|                                                                                                                                                                                                | Value type:   | TimeMeasure                                                                                                                                     |
|                                                                                                                                                                                                | Multiplicity: | [0..1]                                                                                                                                          |

[Table 48](#) defines the characteristics of the Impact class.

**Table 48 — Impact Class**

|                                                                                                                                          |               |                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Impact</b>                                                                                            |               |                                                                                                                                                                                                                                                                 |
| Definition: An assessment of the impact that an event or operator action defined by the situation element has on the driving conditions. |               |                                                                                                                                                                                                                                                                 |
| Subtype of:                                                                                                                              |               |                                                                                                                                                                                                                                                                 |
| Stereotypes: «DataType»                                                                                                                  |               |                                                                                                                                                                                                                                                                 |
| <b>Attribute: capacityRemaining</b>                                                                                                      |               |                                                                                                                                                                                                                                                                 |
|                                                                                                                                          | Definition:   | The ratio of current capacity to the normal (free flow) road capacity in the defined direction, expressed as a percentage. Capacity is the maximum number of vehicles that can pass a specified point on the road, in unit time given the specified conditions. |
|                                                                                                                                          | Value type:   | Measure                                                                                                                                                                                                                                                         |
|                                                                                                                                          | Multiplicity: | [0..1]                                                                                                                                                                                                                                                          |

Table 48 (continued)

|                                            |               |                                                                                                                                                                                                                                        |
|--------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Attribute: numberOfLanesRestricted</b>  |               |                                                                                                                                                                                                                                        |
|                                            | Definition:   | The number of normally usable lanes on the carriageway which are now restricted either fully or partially (this can include the hard shoulder if it is normally available for operational use, e.g. in hard shoulder running schemes). |
|                                            | Value type:   | Integer                                                                                                                                                                                                                                |
|                                            | Multiplicity: | [0..1]                                                                                                                                                                                                                                 |
| <b>Attribute: numberOfOperationalLanes</b> |               |                                                                                                                                                                                                                                        |
|                                            | Definition:   | The number of usable lanes in the specified direction which remain fully operational (this can include the hard shoulder if it is being used as an operational lane).                                                                  |
|                                            | Value type:   | Integer                                                                                                                                                                                                                                |
|                                            | Multiplicity: | [0..1]                                                                                                                                                                                                                                 |
| <b>Attribute: residualLaneWidth</b>        |               |                                                                                                                                                                                                                                        |
|                                            | Definition:   | The width of lanes after any lane narrowing.                                                                                                                                                                                           |
|                                            | Value type:   | Length                                                                                                                                                                                                                                 |
|                                            | Multiplicity: | [0..1]                                                                                                                                                                                                                                 |
| <b>Attribute: residualRoadWidth</b>        |               |                                                                                                                                                                                                                                        |
|                                            | Definition:   | The total width of the combined operational lanes in the specified direction.                                                                                                                                                          |
|                                            | Value type:   | Length                                                                                                                                                                                                                                 |
|                                            | Multiplicity: | [0..1]                                                                                                                                                                                                                                 |
| <b>Attribute: delays</b>                   |               |                                                                                                                                                                                                                                        |
|                                            | Definition:   | The details of the delays being caused by the situation element defined in the situation record. It is recommended to only use one of the optional attributes to avoid confusion.                                                      |
|                                            | Value type:   | Delays                                                                                                                                                                                                                                 |
|                                            | Multiplicity: | [0..1]                                                                                                                                                                                                                                 |

[Table 49](#) defines the characteristics of the Source class.

Table 49 — Source Class

|                                                                            |               |                                                                                                                                                                     |
|----------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Source</b>                              |               |                                                                                                                                                                     |
| Definition: Details of the source from which the information was obtained. |               |                                                                                                                                                                     |
| Subtype of:                                                                |               |                                                                                                                                                                     |
| Stereotypes: «DataType»                                                    |               |                                                                                                                                                                     |
| <b>Attribute: sourceType</b>                                               |               |                                                                                                                                                                     |
|                                                                            | Definition:   | Information about the technology used for measuring the data or the method used for obtaining qualitative descriptions relating to this version of the information. |
|                                                                            | Value type:   | SourceTypeList                                                                                                                                                      |
|                                                                            | Multiplicity: |                                                                                                                                                                     |

[Table 50](#) defines the characteristics of the Validity class.

Table 50 — Validity Class

|                                                                                                                                 |               |                                                                                                                                                                                                 |
|---------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Validity</b>                                                                                 |               |                                                                                                                                                                                                 |
| Definition: Specification of validity, either explicitly or by a validity time period specification which can be discontinuous. |               |                                                                                                                                                                                                 |
| Subtype of:                                                                                                                     |               |                                                                                                                                                                                                 |
| Stereotypes: «DataType»                                                                                                         |               |                                                                                                                                                                                                 |
| <b>Attribute: overrunning</b>                                                                                                   |               |                                                                                                                                                                                                 |
|                                                                                                                                 | Definition:   | The activity or action described by the situation element is still in progress, overrunning its planned duration as indicated in a previous version of this element or even in current version. |
|                                                                                                                                 | Value type:   | Boolean                                                                                                                                                                                         |
|                                                                                                                                 | Multiplicity: | [0..1]                                                                                                                                                                                          |
| <b>Attribute: validityStatus</b>                                                                                                |               |                                                                                                                                                                                                 |
|                                                                                                                                 | Definition:   | Specification of validity, either explicitly overriding the validity time specification or confirming it.                                                                                       |
|                                                                                                                                 | Value type:   | ValidityStatusEnum                                                                                                                                                                              |
|                                                                                                                                 | Multiplicity: |                                                                                                                                                                                                 |
| <b>Attribute: overallStartTime</b>                                                                                              |               |                                                                                                                                                                                                 |
|                                                                                                                                 | Definition:   | Start of bounding period of validity defined by date and time.                                                                                                                                  |
|                                                                                                                                 | Value type:   | DateTime                                                                                                                                                                                        |
|                                                                                                                                 | Multiplicity: |                                                                                                                                                                                                 |
| <b>Attribute: overallEndTime</b>                                                                                                |               |                                                                                                                                                                                                 |
|                                                                                                                                 | Definition:   | End of bounding period of validity defined by date and time.                                                                                                                                    |
|                                                                                                                                 | Value type:   | DateTime                                                                                                                                                                                        |
|                                                                                                                                 | Multiplicity: | [0..1]                                                                                                                                                                                          |

[Table 51](#) defines the characteristics of the Intensity class.

Table 51 — Intensity Class

|                                                                                                                                       |               |                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|
| <b>Class: Intensity</b>                                                                                                               |               |                                                                               |
| Definition: Measurement of a stream of charged particles, such as electrons or ions, moving through an electrical conductor or space. |               |                                                                               |
| Abstract: Abstract                                                                                                                    |               |                                                                               |
| Subtype of: Measure                                                                                                                   |               |                                                                               |
| Stereotypes:                                                                                                                          |               |                                                                               |
| <b>Attribute: uom</b>                                                                                                                 |               |                                                                               |
|                                                                                                                                       | Definition:   | Units for measuring electric intensity in this measure (generally in ampere). |
|                                                                                                                                       | Value type:   | UomIntensity                                                                  |
|                                                                                                                                       | Multiplicity: |                                                                               |

[Table 52](#) defines the characteristics of the Power class.

Table 52 — Power Class

|                                                                      |               |                                                     |
|----------------------------------------------------------------------|---------------|-----------------------------------------------------|
| <b>Class: Power</b>                                                  |               |                                                     |
| Definition: Amount of energy transferred or converted per unit time. |               |                                                     |
| Abstract: Abstract                                                   |               |                                                     |
| Subtype of: Measure                                                  |               |                                                     |
| Stereotypes:                                                         |               |                                                     |
| <b>Attribute: uom</b>                                                |               |                                                     |
|                                                                      | Definition:   | Units for measuring electric power in this measure. |
|                                                                      | Value type:   | UomPower                                            |
|                                                                      | Multiplicity: |                                                     |

[Table 53](#) defines the characteristics of the UomIntensity class.

Table 53 — UomIntensity Class

|                                                                |  |  |
|----------------------------------------------------------------|--|--|
| <b>Class: UomIntensity</b>                                     |  |  |
| Definition: Defines the unit for measuring intensity of energy |  |  |
| Abstract: Abstract                                             |  |  |
| Subtype of: UnitOfMeasure                                      |  |  |
| Stereotypes:                                                   |  |  |

[Table 54](#) defines the characteristics of the UomPower class.

Table 54 — UomPower Class

|                                                                 |  |  |
|-----------------------------------------------------------------|--|--|
| <b>Class: UomPower</b>                                          |  |  |
| Definition: Defines the unit for measuring the amount of energy |  |  |
| Abstract: Abstract                                              |  |  |
| Subtype of: UnitOfMeasure                                       |  |  |
| Stereotypes:                                                    |  |  |

[Table 55](#) defines the characteristics of the UomVoltage class.

Table 55 — UomVoltage Class

|                                                                   |  |  |
|-------------------------------------------------------------------|--|--|
| <b>Class: UomVoltage</b>                                          |  |  |
| Definition: Defines the unit for measuring voltage of electricity |  |  |
| Abstract: Abstract                                                |  |  |
| Subtype of: UnitOfMeasure                                         |  |  |
| Stereotypes:                                                      |  |  |

[Table 56](#) defines the characteristics of the Voltage class.

Table 56 — Voltage Class

|                                                                                                                                    |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class: Voltage</b>                                                                                                              |  |  |
| Definition: The difference in electric potential between two points. Also named electric tension or electric potential difference. |  |  |
| Abstract: Abstract                                                                                                                 |  |  |
| Subtype of: Measure                                                                                                                |  |  |
| Stereotypes:                                                                                                                       |  |  |
| <b>Attribute: uom</b>                                                                                                              |  |  |

Table 56 (continued)

|  |               |                                                                           |
|--|---------------|---------------------------------------------------------------------------|
|  | Definition:   | Units for measuring electric tension in this measure (generally in volt). |
|  | Value type:   | UomVoltage                                                                |
|  | Multiplicity: |                                                                           |

## 7.8 "VehicleCharacteristics" package

### 7.8.1 Overall presentation

The package "VehicleCharacteristics" shall comprise a sub-model for defining the characteristics of vehicles. The information that is modelled in the "VehicleCharacteristics" package shall identify a set of vehicle characteristics, some of whose values can be specified using comparative operators (e.g. greater than 'x' but less than 'y').

Figure 8 pictures the classes of the package including the relationships between them.

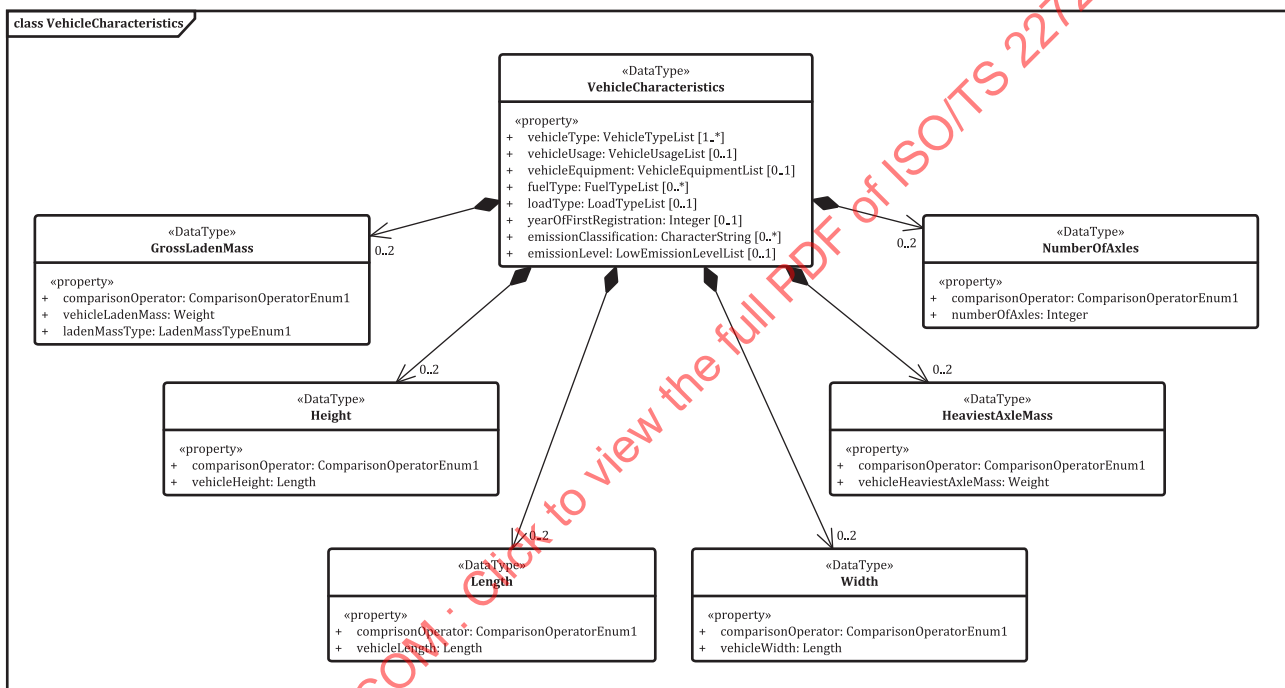


Figure 8 — The "VehicleCharacteristics" class diagram

### 7.8.2 Class definition

The tables below define the different classes used in this package.

Table 57 defines the characteristics of the GrossLadenMass class.

Table 57 — GrossLadenMass Class

|                                                           |             |                                                                             |
|-----------------------------------------------------------|-------------|-----------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: GrossLadenMass</b>     |             |                                                                             |
| Definition: Gross laden mass characteristic of a vehicle. |             |                                                                             |
| Subtype of:                                               |             |                                                                             |
| Stereotypes: «DataType»                                   |             |                                                                             |
| <b>Attribute: comparisonOperator</b>                      |             |                                                                             |
|                                                           | Definition: | The operator to be used in the vehicle characteristic comparison operation. |



**Table 57** (continued)

|                                    |               |                                                                           |
|------------------------------------|---------------|---------------------------------------------------------------------------|
|                                    | Value type:   | ComparisonOperatorEnum1                                                   |
|                                    | Multiplicity: |                                                                           |
| <b>Attribute: vehicleLadenMass</b> |               |                                                                           |
|                                    | Definition:   | The gross laden mass of the vehicle and its load, including any trailers. |
|                                    | Value type:   | Weight                                                                    |
|                                    | Multiplicity: |                                                                           |
| <b>Attribute: ladenMassType</b>    |               |                                                                           |
|                                    | Definition:   | The meaning of the weight value                                           |
|                                    | Value type:   | LadenMassTypeEnum1                                                        |
|                                    | Multiplicity: |                                                                           |

[Table 58](#) defines the characteristics of the HeaviestAxleMass class.

**Table 58 — HeaviestAxleMass Class**

|                                                                            |               |                                                                             |
|----------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: HeaviestAxleMass</b>                    |               |                                                                             |
| Definition: Laden mass characteristic of the heaviest axle on the vehicle. |               |                                                                             |
| Subtype of:                                                                |               |                                                                             |
| Stereotypes: «DataType»                                                    |               |                                                                             |
| <b>Attribute: comparisonOperator</b>                                       |               |                                                                             |
|                                                                            | Definition:   | The operator to be used in the vehicle characteristic comparison operation. |
|                                                                            | Value type:   | ComparisonOperatorEnum1                                                     |
|                                                                            | Multiplicity: |                                                                             |
| <b>Attribute: vehicleHeaviestAxleMass</b>                                  |               |                                                                             |
|                                                                            | Definition:   | The mass of the heaviest axle on the vehicle.                               |
|                                                                            | Value type:   | Weight                                                                      |
|                                                                            | Multiplicity: |                                                                             |

[Table 59](#) defines the characteristics of the Height class.

**Table 59 — Height Class**

|                                                 |               |                                                                                                     |
|-------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Height</b>   |               |                                                                                                     |
| Definition: Height characteristic of a vehicle. |               |                                                                                                     |
| Subtype of:                                     |               |                                                                                                     |
| Stereotypes: «DataType»                         |               |                                                                                                     |
| <b>Attribute: comparisonOperator</b>            |               |                                                                                                     |
|                                                 | Definition:   | The operator to be used in the vehicle characteristic comparison operation.                         |
|                                                 | Value type:   | ComparisonOperatorEnum1                                                                             |
|                                                 | Multiplicity: |                                                                                                     |
| <b>Attribute: vehicleHeight</b>                 |               |                                                                                                     |
|                                                 | Definition:   | The height of the highest part, excluding aerials, of an individual vehicle above the road surface. |
|                                                 | Value type:   | Length                                                                                              |
|                                                 | Multiplicity: |                                                                                                     |

[Table 60](#) defines the characteristics of the Length class.

Table 60 — Length Class

|                                                 |               |                                                                                                                                                    |
|-------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Length</b>   |               |                                                                                                                                                    |
| Definition: Length characteristic of a vehicle. |               |                                                                                                                                                    |
| Subtype of:                                     |               |                                                                                                                                                    |
| Stereotypes: «DataType»                         |               |                                                                                                                                                    |
| <b>Attribute: comparisonOperator</b>            |               |                                                                                                                                                    |
|                                                 | Definition:   | The operator to be used in the vehicle characteristic comparison operation.                                                                        |
|                                                 | Value type:   | ComparisonOperatorEnum1                                                                                                                            |
|                                                 | Multiplicity: |                                                                                                                                                    |
| <b>Attribute: vehicleLength</b>                 |               |                                                                                                                                                    |
|                                                 | Definition:   | The overall distance between the front and back of an individual vehicle, including the length of any trailers, couplings, embedded features, etc. |
|                                                 | Value type:   | Length                                                                                                                                             |
|                                                 | Multiplicity: |                                                                                                                                                    |

[Table 61](#) defines the characteristics of the NumberOfAxles class.

Table 61 — NumberOfAxles Class

|                                                          |               |                                                                             |
|----------------------------------------------------------|---------------|-----------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: NumberOfAxles</b>     |               |                                                                             |
| Definition: Number of axles characteristic of a vehicle. |               |                                                                             |
| Subtype of:                                              |               |                                                                             |
| Stereotypes: «DataType»                                  |               |                                                                             |
| <b>Attribute: comparisonOperator</b>                     |               |                                                                             |
|                                                          | Definition:   | The operator to be used in the vehicle characteristic comparison operation. |
|                                                          | Value type:   | ComparisonOperatorEnum1                                                     |
|                                                          | Multiplicity: |                                                                             |
| <b>Attribute: numberOfAxles</b>                          |               |                                                                             |
|                                                          | Definition:   | The total number of axles of an individual vehicle.                         |
|                                                          | Value type:   | Integer                                                                     |
|                                                          | Multiplicity: |                                                                             |

[Table 62](#) defines the characteristics of the VehicleCharacteristics class.

Table 62 — VehicleCharacteristics Class

|                                                                                                  |               |                                                                                     |
|--------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: VehicleCharacteristics</b>                                    |               |                                                                                     |
| Definition: The characteristics of a vehicle, e.g. lorry of gross weight greater than 30 tonnes. |               |                                                                                     |
| Subtype of:                                                                                      |               |                                                                                     |
| Stereotypes: «DataType»                                                                          |               |                                                                                     |
| <b>Attribute: vehicleType</b>                                                                    |               |                                                                                     |
|                                                                                                  | Definition:   | Vehicle type.                                                                       |
|                                                                                                  | Value type:   | VehicleTypeList                                                                     |
|                                                                                                  | Multiplicity: | [1..*]                                                                              |
| <b>Attribute: vehicleUsage</b>                                                                   |               |                                                                                     |
|                                                                                                  | Definition:   | The type of usage of the vehicle (i.e. for what purpose is the vehicle being used). |
|                                                                                                  | Value type:   | VehicleUsageList                                                                    |
|                                                                                                  | Multiplicity: | [0..1]                                                                              |

Table 62 (continued)

|                                           |               |                                                                                              |
|-------------------------------------------|---------------|----------------------------------------------------------------------------------------------|
| <b>Attribute: vehicleEquipment</b>        |               |                                                                                              |
|                                           | Definition:   | The type of equipment in use or on board the vehicle.                                        |
|                                           | Value type:   | VehicleEquipmentList                                                                         |
|                                           | Multiplicity: | [0..1]                                                                                       |
| <b>Attribute: fuelType</b>                |               |                                                                                              |
|                                           | Definition:   | The types of fuel used by the vehicle.                                                       |
|                                           | Value type:   | FuelTypeList                                                                                 |
|                                           | Multiplicity: | [0..*]                                                                                       |
| <b>Attribute: loadType</b>                |               |                                                                                              |
|                                           | Definition:   | The type of load carried by the vehicle, especially in respect of dangerous/hazardous loads. |
|                                           | Value type:   | LoadTypeList                                                                                 |
|                                           | Multiplicity: | [0..1]                                                                                       |
| <b>Attribute: yearOfFirstRegistration</b> |               |                                                                                              |
|                                           | Definition:   | Year of first registration of the vehicle.                                                   |
|                                           | Value type:   | Integer                                                                                      |
|                                           | Multiplicity: | [0..1]                                                                                       |
| <b>Attribute: emissionClassification</b>  |               |                                                                                              |
|                                           | Definition:   | Classification value for the vehicle emission.                                               |
|                                           | Value type:   | CharacterString                                                                              |
|                                           | Multiplicity: | [0..*]                                                                                       |
| <b>Attribute: emissionLevel</b>           |               |                                                                                              |
|                                           | Definition:   | The low emission level of a vehicle.                                                         |
|                                           | Value type:   | LowEmissionLevelList                                                                         |
|                                           | Multiplicity: | [0..1]                                                                                       |

Table 63 defines the characteristics of the Width class.

Table 63 — Width Class

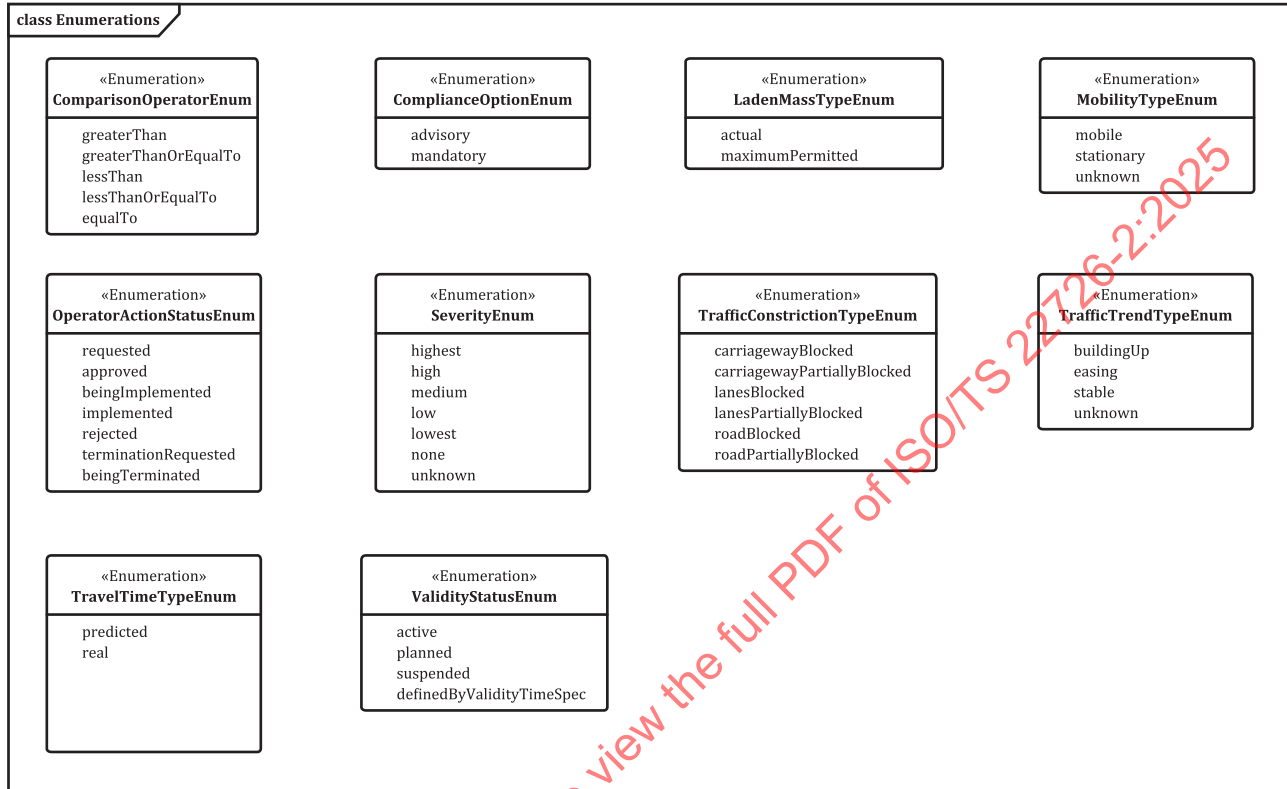
|                                                |               |                                                                                             |
|------------------------------------------------|---------------|---------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Width</b>   |               |                                                                                             |
| Definition: Width characteristic of a vehicle. |               |                                                                                             |
| Subtype of:                                    |               |                                                                                             |
| Stereotypes: «DataType»                        |               |                                                                                             |
| <b>Attribute: comparisonOperator</b>           |               |                                                                                             |
|                                                | Definition:   | The operator to be used in the vehicle characteristic comparison operation.                 |
|                                                | Value type:   | ComparisonOperatorEnum1                                                                     |
|                                                | Multiplicity: |                                                                                             |
| <b>Attribute: vehicleWidth</b>                 |               |                                                                                             |
|                                                | Definition:   | The maximum width of an individual vehicle, including any features embedded or fixed on it. |
|                                                | Value type:   | Length                                                                                      |
|                                                | Multiplicity: |                                                                                             |

## 7.9 "Enumerations" package

### 7.9.1 Overall presentation

A collection of lists of enumeration values used throughout the generic model in this document.

[Figure 9](#) pictures the classes of the package including the relationships between them.



**Figure 9 — The "Enumerations" class diagram**

### 7.9.2 Class definition

The tables below define the different classes used in this package.

[Table 64](#) defines the characteristics of the ComparisonOperatorEnum class.

**Table 64 — ComparisonOperatorEnum Class**

| Class <<Enumeration>>: ComparisonOperatorEnum |                      |                                                            |
|-----------------------------------------------|----------------------|------------------------------------------------------------|
| Definition: Logical comparison operations.    |                      |                                                            |
| Stereotypes: «Enumeration»                    |                      |                                                            |
| Code                                          | Value                | Definition                                                 |
|                                               | greaterThan          | Logical comparison operator of "greater than".             |
|                                               | greaterThanOrEqualTo | Logical comparison operator of "greater than or equal to". |
|                                               | lessThan             | Logical comparison operator of "less than".                |
|                                               | lessThanOrEqualTo    | Logical comparison operator of "less than or equal to".    |
|                                               | equalTo              | Logical comparison operator of "equal to".                 |

[Table 65](#) defines the characteristics of the ComplianceOptionEnum class.

Table 65 — ComplianceOptionEnum Class

| Class <<Enumeration>>: ComplianceOptionEnum |           |                       |
|---------------------------------------------|-----------|-----------------------|
| Definition: Types of compliance.            |           |                       |
| Stereotypes: «Enumeration»                  |           |                       |
| Code                                        | Value     | Definition            |
|                                             | Advisory  | Advisory compliance.  |
|                                             | Mandatory | Mandatory compliance. |

[Table 66](#) defines the characteristics of the LadenMassTypeEnum class.

Table 66 — LadenMassTypeEnum Class

| Class <<Enumeration>>: LadenMassTypeEnum                                   |                  |                                                                   |
|----------------------------------------------------------------------------|------------------|-------------------------------------------------------------------|
| Definition: Type of mass - describing the meaning of a vehicle mass value. |                  |                                                                   |
| Stereotypes: «Enumeration»                                                 |                  |                                                                   |
| Code                                                                       | Value            | Definition                                                        |
|                                                                            | actual           | The laden mass is the actual laden mass for a vehicle.            |
|                                                                            | maximumPermitted | The laden mass is the maximum permitted laden mass for a vehicle. |

[Table 67](#) defines the characteristics of the MobilityTypeEnum class.

Table 67 — MobilityTypeEnum Class

| Class <<Enumeration>>: MobilityTypeEnum                        |            |                                                                  |
|----------------------------------------------------------------|------------|------------------------------------------------------------------|
| Definition: Types of mobility relating to a situation element. |            |                                                                  |
| Stereotypes: «Enumeration»                                     |            |                                                                  |
| Code                                                           | Value      | Definition                                                       |
|                                                                | mobile     | The described element of a situation is moving.                  |
|                                                                | stationary | The described element of a situation is stationary.              |
|                                                                | unknown    | The mobility of the described element of a situation is unknown. |

[Table 68](#) defines the characteristics of the OperatorActionStatusEnum class.

Table 68 — OperatorActionStatusEnum Class

| Class <<Enumeration>>: OperatorActionStatusEnum                |                  |                                                                                                                                                                                  |
|----------------------------------------------------------------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of statuses associated with operator actions. |                  |                                                                                                                                                                                  |
| Stereotypes: «Enumeration»                                     |                  |                                                                                                                                                                                  |
| Code                                                           | Value            | Definition                                                                                                                                                                       |
|                                                                | requested        | A request, either internal or external, has been received to implement an action. It has neither been approved nor has any activity yet been undertaken to implement the action. |
|                                                                | approved         | The action has been approved by the recipient of the request but activity to implement the action has not yet commenced.                                                         |
|                                                                | beingImplemented | The action has been approved by the recipient of the request but activity to implement the action has not yet commenced.                                                         |
|                                                                | implemented      | The action is fully implemented.                                                                                                                                                 |

**Table 68** (continued)

|  |                      |                                                                                                                                                                                                                                                                |
|--|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | rejected             | The action has been rejected by the recipient of the request and hence is not implemented.                                                                                                                                                                     |
|  | terminationRequested | A request, either internal or external, has been received to terminate the action, but activity to terminate the action has not yet commenced.                                                                                                                 |
|  | beingTerminated      | The action is in the process of being terminated either because the action has reached the end of its validity period or because new circumstances have arisen and its termination has been requested, e.g. because of a traffic jam on the alternative route. |

[Table 69](#) defines the characteristics of the SeverityEnum class.

**Table 69 — SeverityEnum Class**

| <b>Class &lt;&lt;Enumeration&gt;&gt;: SeverityEnum</b> |         |                                                            |
|--------------------------------------------------------|---------|------------------------------------------------------------|
| Definition: Levels of severity.                        |         |                                                            |
| Stereotypes: «Enumeration»                             |         |                                                            |
| Code                                                   | Value   | Definition                                                 |
|                                                        | highest | Perceived by supplier as being of the highest level.       |
|                                                        | high    | Perceived by supplier as being of a high level.            |
|                                                        | medium  | Perceived by supplier as being of a medium level.          |
|                                                        | low     | Perceived by supplier as being of a low level.             |
|                                                        | lowest  | Perceived by supplier as being of the lowest level.        |
|                                                        | none    | Perceived by supplier as having a severity rating of none. |
|                                                        | unknown | Perceived by supplier as being of an unknown level.        |

[Table 70](#) defines the characteristics of the TrafficConstrictionTypeEnum class.

**Table 70 — TrafficConstrictionTypeEnum Class**

| <b>Class &lt;&lt;Enumeration&gt;&gt;: TrafficConstrictionTypeEnum</b>                                 |                             |                                                                                                 |
|-------------------------------------------------------------------------------------------------------|-----------------------------|-------------------------------------------------------------------------------------------------|
| Definition: The type of constriction to which traffic is subjected as a result of an unplanned event. |                             |                                                                                                 |
| Stereotypes: «Enumeration»                                                                            |                             |                                                                                                 |
| Code                                                                                                  | Value                       | Definition                                                                                      |
|                                                                                                       | carriagewayBlocked          | The carriageway is totally obstructed in the specified direction due to an unplanned event.     |
|                                                                                                       | carriagewayPartiallyBlocked | The carriageway is partially obstructed in the specified direction due to an unplanned event.   |
|                                                                                                       | lanesBlocked                | One or more lanes is totally obstructed in the specified direction due to an unplanned event.   |
|                                                                                                       | lanesPartiallyBlocked       | One or more lanes is partially obstructed in the specified direction due to an unplanned event. |
|                                                                                                       | roadBlocked                 | The road is totally obstructed, for all vehicles in both directions, due to an unplanned event. |
|                                                                                                       | roadPartiallyBlocked        | The road is partially obstructed in both directions due to an unplanned event.                  |

[Table 71](#) defines the characteristics of the TrafficTrendTypeEnum class.

**Table 71 — TrafficTrendTypeEnum Class**

| Class <<Enumeration>>: TrafficTrendTypeEnum                                                                    |            |                                                                                                              |
|----------------------------------------------------------------------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------|
| Definition: A characterization of the trend in the traffic conditions at the specified location and direction. |            |                                                                                                              |
| Stereotypes: «Enumeration»                                                                                     |            |                                                                                                              |
| Code                                                                                                           | Value      | Definition                                                                                                   |
|                                                                                                                | buildingUp | Traffic conditions are changing from free-flow to heavy or slow service levels. Queues can also be expected. |
|                                                                                                                | easing     | Traffic conditions are changing from heavy or slow service levels to free-flow.                              |
|                                                                                                                | stable     | Traffic conditions are currently stable.                                                                     |
|                                                                                                                | unknown    | The trend of traffic conditions is currently unknown.                                                        |

[Table 72](#) defines the characteristics of the TravelTimeTypeEnum class.

**Table 72 — TravelTimeTypeEnum Class**

| Class <<Enumeration>>: TravelTimeTypeEnum                                                                  |           |                                                                                                                                                    |
|------------------------------------------------------------------------------------------------------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: List of types of time needed to reach a given place, based on whether it is estimated or real. |           |                                                                                                                                                    |
| Stereotypes: «Enumeration»                                                                                 |           |                                                                                                                                                    |
| Code                                                                                                       | Value     | Definition                                                                                                                                         |
|                                                                                                            | predicted | Travel time is the output of a prediction, for example a blend of current and historical data, or a traffic flow model using current measurements. |
|                                                                                                            | real      | Travel time is the current one i.e. derived from instantaneous measurements.                                                                       |

[Table 73](#) defines the characteristics of the ValidityStatusEnum class.

**Table 73 — ValidityStatusEnum Class**

| Class <<Enumeration>>: ValidityStatusEnum                                                        |                            |                                                                                                                                                |
|--------------------------------------------------------------------------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: Values of validity status that can be assigned to a described event, action or item. |                            |                                                                                                                                                |
| Stereotypes: «Enumeration»                                                                       |                            |                                                                                                                                                |
| Code                                                                                             | Value                      | Definition                                                                                                                                     |
|                                                                                                  | active                     | The described event, action or item is currently active regardless of the definition of the validity time specification.                       |
|                                                                                                  | planned                    | The described event, action or item is currently planned regardless of the definition of the validity time specification.                      |
|                                                                                                  | suspended                  | The described event, action or item is currently suspended, that is inactive, regardless of the definition of the validity time specification. |
|                                                                                                  | definedByValidityTime-Spec | The validity status of the described event, action or item is in accordance with the definition of the validity time specification.            |

## 7.10 "LocationReference" package

### 7.10.1 Overall presentation

The LocationReference package shall contain a collection of data and information constructs for location referencing in the generic model for this document.

[Figure 10](#) pictures the classes of the package including the relationships between them.

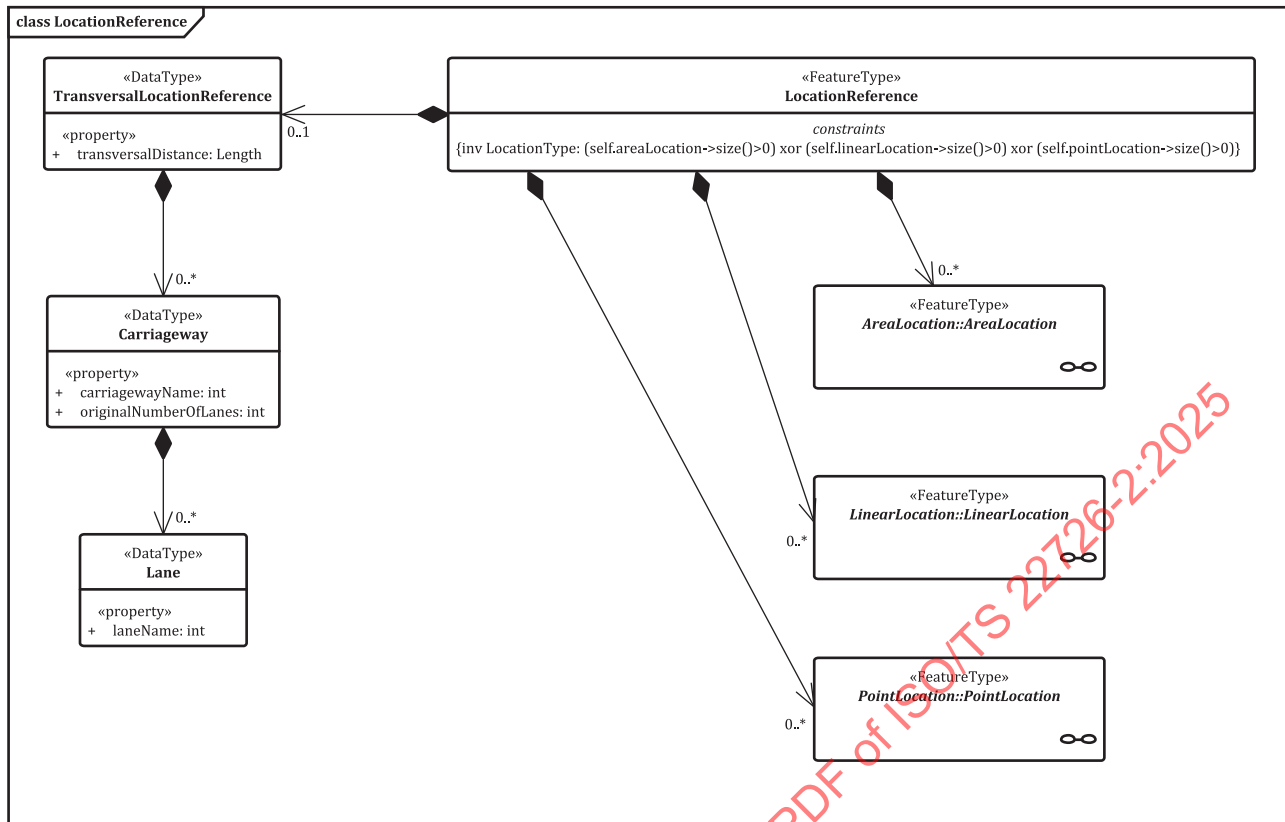


Figure 10 — The "LocationReference" class diagram

### 7.10.2 Class definition

The tables below define the different classes used in this package.

[Table 74](#) defines the characteristics of the Carriageway class.

Table 74 — Carriageway Class

| Class <<DataType>>: Carriageway                                                                                                                  |               |     |
|--------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|
| Definition: A part of the road or highway which is constructed for vehicular use specifying its name and the number of available driveable lanes |               |     |
| Subtype of:                                                                                                                                      |               |     |
| Stereotypes: «DataType»                                                                                                                          |               |     |
| <b>Attribute: carriagewayName</b>                                                                                                                |               |     |
|                                                                                                                                                  | Definition:   |     |
|                                                                                                                                                  | Value type:   | int |
|                                                                                                                                                  | Multiplicity: |     |
| <b>Attribute: originalNumberOfLanes</b>                                                                                                          |               |     |
|                                                                                                                                                  | Definition:   |     |
|                                                                                                                                                  | Value type:   | int |
|                                                                                                                                                  | Multiplicity: |     |

[Table 75](#) defines the characteristics of the Lane class.



Table 75 — Lane Class

|                                                                                                                                       |               |     |
|---------------------------------------------------------------------------------------------------------------------------------------|---------------|-----|
| <b>Class &lt;&lt;DataType&gt;&gt;: Lane</b>                                                                                           |               |     |
| Definition: A strip of carriageway intended to accommodate a single line of moving vehicles, frequently defined by carriageway marks. |               |     |
| Subtype of:                                                                                                                           |               |     |
| Stereotypes: «DataType»                                                                                                               |               |     |
| <b>Attribute: laneName</b>                                                                                                            |               |     |
|                                                                                                                                       | Definition:   |     |
|                                                                                                                                       | Value type:   | int |
|                                                                                                                                       | Multiplicity: |     |

[Table 76](#) defines the characteristics of the LocationReference class.

Table 76 — LocationReference Class

|                                                                                                                                                                                                                                                                 |  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: LocationReference</b>                                                                                                                                                                                                     |  |  |
| Definition: Represents one or more physically separate locations. Multiple locations may be related, as in an itinerary or route, or may be unrelated. One location reference should not use multiple location objects to represent the same physical location. |  |  |
| Abstract:                                                                                                                                                                                                                                                       |  |  |
| Subtype of:                                                                                                                                                                                                                                                     |  |  |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                                      |  |  |
| Constraint on class: <<Invariant>>                                                                                                                                                                                                                              |  |  |
| Natural language: A location reference shall be of one and only one of the three types (point, linear or area).                                                                                                                                                 |  |  |
| OCL: inv LocationType: (self.areaLocation->size()>0) XOR (self.linearLocation->size()>0) XOR (self.pointLocation->size()>0)                                                                                                                                     |  |  |

[Table 77](#) defines the characteristics of the TransversalLocationReference class.

Table 77 — TransversalLocationReference Class

|                                                                                                             |               |                                                                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: TransversalLocationReference</b>                                         |               |                                                                                                                                                                                                                 |
| Definition: A collection of transversal positional information that improves the precision of the location. |               |                                                                                                                                                                                                                 |
| Subtype of:                                                                                                 |               |                                                                                                                                                                                                                 |
| Stereotypes: «DataType»                                                                                     |               |                                                                                                                                                                                                                 |
| <b>Attribute: transversalDistance</b>                                                                       |               |                                                                                                                                                                                                                 |
|                                                                                                             | Definition:   | Represents the distance measured along a cross-section of a road from the centreline. When the feature is located on the left part of the road from its centreline, this value is negative, otherwise positive. |
|                                                                                                             | Value type:   | Length                                                                                                                                                                                                          |
|                                                                                                             | Multiplicity: |                                                                                                                                                                                                                 |

## 7.11 "AreaLocation" package

### 7.11.1 Overall presentation

The AreaLocation package shall contain a collection of data and information constructs for location referencing using two-dimensional location, representing a geographical region on the surface of the Earth in the generic model for this document

[Figure 11](#) and [Figure 12](#) picture the classes of the package including the relationships between them.

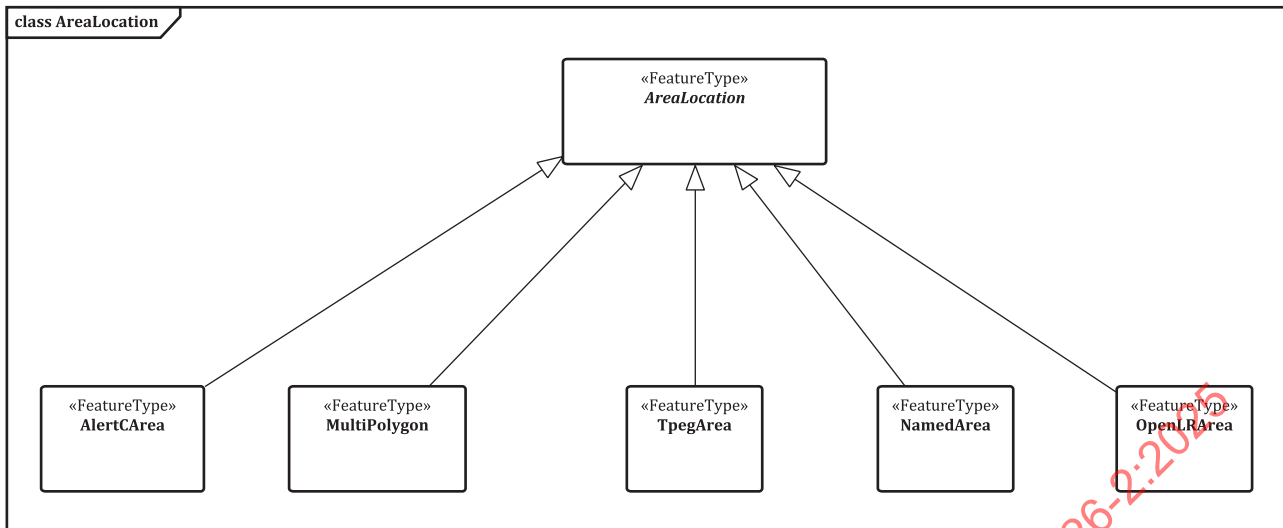


Figure 11 — The "AreaLocation" class diagram

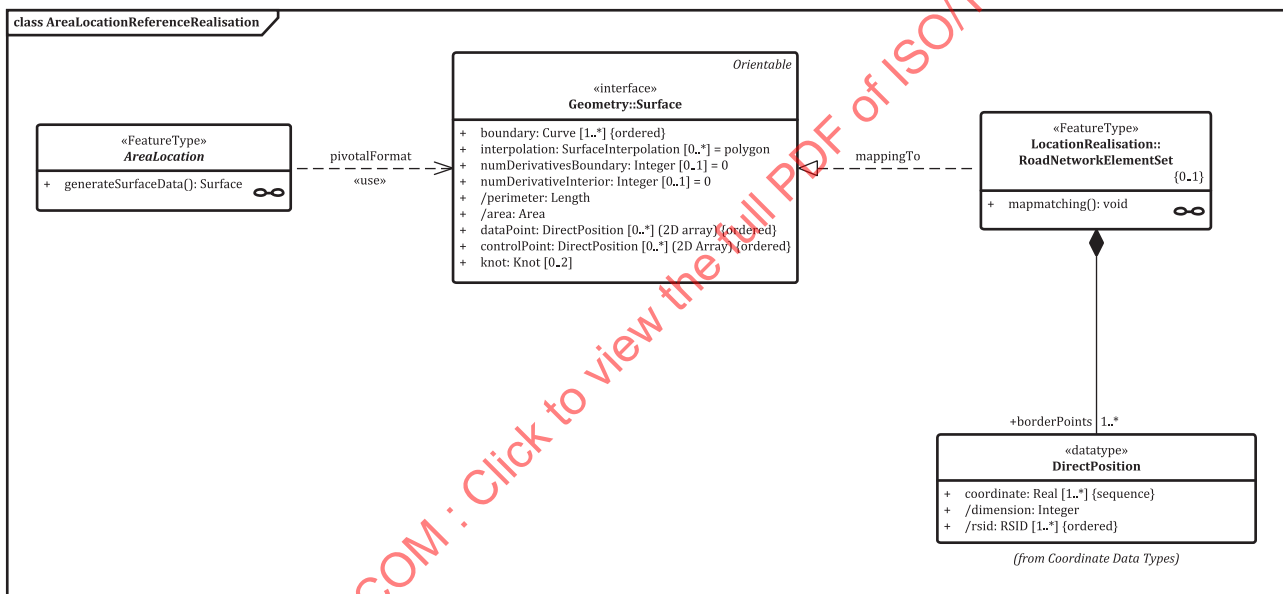


Figure 12 — The "AreaLocationReferenceRealisation" class diagram

### 7.11.2 Class definition

The tables below define the different classes used in this package.

[Table 78](#) defines the characteristics of the AlertCArea class.

Table 78 — AlertCArea Class

|                                                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: AlertCArea</b>                                                                                   |
| Definition: Spatial location enclosed within two-dimensional boundary/boundaries across a defined surface as specified by ISO 17572-2. |
| Abstract:                                                                                                                              |
| Subtype of: AreaLocation                                                                                                               |
| Stereotypes: «FeatureType»                                                                                                             |

[Table 79](#) defines the characteristics of the AreaLocation class.

**Table 79 — AreaLocation Class**

|                                                                                                            |
|------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: AreaLocation</b>                                                     |
| Definition: Spatial location enclosed within two-dimensional boundary/boundaries across a defined surface. |
| Abstract: Abstract                                                                                         |
| Subtype of:                                                                                                |
| Stereotypes: «FeatureType»                                                                                 |

[Table 80](#) defines the characteristics of the MultiPolygon class.

**Table 80 — MultiPolygon Class**

|                                                                                               |
|-----------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: MultiPolygon</b>                                        |
| Definition: An area defined by a set of polygons according to GML as specified by ISO 19136-1 |
| Abstract:                                                                                     |
| Subtype of: AreaLocation                                                                      |
| Stereotypes: «FeatureType»                                                                    |

[Table 81](#) defines the characteristics of the NamedArea class.

**Table 81 — NamedArea Class**

|                                                                                                                                                                                                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: NamedArea</b>                                                                                                                                                                                                                 |
| Definition: An area defined by a name and/or in terms of known boundaries, such as country or county boundaries or allocated control area of particular authority. The attributes do not form a union; instead, the smallest intersection forms the resulting area. |
| Abstract:                                                                                                                                                                                                                                                           |
| Subtype of: AreaLocation                                                                                                                                                                                                                                            |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                                          |

[Table 82](#) defines the characteristics of the OpenLRArea class.

**Table 82 — OpenLRArea Class**

|                                                      |
|------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: OpenLRArea</b> |
| Definition: An area as defined by ISO/TS 21219-22    |
| Abstract:                                            |
| Subtype of: AreaLocation                             |
| Stereotypes: «FeatureType»                           |

[Table 83](#) defines the characteristics of the TpegArea class.

**Table 83 — TpegArea Class**

|                                                    |
|----------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: TpegArea</b> |
| Definition: An area as defined by ISO/TS 24530-2.  |
| Abstract:                                          |
| Subtype of: AreaLocation                           |
| Stereotypes: «FeatureType»                         |

## 7.12 "LinearLocation" package

### 7.12.1 Overall presentation

The LinearLocation package shall contain a collection of data and information constructs for location referencing using a location with one-dimensional character.

Figure 13 and Figure 14 picture the classes of the package including the relationships between them.

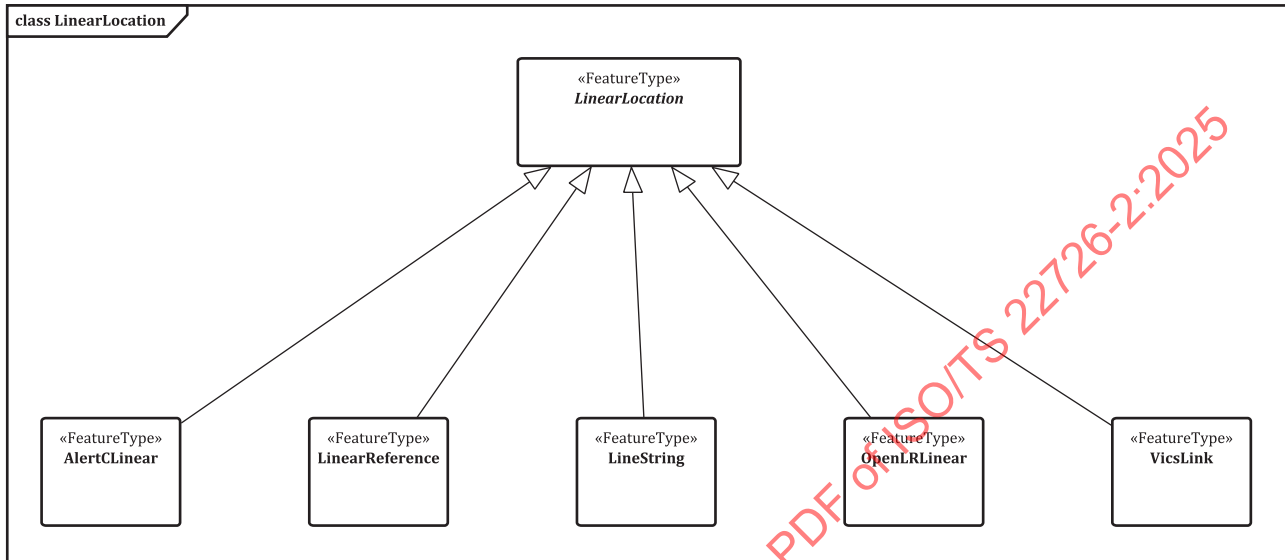


Figure 13 — The "LinearLocation" class diagram

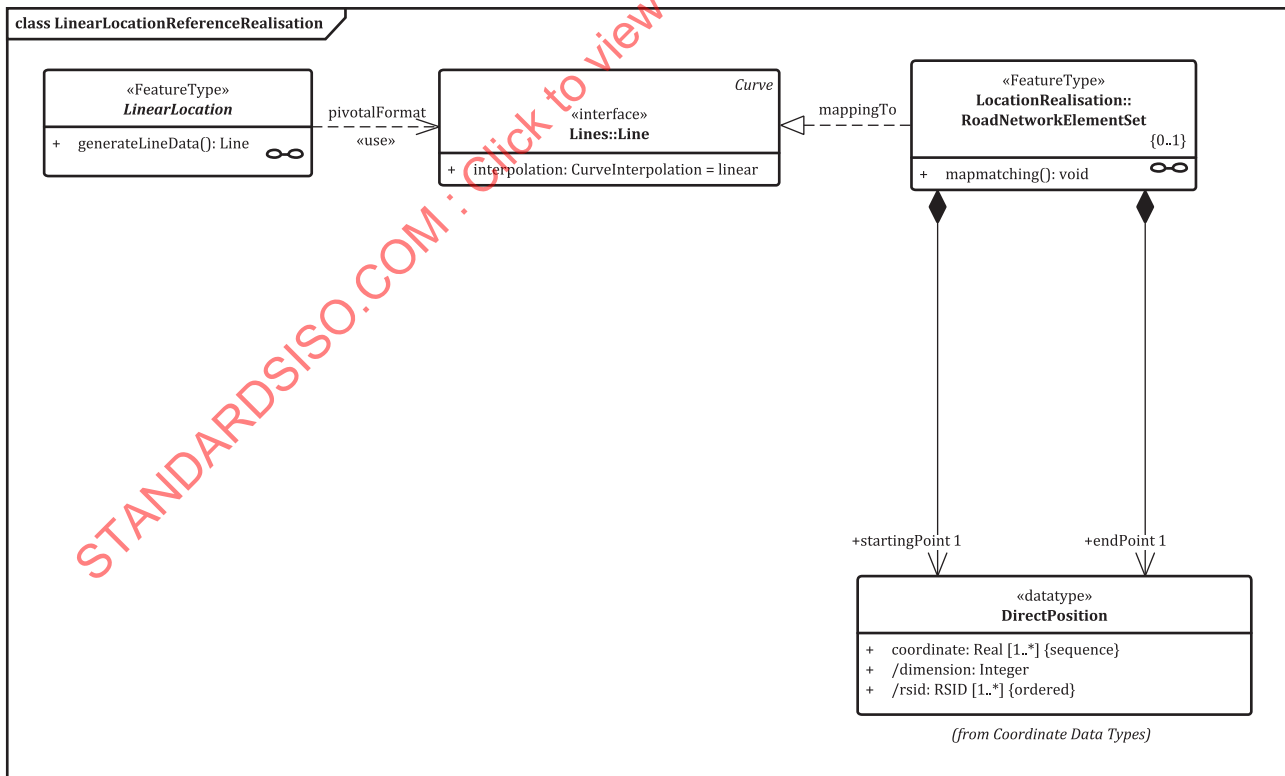


Figure 14 — The "LinearLocationReferenceRealisation" class diagram

### 7.12.2 Class definition

The tables below define the different classes used in this package.

[Table 84](#) defines the characteristics of the AlertCLinear class.

**Table 84 — AlertCLinear Class**

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: AlertCLinear</b>                                             |
| Definition: Spatial location that extends between two point locations as specified by ISO 17572-2. |
| Abstract:                                                                                          |
| Subtype of: LinearLocation                                                                         |
| Stereotypes: «FeatureType»                                                                         |

[Table 85](#) defines the characteristics of the LinearLocation class.

**Table 85 — LinearLocation Class**

|                                                                                             |
|---------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: LinearLocation</b>                                    |
| Definition: Spatial location that extends between two point locations along a defined path. |
| Abstract: Abstract                                                                          |
| Subtype of:                                                                                 |
| Stereotypes: «FeatureType»                                                                  |

[Table 86](#) defines the characteristics of the LinearReference class.

**Table 86 — LinearReference Class**

|                                                           |
|-----------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: LinearReference</b> |
| Definition: Based on ISO 19148.                           |
| Abstract:                                                 |
| Subtype of: LinearLocation                                |
| Stereotypes: «FeatureType»                                |

[Table 87](#) defines the characteristics of the LineString class.

**Table 87 — LineString Class**

|                                                                             |
|-----------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: LineString</b>                        |
| Definition: A line string, i.e. a curve composed of straight-line segments. |
| Abstract:                                                                   |
| Subtype of: LinearLocation                                                  |
| Stereotypes: «FeatureType»                                                  |

[Table 88](#) defines the characteristics of the OpenLRLinear class.

**Table 88 — OpenLRLinear Class**

|                                                                                                        |
|--------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: OpenLRLinear</b>                                                 |
| Definition: Spatial location that extends between two point locations as specified by ISO/TS 21219-22. |
| Abstract:                                                                                              |
| Subtype of: LinearLocation                                                                             |
| Stereotypes: «FeatureType»                                                                             |

[Table 89](#) defines the characteristics of the VicsLink class.

Table 89 — VicsLink Class

|                                                                                                     |
|-----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: VicsLink</b>                                                  |
| Definition: Spatial location as referenced by ISO 17572-2 and specified by VICS Link specification. |
| Abstract:                                                                                           |
| Subtype of: LinearLocation                                                                          |
| Stereotypes: «FeatureType»                                                                          |

## 7.13 "LocationRealisation" package

### 7.13.1 Overall presentation

The LocationRealisation package shall consist of information describing the road surface elements using the RoadNetworkElementSet class aggregating this document defined RoadNetworkElement class(es)

Figure 15 pictures the classes of the package including the relationships between them.

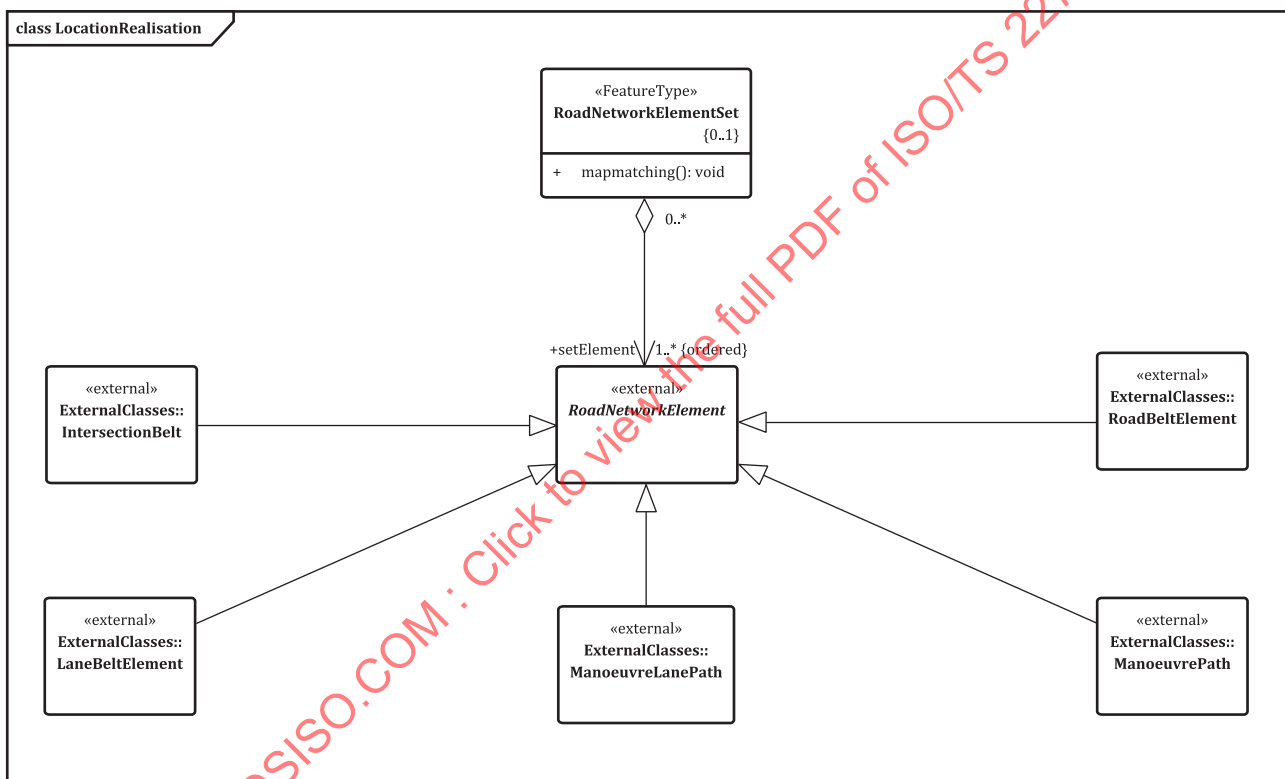


Figure 15 — The "LocationRealisation" class diagram

### 7.13.2 Class definition

The tables below define the different classes used in this package.

Table 90 defines the characteristics of the RoadNetworkElement class.

Table 90 — RoadNetworkElement Class

|                                                                                                                |
|----------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;external&gt;&gt;: RoadNetworkElement</b>                                                      |
| Definition: Any type of road surface-shaped component.                                                         |
| NOTE This can be either a road belt element, a lane belt element, a road belt section or an intersection belt. |
| Abstract: Abstract                                                                                             |
| Subtype of:                                                                                                    |
| Stereotypes: «external»                                                                                        |

[Table 91](#) defines the characteristics of the RoadNetworkElementSet class.

Table 91 — RoadNetworkElementSet Class

|                                                                 |
|-----------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: RoadNetworkElementSet</b> |
| Definition: Ordered collection of road network element.         |
| Abstract:                                                       |
| Subtype of:                                                     |
| Stereotypes: «FeatureType»                                      |

## 7.14 Package "PointLocation"

### 7.14.1 Overall presentation

The PointLocation package shall contain a collection of data and information constructs for location referencing using a location that has a zero-dimensional character

[Figure 16](#) and [Figure 17](#) picture the classes of the package including the relationships between them.

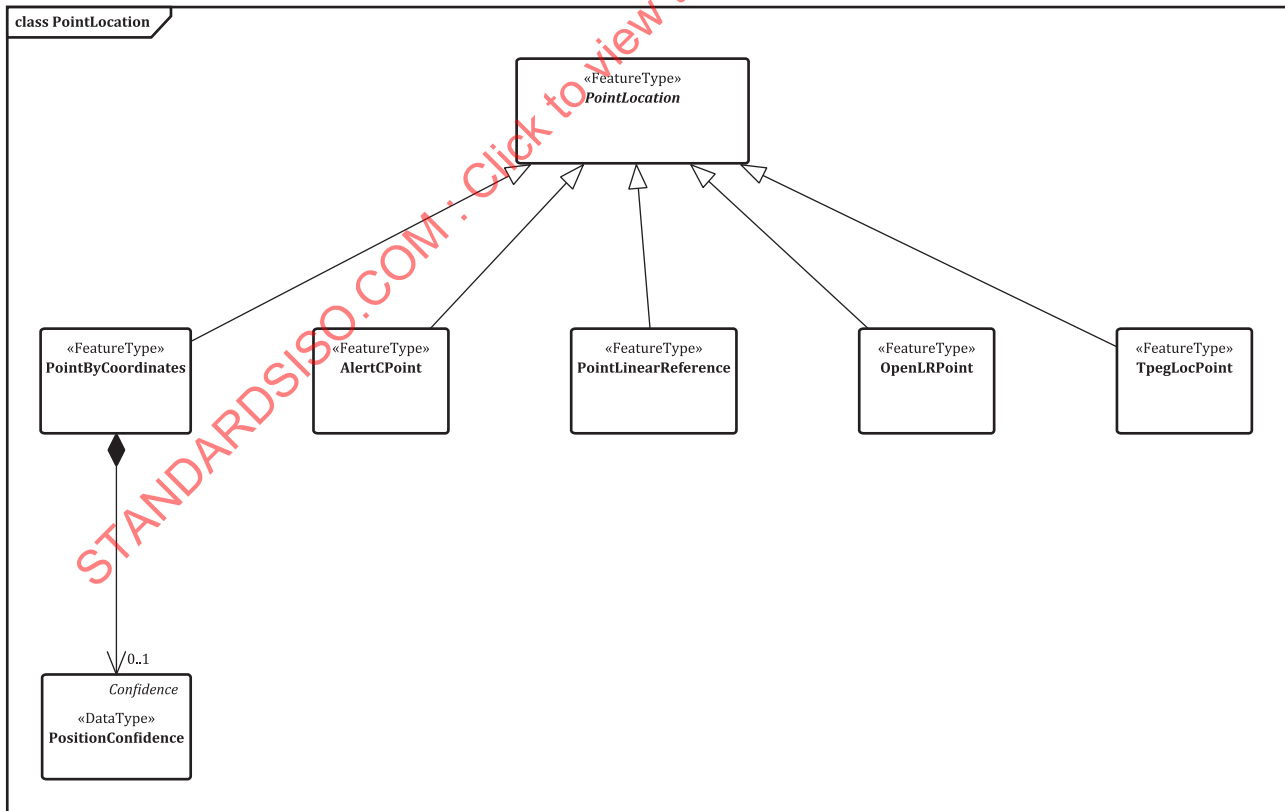


Figure 16 — The "PointLocation" class diagram

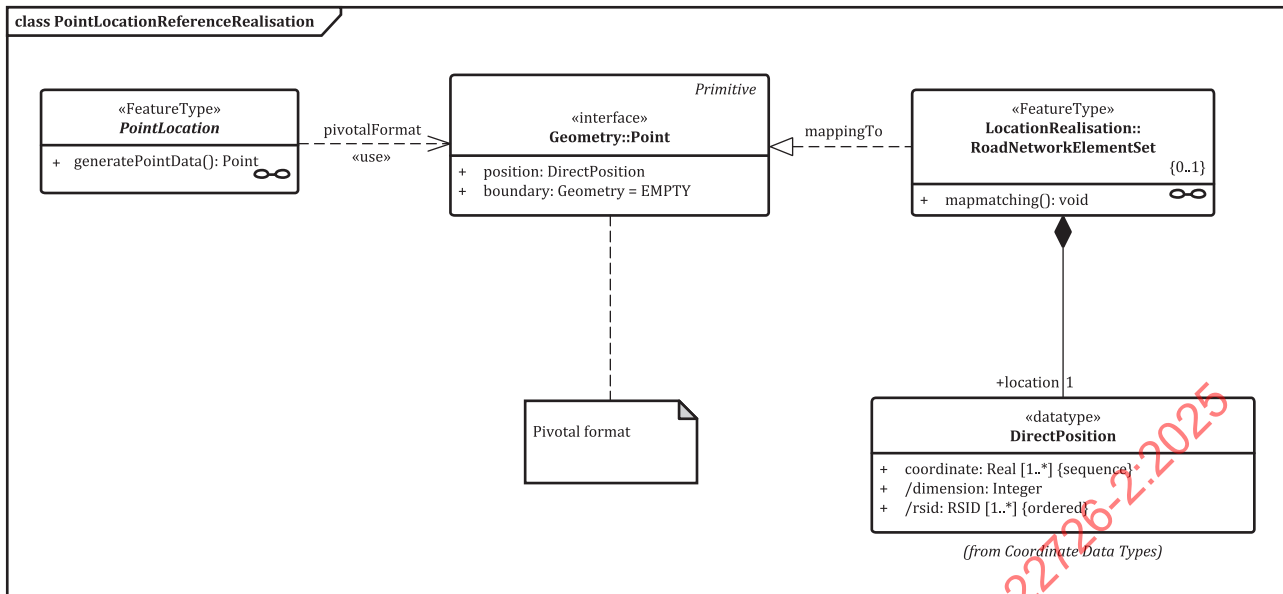


Figure 17 — The "PointLocationReferenceRealisation" class diagram

#### 7.14.2 Class definition

The tables below define the different classes used in this package.

[Table 92](#) defines the characteristics of the AlertCPoint class.

Table 92 — AlertCPoint Class

|                                                                                                 |
|-------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: AlertCPoint</b>                                           |
| Definition: Spatial location that has a zero-dimensional character as specified by ISO 17572-2. |
| Abstract:                                                                                       |
| Subtype of: PointLocation                                                                       |
| Stereotypes: «FeatureType»                                                                      |

[Table 93](#) defines the characteristics of the OpenLRPoint class.

Table 93 — OpenLRPoint Class

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: OpenLRPoint</b>                                              |
| Definition: Spatial location that has a zero-dimensional character as specified by ISO/TS 21219-22 |
| Abstract:                                                                                          |
| Subtype of: PointLocation                                                                          |
| Stereotypes: «FeatureType»                                                                         |

[Table 94](#) defines the characteristics of the PointByCoordinates class.



**Table 94 — PointByCoordinates Class**

|                                                                                                                                   |
|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: PointByCoordinates</b>                                                                      |
| Definition: A single point defined only by a coordinate set with an optional bearing direction (known as “point by coordinates”). |
| Abstract:                                                                                                                         |
| Subtype of: PointLocation                                                                                                         |
| Stereotypes: «FeatureType»                                                                                                        |

[Table 95](#) defines the characteristics of the PointLinearReference class.

**Table 95 — PointLinearReference Class**

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: PointLinearReference</b>                                     |
| Definition: A point defined by a linear reference representing a single point on a linear element. |
| Abstract:                                                                                          |
| Subtype of: PointLocation                                                                          |
| Stereotypes: «FeatureType»                                                                         |

[Table 96](#) defines the characteristics of the PointLocation class.

**Table 96 — PointLocation Class**

|                                                                                                          |
|----------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: PointLocation</b>                                                  |
| Definition: Spatial location representing a single geospatial point (0-dimensional geometric primitive). |
| Abstract: Abstract                                                                                       |
| Subtype of:                                                                                              |
| Stereotypes: «FeatureType»                                                                               |

[Table 97](#) defines the characteristics of the PositionConfidence class.

**Table 97 — PositionConfidence Class**

|                                                                                                    |
|----------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: PositionConfidence</b>                                          |
| Definition: Horizontal and vertical position accuracy parameters defining the position confidence. |
| Subtype of: Confidence                                                                             |
| Stereotypes: «DataType»                                                                            |

[Table 98](#) defines the characteristics of the TpegLocPoint class.

**Table 98 — TpegLocPoint Class**

|                                                          |
|----------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: TpegLocPoint</b>   |
| Definition: A single point as defined by ISO/TS 24530-2. |
| Abstract:                                                |
| Subtype of: PointLocation                                |
| Stereotypes: «FeatureType»                               |

## 7.15 "SituationDataset" package

### 7.15.1 Overall presentation

The SituationDataset package shall contain data and information constructs used for publishing situation information in the generic model for this document.

Figure 18 pictures the classes of the package including the relationships between them.

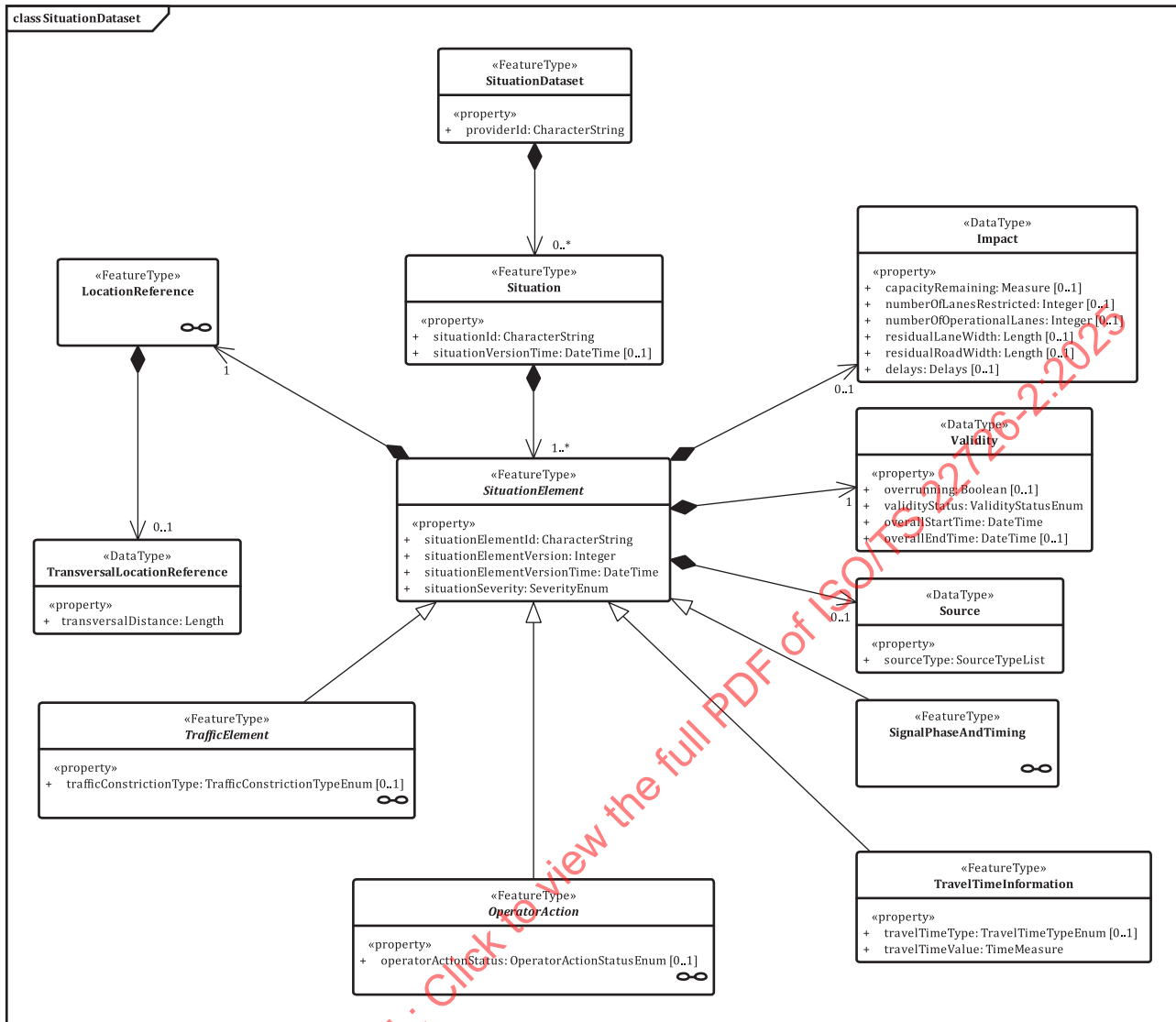


Figure 18 — The "SituationDataset" class diagram

NOTE The "SignalPhaseAndTiming" class is only present in the class model of this document as a placeholder. It will be specified in a future edition.

### 7.15.2 Class definition

The tables below define the different classes used in this package.

Table 99 defines the characteristics of the Situation class.

Table 99 — Situation Class

| Class <<FeatureType>>: Situation                                                                                                                                                                                                                              |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Definition: An identifiable instance of a traffic or travel situation comprising one or more traffic or travel circumstances which are linked by one or more causal relationships. Each traffic or travel circumstance is represented by a situation element. |
| Abstract:                                                                                                                                                                                                                                                     |
| Subtype of:                                                                                                                                                                                                                                                   |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                                    |

Table 99 (continued)

|                                        |               |                                                                                                                                                |
|----------------------------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Attribute: situationId</b>          |               |                                                                                                                                                |
|                                        | Definition:   | An identifier for the situation as defined by the situation data provider.                                                                     |
|                                        | Value type:   | CharacterString                                                                                                                                |
|                                        | Multiplicity: |                                                                                                                                                |
| <b>Attribute: situationVersionTime</b> |               |                                                                                                                                                |
|                                        | Definition:   | The date/time that this current version of the situation was written into the database of the supplier which is involved in the data exchange. |
|                                        | Value type:   | DateTime                                                                                                                                       |
|                                        | Multiplicity: | [0..1]                                                                                                                                         |

The following [table 100](#) defines the characteristics of the SituationDataset class.

Table 100 — SituationDataset Class

|                                                                               |               |                                                                       |
|-------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: SituationDataset</b>                    |               |                                                                       |
| Definition: A data set containing zero or more traffic and travel situations. |               |                                                                       |
| Abstract:                                                                     |               |                                                                       |
| Subtype of:                                                                   |               |                                                                       |
| Stereotypes: «FeatureType»                                                    |               |                                                                       |
| <b>Attribute: providerId</b>                                                  |               |                                                                       |
|                                                                               | Definition:   | An identifier/name whose range is specific to the particular country. |
|                                                                               | Value type:   | CharacterString                                                       |
|                                                                               | Multiplicity: |                                                                       |

[Table 101](#) defines the characteristics of the SituationElement class.

Table 101 — SituationElement Class

|                                                                                        |               |                                                                                                                                                                             |
|----------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: SituationElement</b>                             |               |                                                                                                                                                                             |
| Definition: An identifiable versioned instance of a single element within a situation. |               |                                                                                                                                                                             |
| Abstract: Abstract                                                                     |               |                                                                                                                                                                             |
| Subtype of:                                                                            |               |                                                                                                                                                                             |
| Stereotypes: «FeatureType»                                                             |               |                                                                                                                                                                             |
| <b>Attribute: situationElementId</b>                                                   |               |                                                                                                                                                                             |
|                                                                                        | Definition:   | An identifier for the situation element as defined by the situation data provider.                                                                                          |
|                                                                                        | Value type:   | CharacterString                                                                                                                                                             |
|                                                                                        | Multiplicity: |                                                                                                                                                                             |
| <b>Attribute: situationElementVersion</b>                                              |               |                                                                                                                                                                             |
|                                                                                        | Definition:   | The version number for the current situation element as defined by the situation data provider.                                                                             |
|                                                                                        | Value type:   | Integer                                                                                                                                                                     |
|                                                                                        | Multiplicity: |                                                                                                                                                                             |
| <b>Attribute: situationElementVersionTime</b>                                          |               |                                                                                                                                                                             |
|                                                                                        | Definition:   | The date/time that this current version of the situation element within the situation was written into the database of the supplier which is involved in the data exchange. |
|                                                                                        | Value type:   | DateTime                                                                                                                                                                    |
|                                                                                        | Multiplicity: |                                                                                                                                                                             |

**Table 101** (continued)

| <b>Attribute: situationSeverity</b> |               |                                                                                                                                                                                                                                                                   |
|-------------------------------------|---------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                     | Definition:   | Provisional attribute for qualifying the severity (or the urgency) of the situation element.<br>The assessment of the impact (in terms of severity) that this element of the situation is having, or will have, on the traffic flow as perceived by the supplier. |
|                                     | Value type:   | SeverityEnum                                                                                                                                                                                                                                                      |
|                                     | Multiplicity: |                                                                                                                                                                                                                                                                   |

[Table 102](#) defines the characteristics of the TravelTimeInformation class.

**Table 102 — TravelTimeInformation Class**

| <b>Class &lt;&lt;FeatureType&gt;&gt;: TravelTimeInformation</b>                                            |               |                                                                                     |
|------------------------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| Definition: Measured or computed travel time information relating to a linear section of the road network. |               |                                                                                     |
| Abstract:                                                                                                  |               |                                                                                     |
| Subtype of: SituationElement                                                                               |               |                                                                                     |
| Stereotypes: «FeatureType»                                                                                 |               |                                                                                     |
| <b>Attribute: travelTimeType</b>                                                                           |               |                                                                                     |
|                                                                                                            | Definition:   | Indication of the way in which the travel time is derived                           |
|                                                                                                            | Value type:   | TravelTimeTypeEnum                                                                  |
|                                                                                                            | Multiplicity: | [0..1]                                                                              |
| <b>Attribute: travelTimeValue</b>                                                                          |               |                                                                                     |
|                                                                                                            | Definition:   | Derived/computed travel time information relating to a specific group of locations. |
|                                                                                                            | Value type:   | TimeMeasure                                                                         |
|                                                                                                            | Multiplicity: |                                                                                     |

## 7.16 "OperatorAction" package

### 7.16.1 Overall presentation

The OperatorAction package shall contain a collection of data providing information on an occurrence of traffic action on the network that is decided by a road or traffic operator.

[Figure 19](#) pictures the classes of the package including the relationships between them.

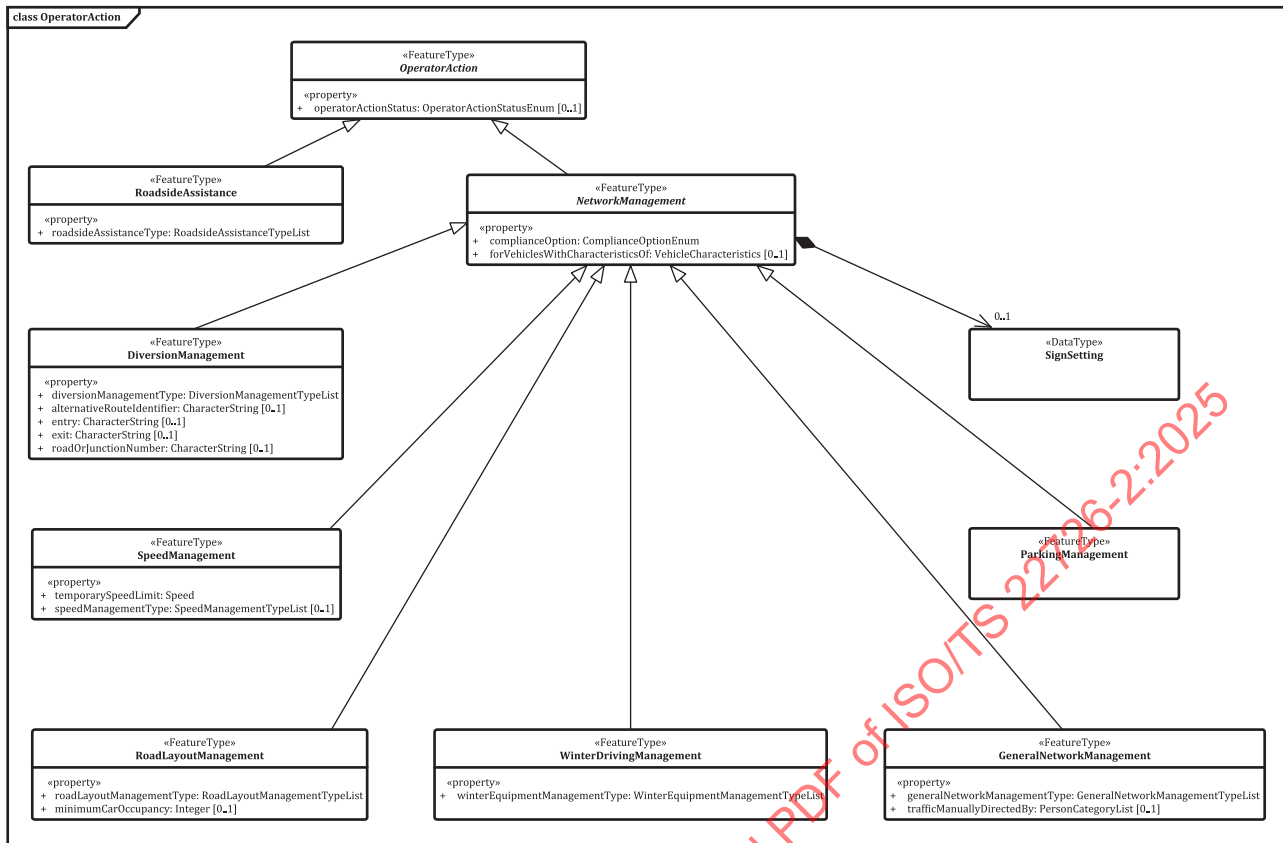


Figure 19 — The "OperatorAction" class diagram

NOTE The "SignSetting" and "ParkingManagement" classes are only present in the class model of this document as placeholders. They will be specified in a future edition.

### 7.16.2 Class definition

The tables below define the different classes used in this package.

[Table 103](#) defines the characteristics of the DiversionManagement class.

Table 103 — DiversionManagement Class

| Class <<FeatureType>>: DiversionManagement                                                        |               |                                                                                                                     |
|---------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------------------------------------|
| Definition: Diversion or rerouting management action that is issued by the road network operator. |               |                                                                                                                     |
| Abstract:                                                                                         |               |                                                                                                                     |
| Subtype of: NetworkManagement                                                                     |               |                                                                                                                     |
| Stereotypes: «FeatureType»                                                                        |               |                                                                                                                     |
| Attribute: diversionManagementType                                                                |               |                                                                                                                     |
|                                                                                                   | Definition:   | Type of diversion or rerouting management action instigated by the road operator.                                   |
|                                                                                                   | Value type:   | DiversionManagementTypeList                                                                                         |
|                                                                                                   | Multiplicity: |                                                                                                                     |
| Attribute: alternativeRouteIdentifier                                                             |               |                                                                                                                     |
|                                                                                                   | Definition:   | Identity used on signs to identify the alternative route, typically a very short sequence of letters and/or digits. |
|                                                                                                   | Value type:   | CharacterString                                                                                                     |
|                                                                                                   | Multiplicity: | [0..1]                                                                                                              |

**Table 103** (continued)

|                                        |               |                                                                                         |
|----------------------------------------|---------------|-----------------------------------------------------------------------------------------|
| <b>Attribute: entry</b>                |               |                                                                                         |
|                                        | Definition:   | The specified entry on to another road at which the alternative route commences.        |
|                                        | Value type:   | CharacterString                                                                         |
|                                        | Multiplicity: | [0..1]                                                                                  |
| <b>Attribute: exit</b>                 |               |                                                                                         |
|                                        | Definition:   | The specified exit from the normal route/road at which the alternative route commences. |
|                                        | Value type:   | CharacterString                                                                         |
|                                        | Multiplicity: | [0..1]                                                                                  |
| <b>Attribute: roadOrJunctionNumber</b> |               |                                                                                         |
|                                        | Definition:   | The intersecting road or the junction at which the alternative route commences.         |
|                                        | Value type:   | CharacterString                                                                         |
|                                        | Multiplicity: | [0..1]                                                                                  |

[Table 104](#) defines the characteristics of the GeneralNetworkManagement class.

**Table 104 — GeneralNetworkManagement Class**

|                                                                                                                                                                                             |               |                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: GeneralNetworkManagement</b>                                                                                                                          |               |                                                                                                                                   |
| Definition: Network management action that is instigated either manually or automatically by the road network operator. Compliance with any resulting control can be advisory or mandatory. |               |                                                                                                                                   |
| Abstract:                                                                                                                                                                                   |               |                                                                                                                                   |
| Subtype of: NetworkManagement                                                                                                                                                               |               |                                                                                                                                   |
| Stereotypes: «FeatureType»                                                                                                                                                                  |               |                                                                                                                                   |
| <b>Attribute: generalNetworkManagementType</b>                                                                                                                                              |               |                                                                                                                                   |
|                                                                                                                                                                                             | Definition:   | The type of traffic management action instigated by the network/road operator.                                                    |
|                                                                                                                                                                                             | Value type:   | GeneralNetworkManagementTypeList                                                                                                  |
|                                                                                                                                                                                             | Multiplicity: |                                                                                                                                   |
| <b>Attribute: trafficManuallyDirectedBy</b>                                                                                                                                                 |               |                                                                                                                                   |
|                                                                                                                                                                                             | Definition:   | Type of person that is manually directing traffic (applicable if generalManagementType is set to "trafficBeingManuallyDirected"). |
|                                                                                                                                                                                             | Value type:   | PersonCategoryList                                                                                                                |
|                                                                                                                                                                                             | Multiplicity: | [0..1]                                                                                                                            |

[Table 105](#) defines the characteristics of the NetworkManagement class.

**Table 105 — NetworkManagement Class**

|                                                                                              |             |                                                                                                                                        |
|----------------------------------------------------------------------------------------------|-------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: NetworkManagement</b>                                  |             |                                                                                                                                        |
| Definition: Network management action which is applicable to the road network and its users. |             |                                                                                                                                        |
| Abstract: Abstract                                                                           |             |                                                                                                                                        |
| Subtype of: OperatorAction                                                                   |             |                                                                                                                                        |
| Stereotypes: «FeatureType»                                                                   |             |                                                                                                                                        |
| <b>Attribute: complianceOption</b>                                                           |             |                                                                                                                                        |
|                                                                                              | Definition: | Defines whether the network management instruction or the control resulting from a network management action is advisory or mandatory. |
|                                                                                              | Value type: | ComplianceOptionEnum                                                                                                                   |

**Table 105** (continued)

|                                                    |               |                                                                                       |
|----------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
|                                                    | Multiplicity: |                                                                                       |
| <b>Attribute: forVehiclesWithCharacteristicsOf</b> |               |                                                                                       |
|                                                    | Definition:   | The characteristics of those vehicles for which the network management is applicable. |
|                                                    | Value type:   | VehicleCharacteristics                                                                |
|                                                    | Multiplicity: | [0..1]                                                                                |

[Table 106](#) defines the characteristics of the OperatorAction class.

**Table 106 — OperatorAction Class**

|                                                                                                                                                                                        |               |                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|--------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: OperatorAction</b>                                                                                                                               |               |                                            |
| Definition: Actions that a traffic operator can decide to implement to prevent or help correct dangerous or poor driving conditions, including maintenance of the road infrastructure. |               |                                            |
| Abstract: Abstract                                                                                                                                                                     |               |                                            |
| Subtype of: SituationElement                                                                                                                                                           |               |                                            |
| Stereotypes: «FeatureType»                                                                                                                                                             |               |                                            |
| <b>Attribute: operatorActionStatus</b>                                                                                                                                                 |               |                                            |
|                                                                                                                                                                                        | Definition:   | The status of the defined operator action. |
|                                                                                                                                                                                        | Value type:   | OperatorActionStatusEnum                   |
|                                                                                                                                                                                        | Multiplicity: | [0..1]                                     |

[Table 107](#) defines the characteristics of the ParkingManagement class.

**Table 107 — ParkingManagement Class**

|                                                                                                                                          |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: ParkingManagement</b>                                                                              |  |  |
| Definition: Management action dealing with car parks or parking that is instigated by the road network operator or the parking operator. |  |  |
| Abstract:                                                                                                                                |  |  |
| Subtype of: NetworkManagement                                                                                                            |  |  |
| Stereotypes: «FeatureType»                                                                                                               |  |  |

[Table 108](#) defines the characteristics of the RoadLayoutManagement class.

**Table 108 — RoadLayoutManagement Class**

|                                                                                                          |               |                                                                                              |
|----------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: RoadLayoutManagement</b>                                           |               |                                                                                              |
| Definition: Road, carriageway or lane management action that is instigated by the road network operator. |               |                                                                                              |
| Abstract:                                                                                                |               |                                                                                              |
| Subtype of: NetworkManagement                                                                            |               |                                                                                              |
| Stereotypes: «FeatureType»                                                                               |               |                                                                                              |
| <b>Attribute: roadLayoutManagementType</b>                                                               |               |                                                                                              |
|                                                                                                          | Definition:   | Type of road, carriageway or lane management action instigated by the road/traffic operator. |
|                                                                                                          | Value type:   | RoadLayoutManagementTypeList                                                                 |
|                                                                                                          | Multiplicity: |                                                                                              |
| <b>Attribute: minimumCarOccupancy</b>                                                                    |               |                                                                                              |

**Table 108** (continued)

|  |               |                                                                                                                          |
|--|---------------|--------------------------------------------------------------------------------------------------------------------------|
|  | Definition:   | The minimum number of persons required in a vehicle in order for it to be allowed to transit the specified road section. |
|  | Value type:   | Integer                                                                                                                  |
|  | Multiplicity: | [0..1]                                                                                                                   |

[Table 109](#) defines the characteristics of the RoadsideAssistance class.

**Table 109 — RoadsideAssistance Class**

|                                                                     |               |                                                                                         |
|---------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: RoadsideAssistance</b>        |               |                                                                                         |
| Definition: Details of roadside assistance required or being given. |               |                                                                                         |
| Abstract:                                                           |               |                                                                                         |
| Subtype of: OperatorAction                                          |               |                                                                                         |
| Stereotypes: «FeatureType»                                          |               |                                                                                         |
| <b>Attribute: roadsideAssistanceType</b>                            |               |                                                                                         |
|                                                                     | Definition:   | Indicates the nature of the roadside assistance that will be, is, or has been provided. |
|                                                                     | Value type:   | RoadsideAssistanceTypeList                                                              |
|                                                                     | Multiplicity: |                                                                                         |

[Table 110](#) defines the characteristics of the SignSetting class.

**Table 110 — SignSetting Class**

|                                                                                                                                                |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class &lt;&lt;DataType&gt;&gt;: SignSetting</b>                                                                                             |  |  |
| Definition: Provides information on message signs and the information currently displayed. It is based on ISO 14823 "Graphic Data Dictionary". |  |  |
| Subtype of:                                                                                                                                    |  |  |
| Stereotypes: «DataType»                                                                                                                        |  |  |

[Table 111](#) defines the characteristics of the SpeedManagement class.

**Table 111 — SpeedManagement Class**

|                                                                                      |               |                                                                               |
|--------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: SpeedManagement</b>                            |               |                                                                               |
| Definition: Speed management action that is instigated by the road network operator. |               |                                                                               |
| Abstract:                                                                            |               |                                                                               |
| Subtype of: NetworkManagement                                                        |               |                                                                               |
| Stereotypes: «FeatureType»                                                           |               |                                                                               |
| <b>Attribute: temporarySpeedLimit</b>                                                |               |                                                                               |
|                                                                                      | Definition:   | Temporary limit defining the maximum advisory or mandatory speed of vehicles. |
|                                                                                      | Value type:   | Speed                                                                         |
|                                                                                      | Multiplicity: |                                                                               |
| <b>Attribute: speedManagementType</b>                                                |               |                                                                               |
|                                                                                      | Definition:   | Type of speed management action instigated by the road/traffic operator.      |
|                                                                                      | Value type:   | SpeedManagementTypeList                                                       |
|                                                                                      | Multiplicity: | [0..1]                                                                        |

[Table 112](#) defines the characteristics of the WinterDrivingManagement class.



Table 112 — WinterDrivingManagement Class

|                                                                                               |               |                                                                                     |
|-----------------------------------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: WinterDrivingManagement</b>                             |               |                                                                                     |
| Definition: Winter driving management action that is instigated by the road network operator. |               |                                                                                     |
| Abstract:                                                                                     |               |                                                                                     |
| Subtype of: NetworkManagement                                                                 |               |                                                                                     |
| Stereotypes: «FeatureType»                                                                    |               |                                                                                     |
| <b>Attribute: winterEquipmentManagementType</b>                                               |               |                                                                                     |
|                                                                                               | Definition:   | Type of winter equipment management action instigated by the road/traffic operator. |
|                                                                                               | Value type:   | WinterEquipmentManagementTypeList                                                   |
|                                                                                               | Multiplicity: |                                                                                     |

## 7.17 "Parking" package

### 7.17.1 Overall presentation

The Parking package shall contain a collection of data providing information on car parking and related facilities

[Figure 20](#) pictures the classes of the package including the relationships between them.

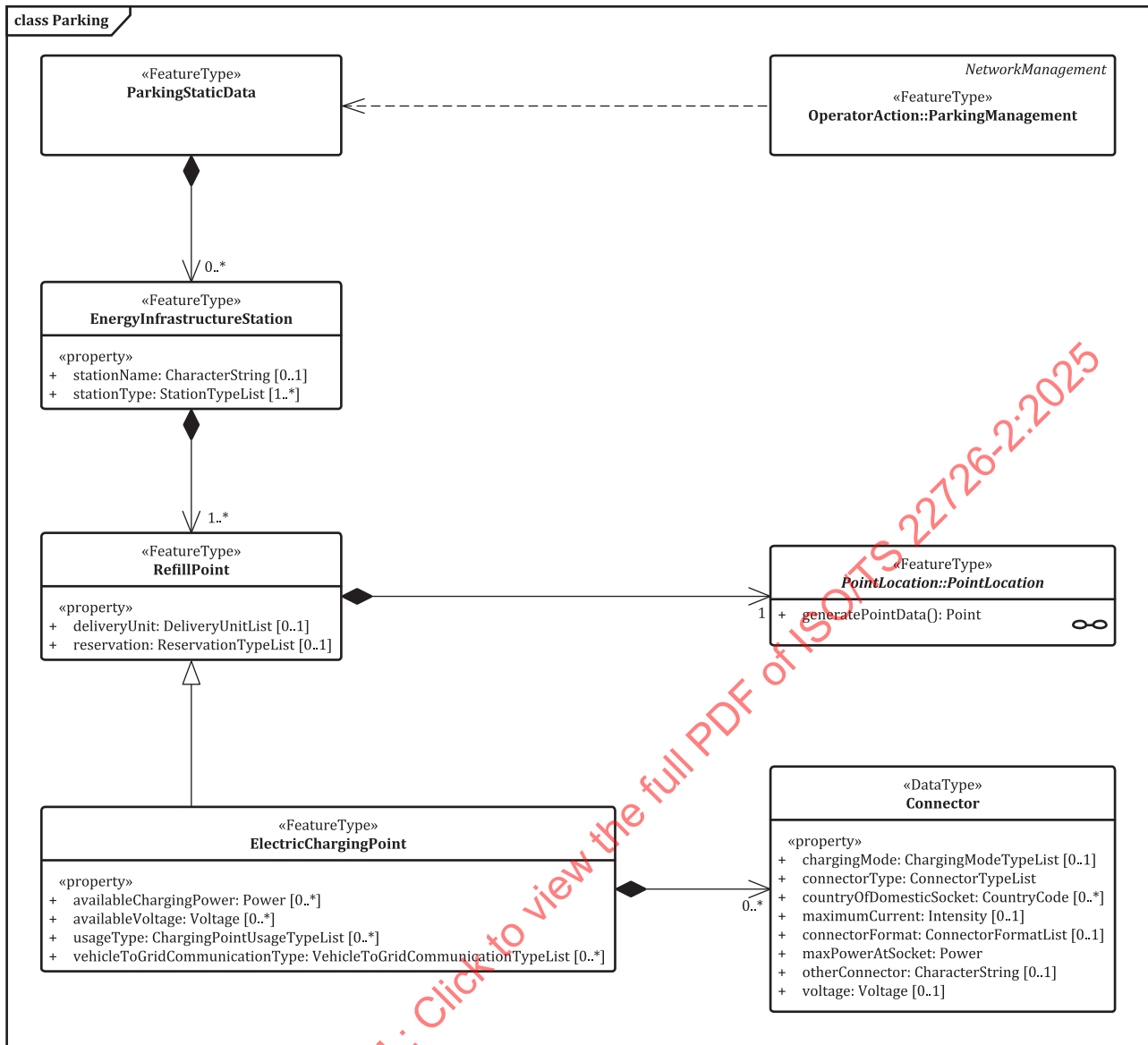


Figure 20 — The "Parking" class diagram

NOTE The "ParkingManagement" class is only present in the class model of this document as a placeholder. It will be specified in a future edition.

### 7.17.2 Class definition

The tables below define the different classes used in this package.

The following [table 113](#) defines the characteristics of the Connector class.

Table 113 — Connector Class

|                                                                                                                                                   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;DataType&gt;&gt;: Connector</b>                                                                                                  |
| Definition: Technical infrastructure delivering electricity from the charging facility to the vehicle through a standardized or proprietary plug. |
| Subtype of:                                                                                                                                       |
| Stereotypes: «DataType»                                                                                                                           |
| <b>Attribute: chargingMode</b>                                                                                                                    |

Table 113 (continued)

|                                           |               |                                                                                                                       |
|-------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------|
|                                           | Definition:   | EV charging modes as defined by IEC 61851-1.                                                                          |
|                                           | Value type:   | ChargingModeTypeList                                                                                                  |
|                                           | Multiplicity: | [0..1]                                                                                                                |
| <b>Attribute: connectorType</b>           |               |                                                                                                                       |
|                                           | Definition:   | Type of the piece that is used to connect a charging point to a vehicle or vice versa. It requires a matching socket. |
|                                           | Value type:   | ConnectorTypeList                                                                                                     |
|                                           | Multiplicity: |                                                                                                                       |
| <b>Attribute: countryOfDomesticSocket</b> |               |                                                                                                                       |
|                                           | Definition:   | Information indicating domestic sockets in order to be able to determine the type of socket.                          |
|                                           | Value type:   | CountryCode                                                                                                           |
|                                           | Multiplicity: | [0..*]                                                                                                                |
| <b>Attribute: maximumCurrent</b>          |               |                                                                                                                       |
|                                           | Definition:   | Maximum current in amperes.                                                                                           |
|                                           | Value type:   | Intensity                                                                                                             |
|                                           | Multiplicity: | [0..1]                                                                                                                |
| <b>Attribute: connectorFormat</b>         |               |                                                                                                                       |
|                                           | Definition:   | Form of the piece that is used to connect a charging point to a vehicle or vice versa. It requires a matching socket. |
|                                           | Value type:   | ConnectorFormatList                                                                                                   |
|                                           | Multiplicity: | [0..1]                                                                                                                |
| <b>Attribute: maxPowerAtSocket</b>        |               |                                                                                                                       |
|                                           | Definition:   | The maximum deliverable electric power through the given connector.                                                   |
|                                           | Value type:   | Power                                                                                                                 |
|                                           | Multiplicity: |                                                                                                                       |
| <b>Attribute: otherConnector</b>          |               |                                                                                                                       |
|                                           | Definition:   | Available connectors at the charging station for different type of EVs.                                               |
|                                           | Value type:   | CharacterString                                                                                                       |
|                                           | Multiplicity: | [0..1]                                                                                                                |
| <b>Attribute: voltage</b>                 |               |                                                                                                                       |
|                                           | Definition:   | Possible degrees of voltage.                                                                                          |
|                                           | Value type:   | Voltage                                                                                                               |
|                                           | Multiplicity: | [0..1]                                                                                                                |

Table 114 defines the characteristics of the ElectricChargingPoint class.

Table 114 — ElectricChargingPoint Class

|                                                                                                                                       |             |                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: ElectricChargingPoint</b>                                                                       |             |                                                                                                  |
| Definition: Technical infrastructure at a specific location that facilitates the electric charging process for one vehicle at a time. |             |                                                                                                  |
| Abstract:                                                                                                                             |             |                                                                                                  |
| Subtype of: RefillPoint                                                                                                               |             |                                                                                                  |
| Stereotypes: «FeatureType»                                                                                                            |             |                                                                                                  |
| <b>Attribute: availableChargingPower</b>                                                                                              |             |                                                                                                  |
|                                                                                                                                       | Definition: | The charging power capacity of the given charging infrastructure available during its operation. |

**Table 114** (continued)

|                                                  |               |                                                                                                              |
|--------------------------------------------------|---------------|--------------------------------------------------------------------------------------------------------------|
|                                                  | Value type:   | Power                                                                                                        |
|                                                  | Multiplicity: | [0..*]                                                                                                       |
| <b>Attribute: availableVoltage</b>               |               |                                                                                                              |
|                                                  | Definition:   | The voltage value(s) on which the given charging infrastructure is operating.                                |
|                                                  | Value type:   | Voltage                                                                                                      |
|                                                  | Multiplicity: | [0..*]                                                                                                       |
| <b>Attribute: usageType</b>                      |               |                                                                                                              |
|                                                  | Definition:   | Usage type of the electric charging point.                                                                   |
|                                                  | Value type:   | ChargingPointUsageTypeList                                                                                   |
|                                                  | Multiplicity: | [0..*]                                                                                                       |
| <b>Attribute: vehicleToGridCommunicationType</b> |               |                                                                                                              |
|                                                  | Definition:   | Type of communication used between the electric infrastructure and the vehicle as specified by ISO 15118-20. |
|                                                  | Value type:   | VehicleToGridCommunicationTypeList                                                                           |
|                                                  | Multiplicity: | [0..*]                                                                                                       |

[Table 115](#) defines the characteristics of the EnergyInfrastructureStation class.

**Table 115 — EnergyInfrastructureStation Class**

|                                                                                                                                                                                                                                                                              |               |                                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: EnergyInfrastructureStation</b>                                                                                                                                                                                                        |               |                                                                  |
| Definition: A collection of associated refill (fuelling or charging) points which can be of different types. An example would be a fuel dispenser that serves different types of fuel. The vehicle space of the station is often shared between the different refill points. |               |                                                                  |
| Abstract:                                                                                                                                                                                                                                                                    |               |                                                                  |
| Subtype of:                                                                                                                                                                                                                                                                  |               |                                                                  |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                                                   |               |                                                                  |
| <b>Attribute: stationName</b>                                                                                                                                                                                                                                                |               |                                                                  |
|                                                                                                                                                                                                                                                                              | Definition:   | Name of the energy infrastructure station.                       |
|                                                                                                                                                                                                                                                                              | Value type:   | CharacterString                                                  |
|                                                                                                                                                                                                                                                                              | Multiplicity: | [0..1]                                                           |
| <b>Attribute: stationType</b>                                                                                                                                                                                                                                                |               |                                                                  |
|                                                                                                                                                                                                                                                                              | Definition:   | Information on which service level is expected for this station. |
|                                                                                                                                                                                                                                                                              | Value type:   | StationTypeList                                                  |
|                                                                                                                                                                                                                                                                              | Multiplicity: | [1..*]                                                           |

[Table 116](#) defines the characteristics of the ParkingStaticData class.

**Table 116 — ParkingStaticData Class**

|                                                                                                                                    |  |  |
|------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: ParkingStaticData</b>                                                                        |  |  |
| Definition: Static data dealing with car parks or parking that is instigated by the road network operator or the parking operator. |  |  |
| Abstract:                                                                                                                          |  |  |
| Subtype of:                                                                                                                        |  |  |
| Stereotypes: «FeatureType»                                                                                                         |  |  |

[Table 117](#) defines the characteristics of the RefillPoint class.

Table 117 — RefillPoint Class

|                                                                                                                                         |               |                                                                                               |
|-----------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: RefillPoint</b>                                                                                   |               |                                                                                               |
| Definition: Technical infrastructure at a specific location that facilitates an energy refilling process for max.one vehicle at a time. |               |                                                                                               |
| Abstract:                                                                                                                               |               |                                                                                               |
| Subtype of:                                                                                                                             |               |                                                                                               |
| Stereotypes: «FeatureType»                                                                                                              |               |                                                                                               |
| <b>Attribute: deliveryUnit</b>                                                                                                          |               |                                                                                               |
|                                                                                                                                         | Definition:   | Measurement unit used for delivering and accounting the energy provided at this refill point. |
|                                                                                                                                         | Value type:   | DeliveryUnitList                                                                              |
|                                                                                                                                         | Multiplicity: | [0..1]                                                                                        |
| <b>Attribute: reservation</b>                                                                                                           |               |                                                                                               |
|                                                                                                                                         | Definition:   | Information about options for reserving a time slot.                                          |
|                                                                                                                                         | Value type:   | ReservationTypeList                                                                           |
|                                                                                                                                         | Multiplicity: | [0..1]                                                                                        |

## 7.18 "SPaT" package

### 7.18.1 Overall presentation

The SPaT package shall contain the different structures (classes and associations) needed for the SPaT data set.

[Figure 21](#) pictures the classes of the package including the relationships between them.

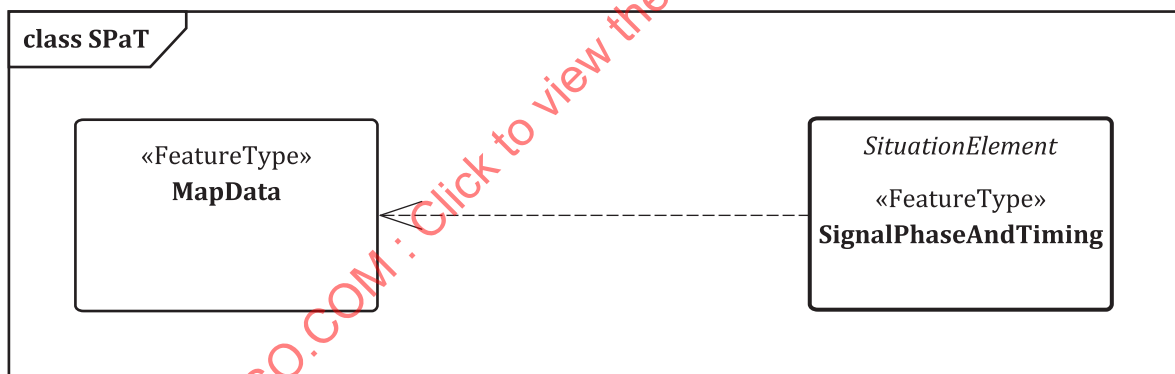


Figure 21 — The "SPaT" class diagram

NOTE The "SignalPhaseAndTiming" class is only present in the class model of this document as a placeholder. It will be specified in a future edition.

### 7.18.2 Class definition

The tables below define the different classes used in this package.

[Table 118](#) defines the characteristics of the MapData class.

Table 118 — MapData Class

|                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: MapData</b>                                                                                     |
| Definition: Data set to convey one or more intersection lane geometry maps within a single message. [SOURCE: Adapted from SAE J2735]. |
| Abstract:                                                                                                                             |
| Subtype of:                                                                                                                           |
| Stereotypes: «FeatureType»                                                                                                            |

Table 119 defines the characteristics of the SignalPhaseAndTiming class.

Table 119 — SignalPhaseAndTiming Class

|                                                                                                                |
|----------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: SignalPhaseAndTiming</b>                                                 |
| Definition: A version identifiable record conveying the current status of one or more signalised intersection. |
| Abstract:                                                                                                      |
| Subtype of: SituationElement                                                                                   |
| Stereotypes: «FeatureType»                                                                                     |

## 7.19 "TrafficElement" package

### 7.19.1 Overall presentation

The TrafficElement package shall contain a collection of data providing information on an occurrence of event on the network which is not decided by a road or traffic operator.

Figure 22 pictures the classes of the package including the relationships between them.

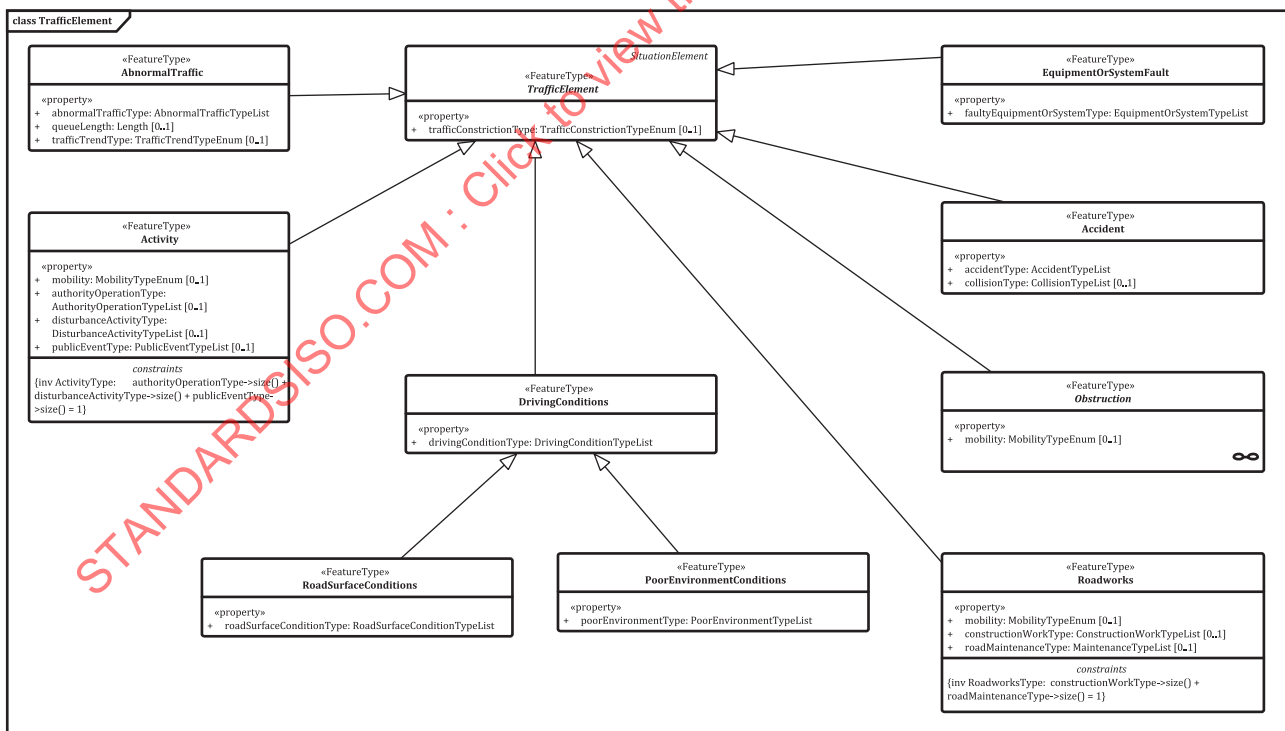


Figure 22 — The "TrafficElement" class diagram

### 7.19.2 Class definition

The tables below define the different classes used in this package.

[Table 120](#) defines the characteristics of the AbnormalTraffic class.

**Table 120 — AbnormalTraffic Class**

|                                                           |               |                                                                                                                                                           |
|-----------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: AbnormalTraffic</b> |               |                                                                                                                                                           |
| Definition: A traffic condition which is not normal.      |               |                                                                                                                                                           |
| Abstract:                                                 |               |                                                                                                                                                           |
| Subtype of: TrafficElement                                |               |                                                                                                                                                           |
| Stereotypes: «FeatureType»                                |               |                                                                                                                                                           |
| <b>Attribute: abnormalTrafficType</b>                     |               |                                                                                                                                                           |
|                                                           | Definition:   | A characterization of the nature of abnormal traffic flow, i.e. specifically relating to the nature of the traffic movement, implying a level of service. |
|                                                           | Value type:   | AbnormalTrafficTypeList                                                                                                                                   |
|                                                           | Multiplicity: |                                                                                                                                                           |
| <b>Attribute: queueLength</b>                             |               |                                                                                                                                                           |
|                                                           | Definition:   | The length of a queue or the average length of queues in separate lanes due to a situation.                                                               |
|                                                           | Value type:   | Length                                                                                                                                                    |
|                                                           | Multiplicity: | [0..1]                                                                                                                                                    |
| <b>Attribute: trafficTrendType</b>                        |               |                                                                                                                                                           |
|                                                           | Definition:   | A characterization of the trend in the traffic conditions at the specified location and direction.                                                        |
|                                                           | Value type:   | TrafficTrendTypeEnum                                                                                                                                      |
|                                                           | Multiplicity: | [0..1]                                                                                                                                                    |

[Table 121](#) defines the characteristics of the Accident class.

**Table 121 — Accident Class**

|                                                                                                                                                                                                    |               |                                                   |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: Accident</b>                                                                                                                                                 |               |                                                   |
| Definition: Accidents are events where one or more vehicles are involved in collisions or in leaving the roadway. These include collisions between vehicles or with other road users or obstacles. |               |                                                   |
| Abstract:                                                                                                                                                                                          |               |                                                   |
| Subtype of: TrafficElement                                                                                                                                                                         |               |                                                   |
| Stereotypes: «FeatureType»                                                                                                                                                                         |               |                                                   |
| <b>Attribute: accidentType</b>                                                                                                                                                                     |               |                                                   |
|                                                                                                                                                                                                    | Definition:   | A characterization of the nature of the accident. |
|                                                                                                                                                                                                    | Value type:   | AccidentTypeList                                  |
|                                                                                                                                                                                                    | Multiplicity: |                                                   |
| <b>Attribute: collisionType</b>                                                                                                                                                                    |               |                                                   |
|                                                                                                                                                                                                    | Definition:   | Identifies a type of collision.                   |
|                                                                                                                                                                                                    | Value type:   | CollisionTypeList                                 |
|                                                                                                                                                                                                    | Multiplicity: | [0..1]                                            |

[Table 122](#) defines the characteristics of the Activity class.

Table 122 — Activity Class

|                                                                                                                                                                      |               |                                                                                                           |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: Activity</b>                                                                                                                   |               |                                                                                                           |
| Definition: Deliberate human action external to the traffic stream or roadway which could disrupt traffic.                                                           |               |                                                                                                           |
| Abstract:                                                                                                                                                            |               |                                                                                                           |
| Subtype of: TrafficElement                                                                                                                                           |               |                                                                                                           |
| Stereotypes: «FeatureType»                                                                                                                                           |               |                                                                                                           |
| <b>Attribute: mobility</b>                                                                                                                                           |               |                                                                                                           |
|                                                                                                                                                                      | Definition:   | Mobility of the activity.                                                                                 |
|                                                                                                                                                                      | Value type:   | MobilityTypeEnum                                                                                          |
|                                                                                                                                                                      | Multiplicity: | [0..1]                                                                                                    |
| <b>Attribute: authorityOperationType</b>                                                                                                                             |               |                                                                                                           |
|                                                                                                                                                                      | Definition:   | Authority-initiated operation or activity that could disrupt traffic.                                     |
|                                                                                                                                                                      | Value type:   | AuthorityOperationTypeList                                                                                |
|                                                                                                                                                                      | Multiplicity: | [0..1]                                                                                                    |
| <b>Attribute: disturbanceActivityType</b>                                                                                                                            |               |                                                                                                           |
|                                                                                                                                                                      | Definition:   | Includes all situations of a public disorder type or of an alert type, with potential to disrupt traffic. |
|                                                                                                                                                                      | Value type:   | DisturbanceActivityTypeList                                                                               |
|                                                                                                                                                                      | Multiplicity: | [0..1]                                                                                                    |
| <b>Attribute: publicEventType</b>                                                                                                                                    |               |                                                                                                           |
|                                                                                                                                                                      | Definition:   | Type of public event which could disrupt traffic.                                                         |
|                                                                                                                                                                      | Value type:   | PublicEventTypeList                                                                                       |
|                                                                                                                                                                      | Multiplicity: | [0..1]                                                                                                    |
| Constraint on class: <<Invariant>>                                                                                                                                   |               |                                                                                                           |
| Natural language: An "Activity" instance shall only have one of the following three types: "authorityOperationType", "disturbanceActivityType" or "publicEventType". |               |                                                                                                           |
| OCL: inv ActivityType: authorityOperationType->size() + disturbanceActivityType->size() + publicEvent-<br>Type->size() = 1                                           |               |                                                                                                           |

[Table 123](#) defines the characteristics of the DrivingConditions class.

Table 123 — DrivingConditions Class

|                                                                                           |               |                                                                  |
|-------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: DrivingConditions</b>                               |               |                                                                  |
| Definition: Any conditions which have the potential to degrade normal driving conditions. |               |                                                                  |
| Abstract:                                                                                 |               |                                                                  |
| Subtype of: TrafficElement                                                                |               |                                                                  |
| Stereotypes: «FeatureType»                                                                |               |                                                                  |
| <b>Attribute: drivingConditionType</b>                                                    |               |                                                                  |
|                                                                                           | Definition:   | Description of the driving conditions at the specified location. |
|                                                                                           | Value type:   | DrivingConditionTypeList                                         |
|                                                                                           | Multiplicity: |                                                                  |

[Table 124](#) defines the characteristics of the EquipmentOrSystemFault class.



Table 124 — EquipmentOrSystemFault Class

|                                                                                                                                                                          |               |                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: EquipmentOrSystemFault</b>                                                                                                         |               |                                                                                                      |
| Definition: Equipment or system which is faulty, malfunctioning or not in a fully operational state that can be of interest or concern to road operators and road users. |               |                                                                                                      |
| Abstract:                                                                                                                                                                |               |                                                                                                      |
| Subtype of: TrafficElement                                                                                                                                               |               |                                                                                                      |
| Stereotypes: «FeatureType»                                                                                                                                               |               |                                                                                                      |
| <b>Attribute: faultyEquipmentOrSystemType</b>                                                                                                                            |               |                                                                                                      |
|                                                                                                                                                                          | Definition:   | The type of equipment or system which is faulty, malfunctioning or not in a fully operational state. |
|                                                                                                                                                                          | Value type:   | EquipmentOrSystemTypeList                                                                            |
|                                                                                                                                                                          | Multiplicity: |                                                                                                      |

[Table 125](#) defines the characteristics of the Obstruction class.

Table 125 — Obstruction Class

|                                                                                                                                                                                                                                                        |               |                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: Obstruction</b>                                                                                                                                                                                                  |               |                                  |
| Definition: Any stationary or moving obstacle of a physical nature (e.g. obstacles or vehicles from an earlier accident, shed loads on carriageway, rock fall, abnormal or dangerous loads, or animals, etc.) which could disrupt or endanger traffic. |               |                                  |
| Abstract: Abstract                                                                                                                                                                                                                                     |               |                                  |
| Subtype of: TrafficElement                                                                                                                                                                                                                             |               |                                  |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                             |               |                                  |
| <b>Attribute: mobility</b>                                                                                                                                                                                                                             |               |                                  |
|                                                                                                                                                                                                                                                        | Definition:   | The mobility of the obstruction. |
|                                                                                                                                                                                                                                                        | Value type:   | MobilityTypeEnum                 |
|                                                                                                                                                                                                                                                        | Multiplicity: | [0..1]                           |

[Table 126](#) defines the characteristics of the PoorEnvironmentConditions class.

Table 126 — PoorEnvironmentConditions Class

|                                                                                                     |               |                                                                          |
|-----------------------------------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: PoorEnvironmentConditions</b>                                 |               |                                                                          |
| Definition: Any environmental conditions which can be affecting the driving conditions on the road. |               |                                                                          |
| Abstract:                                                                                           |               |                                                                          |
| Subtype of: DrivingConditions                                                                       |               |                                                                          |
| Stereotypes: «FeatureType»                                                                          |               |                                                                          |
| <b>Attribute: poorEnvironmentType</b>                                                               |               |                                                                          |
|                                                                                                     | Definition:   | The type of environment condition which is affecting driving conditions. |
|                                                                                                     | Value type:   | PoorEnvironmentTypeList                                                  |
|                                                                                                     | Multiplicity: |                                                                          |

[Table 127](#) defines the characteristics of the RoadSurfaceConditions class.

Table 127 — RoadSurfaceConditions Class

|                                                                                                                                                                                                              |               |                                                                                                                                        |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: RoadSurfaceConditions</b>                                                                                                                                              |               |                                                                                                                                        |
| Definition: Conditions of the road surface which can affect driving conditions. These can be related to the weather (e.g. ice, snow, etc.) or to other conditions (e.g. oil, mud, leaves, etc. on the road). |               |                                                                                                                                        |
| Abstract:                                                                                                                                                                                                    |               |                                                                                                                                        |
| Subtype of: DrivingConditions                                                                                                                                                                                |               |                                                                                                                                        |
| Stereotypes: «FeatureType»                                                                                                                                                                                   |               |                                                                                                                                        |
| <b>Attribute: roadSurfaceConditionType</b>                                                                                                                                                                   |               |                                                                                                                                        |
|                                                                                                                                                                                                              | Definition:   | The type of road surface condition that is related to the driving conditions or the weather which is affecting the driving conditions. |
|                                                                                                                                                                                                              | Value type:   | RoadSurfaceConditionTypeList                                                                                                           |
|                                                                                                                                                                                                              | Multiplicity: |                                                                                                                                        |

[Table 128](#) defines the characteristics of the Roadworks class.

Table 128 — Roadworks Class

|                                                                                                                                                                                                                                                 |               |                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------------------------------|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: Roadworks</b>                                                                                                                                                                                             |               |                                                                              |
| Definition: Highway or street maintenance, installation and construction activities that can potentially affect traffic operations.                                                                                                             |               |                                                                              |
| Abstract:                                                                                                                                                                                                                                       |               |                                                                              |
| Subtype of: TrafficElement                                                                                                                                                                                                                      |               |                                                                              |
| Stereotypes: «FeatureType»                                                                                                                                                                                                                      |               |                                                                              |
| <b>Attribute: mobility</b>                                                                                                                                                                                                                      |               |                                                                              |
|                                                                                                                                                                                                                                                 | Definition:   | The mobility of the road works.                                              |
|                                                                                                                                                                                                                                                 | Value type:   | MobilityTypeEnum                                                             |
|                                                                                                                                                                                                                                                 | Multiplicity: | [0..1]                                                                       |
| <b>Attribute: constructionWorkType</b>                                                                                                                                                                                                          |               |                                                                              |
|                                                                                                                                                                                                                                                 | Definition:   | The type of construction work being performed.                               |
|                                                                                                                                                                                                                                                 | Value type:   | ConstructionWorkTypeList                                                     |
|                                                                                                                                                                                                                                                 | Multiplicity: | [0..1]                                                                       |
| <b>Attribute: roadMaintenanceType</b>                                                                                                                                                                                                           |               |                                                                              |
|                                                                                                                                                                                                                                                 | Definition:   | The type of road maintenance or installation work at the specified location. |
|                                                                                                                                                                                                                                                 | Value type:   | MaintenanceTypeList                                                          |
|                                                                                                                                                                                                                                                 | Multiplicity: | [0..1]                                                                       |
| Constraint on class: <<Invariant>><br>Natural language: A "Roadworks" instance shall have either a construction work type or a road maintenance type.<br>OCL: inv RoadworksType: constructionWorkType->size() + roadMaintenanceType->size() = 1 |               |                                                                              |

[Table 129](#) defines the characteristics of the TrafficElement class.

Table 129 — "TrafficElement" Class

|                                                                                                                                     |  |  |
|-------------------------------------------------------------------------------------------------------------------------------------|--|--|
| <b>Class &lt;&lt;FeatureType&gt;&gt;: TrafficElement</b>                                                                            |  |  |
| Definition: An event which is not planned by the traffic operator, which is affecting, or has the potential to affect traffic flow. |  |  |
| Abstract: Abstract                                                                                                                  |  |  |
| Subtype of: SituationElement                                                                                                        |  |  |
| Stereotypes: «FeatureType»                                                                                                          |  |  |
| <b>Attribute: trafficConstrictionType</b>                                                                                           |  |  |

Table 129 (continued)

|  |               |                                                                                           |
|--|---------------|-------------------------------------------------------------------------------------------|
|  | Definition:   | The type of constriction to which traffic is subjected as a result of an unplanned event. |
|  | Value type:   | TrafficConstrictionTypeEnum                                                               |
|  | Multiplicity: | [0..1]                                                                                    |

## 7.20 "Obstruction" package

### 7.20.1 Overall presentation

The Obstruction package shall contain a collection of data providing information on any stationary or moving obstacle of a physical nature (e.g. obstacles or vehicles from an earlier accident, shed loads on carriageway, rock fall, abnormal or dangerous loads, animals, etc.) which could disrupt or endanger traffic.

Figure 23 pictures the classes of the package including the relationships between them.

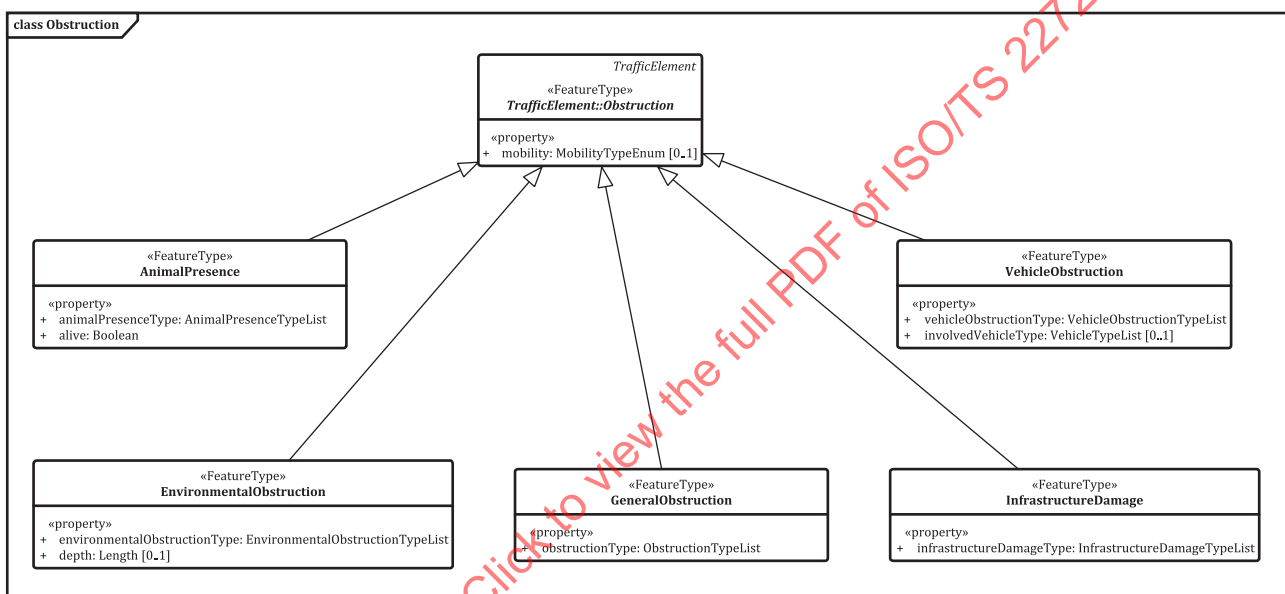


Figure 23 — The "Obstruction" class diagram

### 7.20.2 Class definition

The tables below define the different classes used in this package.

Table 130 defines the characteristics of the AnimalPresence class.

Table 130 — AnimalPresence Class

| Class <<FeatureType>>: AnimalPresence                                          |               |                                                                 |
|--------------------------------------------------------------------------------|---------------|-----------------------------------------------------------------|
| Definition: An obstruction on the road resulting from the presence of animals. |               |                                                                 |
| Abstract:                                                                      |               |                                                                 |
| Subtype of: Obstruction                                                        |               |                                                                 |
| Stereotypes: «FeatureType»                                                     |               |                                                                 |
| Attribute: animalPresenceType                                                  |               |                                                                 |
|                                                                                | Definition:   | Indicates the nature of animals present on or near the roadway. |
|                                                                                | Value type:   | AnimalPresenceTypeList                                          |
|                                                                                | Multiplicity: |                                                                 |

**Table 130** (continued)

| <b>Attribute: alive</b> |               |                                                                                                                 |
|-------------------------|---------------|-----------------------------------------------------------------------------------------------------------------|
|                         | Definition:   | Indicates whether the identified animals are dead (immobile) or alive (potentially mobile). ("true" = "alive"). |
|                         | Value type:   | Boolean                                                                                                         |
|                         | Multiplicity: |                                                                                                                 |

[Table 131](#) defines the characteristics of the EnvironmentalObstruction class.

**Table 131 — EnvironmentalObstruction Class**

| <b>Class &lt;&lt;FeatureType&gt;&gt;: EnvironmentalObstruction</b>            |               |                                                                                       |
|-------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
| Definition: An obstruction on the road resulting from an environmental cause. |               |                                                                                       |
| Abstract:                                                                     |               |                                                                                       |
| Subtype of: Obstruction                                                       |               |                                                                                       |
| Stereotypes: «FeatureType»                                                    |               |                                                                                       |
| <b>Attribute: environmentalObstructionType</b>                                |               |                                                                                       |
|                                                                               | Definition:   | Characterization of an obstruction on the road resulting from an environmental cause. |
|                                                                               | Value type:   | EnvironmentalObstructionTypeList                                                      |
|                                                                               | Multiplicity: |                                                                                       |
| <b>Attribute: depth</b>                                                       |               |                                                                                       |
|                                                                               | Definition:   | The depth of flooding or of snow on the road.                                         |
|                                                                               | Value type:   | Length                                                                                |
|                                                                               | Multiplicity: | [0..1]                                                                                |

[Table 132](#) defines the characteristics of the GeneralObstruction class.

**Table 132 — GeneralObstruction Class**

| <b>Class &lt;&lt;FeatureType&gt;&gt;: GeneralObstruction</b>                                                                                      |               |                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------------------------------------|
| Definition: Any stationary or moving obstacle of a physical nature, other than of an animal, vehicle, environmental, or damaged equipment nature. |               |                                                      |
| Abstract:                                                                                                                                         |               |                                                      |
| Subtype of: Obstruction                                                                                                                           |               |                                                      |
| Stereotypes: «FeatureType»                                                                                                                        |               |                                                      |
| <b>Attribute: obstructionType</b>                                                                                                                 |               |                                                      |
|                                                                                                                                                   | Definition:   | Characterization of the type of general obstruction. |
|                                                                                                                                                   | Value type:   | ObstructionTypeList                                  |
|                                                                                                                                                   | Multiplicity: |                                                      |

[Table 133](#) defines the characteristics of the InfrastructureDamage class.

**Table 133 — InfrastructureDamage Class**

| <b>Class &lt;&lt;FeatureType&gt;&gt;: InfrastructureDamage</b>                                                                       |  |  |
|--------------------------------------------------------------------------------------------------------------------------------------|--|--|
| Definition: An obstruction on the road resulting from the failure or damage of infrastructure on, under, above or close to the road. |  |  |
| Abstract:                                                                                                                            |  |  |
| Subtype of: Obstruction                                                                                                              |  |  |
| Stereotypes: «FeatureType»                                                                                                           |  |  |

**Table 133** (continued)

| <b>Attribute: infrastructureDamageType</b> |               |                                                                                                                                              |
|--------------------------------------------|---------------|----------------------------------------------------------------------------------------------------------------------------------------------|
|                                            | Definition:   | Characterization of an obstruction on the road resulting from the failure or damage of infrastructure on, under, above or close to the road. |
|                                            | Value type:   | InfrastructureDamageTypeList                                                                                                                 |
|                                            | Multiplicity: |                                                                                                                                              |

[Table 134](#) defines the characteristics of the VehicleObstruction class.

**Table 134 — VehicleObstruction Class**

| <b>Class &lt;&lt;FeatureType&gt;&gt;: VehicleObstruction</b>           |               |                                                                                |
|------------------------------------------------------------------------|---------------|--------------------------------------------------------------------------------|
| Definition: An obstruction on the road caused by one or more vehicles. |               |                                                                                |
| Abstract:                                                              |               |                                                                                |
| Subtype of: Obstruction                                                |               |                                                                                |
| Stereotypes: «FeatureType»                                             |               |                                                                                |
| <b>Attribute: vehicleObstructionType</b>                               |               |                                                                                |
|                                                                        | Definition:   | Characterization of an obstruction on the road caused by one or more vehicles. |
|                                                                        | Value type:   | VehicleObstructionTypeList                                                     |
|                                                                        | Multiplicity: |                                                                                |
| <b>Attribute: involvedVehicleType</b>                                  |               |                                                                                |
|                                                                        | Definition:   | Type of vehicle involved.                                                      |
|                                                                        | Value type:   | VehicleTypeList                                                                |
|                                                                        | Multiplicity: | [0..1]                                                                         |

## Annex A (informative)

### Traceability matrices

#### A.1 Introduction

The tables in this annex provide traceability information between a class of a given package in the generic data model and the corresponding classes of the data model for each traffic information service.

The matrix helps to find corresponding classes in the data models and provides information about the capability of the generic data model.

#### A.2 "DataSet" package

There is no traceability matrix for this package.

#### A.3 "Common" package

There is no traceability matrix for this package.

#### A.4 "CodeLists" package

There is no traceability matrix for this package.

#### A.5 "DataManagement" package

[Table A.1](#) shows the traceability matrix for the DataManagement package.

**Table A.1 — LifeCycleManagement Class table**

| Connector  |                                                                |                               |
|------------|----------------------------------------------------------------|-------------------------------|
| Type       | From                                                           | To                            |
| Dependency | «DataType»DataSet::Common::DataManagement::LifeCycleManagement | «FeatureType»SituationElement |

#### A.6 "DataQuality" package

[Table A.2](#) shows the traceability matrix for the DataQuality package.

Table A.2 — Confidence Class table

| Connector |                                                                                                  |                          |
|-----------|--------------------------------------------------------------------------------------------------|--------------------------|
| Type      | From                                                                                             | To                       |
| Trace     | «D2Class»D2Payload::Common::Classes::Fault::Fault                                                | «DataType»<br>Confidence |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::AltitudeConfidence | «DataType»<br>Confidence |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::PosConfidenceEllipse             | «DataType»<br>Confidence |
| Trace     | TPEG model::TPEGDataTypes::Datatypes::Probability                                                | «DataType»<br>Confidence |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::Fault::VmsFault                            | «DataType»<br>Confidence |

## A.7 "DataTypes" package

Tables A.3, A.4, A.5, A.6, A.7, A.8 show the traceability matrices for the “DataTypes” package.

Table A.3 — Details Class table

| Connector |                                                                            |                       |
|-----------|----------------------------------------------------------------------------|-----------------------|
| Type      | From                                                                       | To                    |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::Impact::Delays | «DataType»<br>Details |
| Trace     | TPEG model::TrafficEventCompact::Cause                                     | «DataType»<br>Details |
| Trace     | TPEG model::TrafficEventCompact::DirectCause                               | «DataType»<br>Details |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec002:CauseCode  | «DataType»<br>Details |

Table A.4 — Impact Class table

| Connector |                                                                            |                      |
|-----------|----------------------------------------------------------------------------|----------------------|
| Type      | From                                                                       | To                   |
| Trace     | TPEG model::TPEGDataTypes::Datatypes::Duration                             | «DataType»<br>Impact |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::Impact::Impact | «DataType»<br>Impact |

Table A.5 — Mobility Class table

| Connector |                                                                                   |                        |
|-----------|-----------------------------------------------------------------------------------|------------------------|
| Type      | From                                                                              | To                     |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::Speed                      | «DataType»<br>Mobility |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::Mobility              | «DataType»<br>Mobility |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec116:RegulatoryMeasure | «DataType»<br>Mobility |

Table A.6 — Source Class table

| Connector |                                             |                      |
|-----------|---------------------------------------------|----------------------|
| Type      | From                                        | To                   |
| Trace     | «D2Class»D2Payload::Common::Classes::Source | «DataType»<br>Source |

Table A.7 — Validity Class table

| Connector |                                                                                                                  |                        |
|-----------|------------------------------------------------------------------------------------------------------------------|------------------------|
| Type      | From                                                                                                             | To                     |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::Validity                                                          | «DataType»<br>Validity |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::ValidityPeriods                               | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::TimePeriodOfDay                                                   | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::DayWeekMonth                                                      | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::PayloadPublication::RoadTrafficData::Classes::DataValue::DateTimeValue                       | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::OverallPeriod                                                     | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::PublicHoliday                                                     | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Extension::TrafficSignals::SignalPhaseAndTimingPublication::TimeChangeDetails                | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::InstanceOfDayWithinMonth                                          | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::SpecialDay                                                        | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::Common::Classes::Validity::CalendarWeekWithinMonth                                           | «DataType»<br>Validity |
| Trace     | «D2Class»D2Payload::PayloadPublication::RoadTrafficData::Classes::PhysicalQuantity::TimeProfiledPhysicalQuantity | «DataType»<br>Validity |

Table A.8 — VehicleCharacteristics Class table

| Connector |                                                                                                    |                                      |
|-----------|----------------------------------------------------------------------------------------------------|--------------------------------------|
| Type      | From                                                                                               | To                                   |
| Trace     | «D2Class»D2Payload::PayloadPublication::RoadTrafficData::Classes::AxleCharacteristics              | «DataType»<br>VehicleCharacteristics |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::VehicleCharacteristicsFixValues | «DataType»<br>VehicleCharacteristics |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::AxleWightLimits                    | «DataType»<br>VehicleCharacteristics |
| Trace     | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::VehicleCharacteristics                | «DataType»<br>VehicleCharacteristics |
| Trace     | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::GrossWeightCharacteristic             | «DataType»<br>VehicleCharacteristics |



Table A.8 (continued)

|       |                                                                                                         |                                      |
|-------|---------------------------------------------------------------------------------------------------------|--------------------------------------|
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::External::PassengerCapacity                      | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::Emissions                                  | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::VehicleCharacteristicsRangesList    | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::External::EnvironmentalCharacteristics           | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::TrailerCharacteristicsList          | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::CompleteVehicleCharacteristics      | «DataType»<br>VehicleCharacteristics |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec009:VehicleType                             | «DataType»<br>VehicleCharacteristics |
| Trace | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                           | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::HeightCharacteristic                       | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::Vehicle::AxleWeight                                                | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»DENM model::CommonDataDictionary::Data-Frames::DangerousGoodsExtended                          | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::External::ExhaustEmissionValues                  | «DataType»<br>VehicleCharacteristics |
| Trace | TPEG model::TPEGDataTypes::Datatypes::Velocity                                                          | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::External::VehicleDimensions                      | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::LoadType                            | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::TrailerCharacteristicsFixValuesList | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::Vehicle::Vehicle                                                   | «DataType»<br>VehicleCharacteristics |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec007:RestrictionType                         | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::VehicleCharacteristicsFixValuesList | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::Vehicle::AxleSpacing                                               | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::IVISpecific::TrailerCharacteristics              | «DataType»<br>VehicleCharacteristics |
| Trace | TPEG model::TrafficEventCompact::Advice                                                                 | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::Data-Frames::External::SoundLevel                             | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::Hazardous-Materials                                                | «DataType»<br>VehicleCharacteristics |

Table A.8 (continued)

|       |                                                                                                     |                                      |
|-------|-----------------------------------------------------------------------------------------------------|--------------------------------------|
| Trace | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::LengthCharacteristic                   | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::PayloadPublication::RoadTrafficData::Classes::DataValue::AxleFlowValue          | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::TractorCharacteristics           | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::VehicleCharacteristicsRanges     | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::Speed                               | «DataType»<br>VehicleCharacteristics |
| Trace | TPEG model::TPEGDataTypes::Datatypes::Weight                                                        | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::NumberOfAxlesCharacteristic            | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»D2Payload::Common::Classes::VehicleCharacteristics::WidthCharacteristic                    | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::TrainCharacteristics             | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::VehicleWeightLimits                 | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::VehicleCharacteristicsList       | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::TrailerCharacteristicsRangesList | «DataType»<br>VehicleCharacteristics |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::EuVehicleCategoryCode               | «DataType»<br>VehicleCharacteristics |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                          | «DataType»<br>VehicleCharacteristics |

## A.8 "Enumerations" package

There is no traceability matrix for this package

## A.9 "LocationReference" package

[Tables A.9](#), [A.10](#), [A.11](#), [A.12](#), [A.13](#), [A.14](#), [A.15](#), [A.16](#), [A.17](#) show the traceability matrices for the "LocationReference" package.

Table A.9 — AreaLocation Class table

| Connector |                                                                                                             |                            |
|-----------|-------------------------------------------------------------------------------------------------------------|----------------------------|
| Type      | From                                                                                                        | To                         |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrGridLocationReference | «DataType»<br>AreaLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrAreaLocationReference | «DataType»<br>AreaLocation |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                              | «DataType»<br>AreaLocation |

Table A.9 (continued)

|       |                                                                                                                   |                            |
|-------|-------------------------------------------------------------------------------------------------------------------|----------------------------|
| Trace | «External»TPEG model::TrafficEventCompact::SegmentLocation                                                        | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AreaDestination                                       | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrClosedLineLocationReference | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegAreaLocation::TpegGeometricArea          | «DataType»<br>AreaLocation |
| Trace | «External»TPEG model::LRC::GLRLocationReferenceLink                                                               | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::NamedArea::NamedArea                                  | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::Common::Classes::Validity::NamedArea                                                          | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegAreaLocation::TpegNamedOnlyArea          | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrPolygonLocationReference    | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::NamedArea::IsoNamedArea                               | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::NamedArea::NutsNamedArea                              | «DataType»<br>AreaLocation |
| Trace | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                                             | «DataType»<br>AreaLocation |
| Trace | «External»TPEG model::LRC::DLR1LocationReferenceLink                                                              | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrRectangle                   | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegAreaLocation::TpegAreaLocation           | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCArea::AlertCArea                        | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AreaLocation                                          | «DataType»<br>AreaLocation |
| Trace | «External»TPEG model::TrafficEventCompact::ProblemLocation                                                        | «DataType»<br>AreaLocation |
| Trace | «External»TPEG model::LRC::TPEGLocationReferenceLink                                                              | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrRectangleLocationReference  | «DataType»<br>AreaLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrCircleLocationReference     | «DataType»<br>AreaLocation |

Table A.10 — LinearLocation Class table

| Connector |                                                                                                                                     |                              |
|-----------|-------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Type      | From                                                                                                                                | To                           |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                                                                          | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::TrafficEventCompact::ProblemLocation                                                                          | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::Extension::TrafficSignals::MapDataPublication::RoadSegment                                                      | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                                                      | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                                                               | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearReferencing::PointAlongLinearElement::LinearElementByCode         | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrLinear::OpenlrLineLocationReference                       | «DataType»<br>LinearLocation |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::LocationContainer                                               | «DataType»<br>LinearLocation |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::PathHistory                                                                  | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod4Linear::AlertCMethod4Linear                        | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearReferencing::PointAlongLinearElement::LinearElementByPoints       | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod2Linear::AlertCMethod2Linear                        | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::LRC::GLRLocationReferenceLink                                                                                 | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCLinearByCode::AlertCLinearByCode                          | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::ItineraryByReference                                                    | «DataType»<br>LinearLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearReferencing::LinearWithinLinearElement::LinearWithinLinearElement | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::LRC::DLR1LocationReferenceLink                                                                                | «DataType»<br>LinearLocation |
| Trace     | «D2VersionedIdentifiable»D2Payload::LocationReferencing::PredefinedLocationsPublication::PredefinedItinerary                        | «DataType»<br>LinearLocation |
| Trace     | «External»TPEG model::LRC::TPEGLocationReferenceLink                                                                                | «DataType»<br>LinearLocation |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::Segment                                                          | «DataType»<br>LinearLocation |

Table A.10 (continued)

|       |                                                                                                                                   |                              |
|-------|-----------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegLinearLocation::TpegLinearLocation                       | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::Itinerary                                                             | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearReferencing::PointAlongLinearElement::LinearElementByLineString | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrLinear::OpenlrLinear                                    | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::ItineraryByIndexedLocations                                           | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearReferencing::PointAlongLinearElement::LinearElement             | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::NetworkLocation                                                       | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::LinearLocation                                                        | «DataType»<br>LinearLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCLinear                                                  | «DataType»<br>LinearLocation |
| Trace | «D2Class»DENM model::CommonDataDictionary::DataFrames::EventHistory                                                               | «DataType»<br>LinearLocation |

Table A.11 — LineString Class table

| Connector |                                                                                       |                          |
|-----------|---------------------------------------------------------------------------------------|--------------------------|
| Type      | From                                                                                  | To                       |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                        | «DataType»<br>LineString |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                            | «DataType»<br>LineString |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::PolygonalLine      | «DataType»<br>LineString |
| Trace     | «External»TPEG model::LRC::DLR1LocationReference-Link                                 | «DataType»<br>LineString |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::PathHistory                    | «DataType»<br>LineString |
| Trace     | «External»TPEG model::TrafficEventCompact::ProblemLocation                            | «DataType»<br>LineString |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                 | «DataType»<br>LineString |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::LocationContainer | «DataType»<br>LineString |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::Gml::GmlLineString        | «DataType»<br>LineString |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::ComputedSegment    | «DataType»<br>LineString |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::Gml::GmlLinearRing        | «DataType»<br>LineString |

Table A.11 (continued)

|       |                                                                                                                   |                          |
|-------|-------------------------------------------------------------------------------------------------------------------|--------------------------|
| Trace | «External»TPEG model::LRC::TPEGLocationReference-Link                                                             | «DataType»<br>LineString |
| Trace | «D2VersionedIdentifiable»D2Payload::LocationReferencing::PredefinedLocationsPublication::PredefinedLocation       | «DataType»<br>LineString |
| Trace | «External»TPEG model::LRC::GLRLocationReferenceLink                                                               | «DataType»<br>LineString |
| Trace | «D2VersionedIdentifiable»D2Payload::LocationReferencing::PredefinedLocationsPublication::Predefined-LocationGroup | «DataType»<br>LineString |
| Trace | «D2Class»D2Payload::LocationReferencing::PredefinedLocationsPublication::PredefinedLocationReference              | «DataType»<br>LineString |

Table A.12 — LocationReference Class table

| Connector |                                                                                             |                                 |
|-----------|---------------------------------------------------------------------------------------------|---------------------------------|
| Type      | From                                                                                        | To                              |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCLocation          | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::Location                        | «DataType»<br>LocationReference |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::LocationContainer       | «DataType»<br>LocationReference |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                       | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LocationReference               | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LocationByReference             | «DataType»<br>LocationReference |
| Trace     | «External»TPEG model::LRC::GLRLocationReferenceLink                                         | «DataType»<br>LocationReference |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::ComputedSegment          | «DataType»<br>LocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                                  | «DataType»<br>LocationReference |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::MapReference             | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::ExternalReferencing             | «DataType»<br>LocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::ProblemLocation                                  | «DataType»<br>LocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                              | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsManagedLogicalLocation | «DataType»<br>LocationReference |
| Trace     | TPEG model::LRC::LocationReferencingContainer                                               | «DataType»<br>LocationReference |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::LocationGroupByReference        | «DataType»<br>LocationReference |



**Table A.12 (continued)**

|       |                                                                                 |                                 |
|-------|---------------------------------------------------------------------------------|---------------------------------|
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::LocationGroupByList | «DataType»<br>LocationReference |
| Trace | «D2Class»IVI model::IviContainer::MapLocationContainer                          | «DataType»<br>LocationReference |
| Trace | «External»TPEG model::LRC::TPEGLocationReferenceLink                            | «DataType»<br>LocationReference |
| Trace | «External»TPEG model::LRC::DLR1LocationReferenceLink                            | «DataType»<br>LocationReference |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::LocationGroup       | «DataType»<br>LocationReference |

**Table A.13 — MultiPolygon Class table**

| Connector |                                                                                  |                            |
|-----------|----------------------------------------------------------------------------------|----------------------------|
| Type      | From                                                                             | To                         |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                       | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::LRC::TPEGLocationReferenceLink                             | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::TrafficEventCompact::ProblemLocation                       | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                   | «DataType»<br>MultiPolygon |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::Gml::GmlMultiPolygon | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::LRC::GLRLocationReferenceLink                              | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::LRC::DLR1LocationReferenceLink                             | «DataType»<br>MultiPolygon |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                            | «DataType»<br>MultiPolygon |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::Gml::GmlPolygon      | «DataType»<br>MultiPolygon |

**Table A.14 — PointByCoordinates Class table**

| Connector |                                                                                                |                                  |
|-----------|------------------------------------------------------------------------------------------------|----------------------------------|
| Type      | From                                                                                           | To                               |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::EventPoint                              | «DataType»<br>PointByCoordinates |
| Trace     | «External»TPEG model::LRC::GLRLocationReferenceLink                                            | «DataType»<br>PointByCoordinates |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::PointCoordinates | «DataType»<br>PointByCoordinates |
| Trace     | «External»TPEG model::LRC::DLR1LocationReferenceLink                                           | «DataType»<br>PointByCoordinates |
| Trace     | «External»TPEG model::LRC::TPEGLocationReferenceLink                                           | «DataType»<br>PointByCoordinates |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                 | «DataType»<br>PointByCoordinates |

**Table A.14 (continued)**

|       |                                                                                                      |                                  |
|-------|------------------------------------------------------------------------------------------------------|----------------------------------|
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::PointByCoordinates     | «DataType»<br>PointByCoordinates |
| Trace | «D2Class»DENM model::CommonDataDictionary::DataFrames::PathPoint                                     | «DataType»<br>PointByCoordinates |
| Trace | «External»TPEG model::TrafficEventCompact::ProblemLocation                                           | «DataType»<br>PointByCoordinates |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrGeoCoordinate | «DataType»<br>PointByCoordinates |
| Trace | «External»TPEG model::TrafficEventCompact::SegmentLocation                                           | «DataType»<br>PointByCoordinates |
| Trace | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                                | «DataType»<br>PointByCoordinates |
| Trace | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::LocationContainer                | «DataType»<br>PointByCoordinates |

**Table A.15 — PointLocation Class table**

| Connector |                                                                                                                   |                             |
|-----------|-------------------------------------------------------------------------------------------------------------------|-----------------------------|
| Type      | From                                                                                                              | To                          |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::PathPoint                                                  | «DataType»<br>PointLocation |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                                                        | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod2PrimaryPointLocation             | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegFramedPoint           | «DataType»<br>PointLocation |
| Trace     | «External»TPEG model::LRC::DLR1LocationReferenceLink                                                              | «DataType»<br>PointLocation |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                                             | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod4SecondaryPointLocation           | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrPointAlongLine             | «DataType»<br>PointLocation |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::LocationContainer                             | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrLastLocationReferencePoint | «DataType»<br>PointLocation |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::AbsolutePosition                               | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::HeightCoordinate                    | «DataType»<br>PointLocation |
| Trace     | «External»TPEG model::LRC::TMCLocationReferenceLink                                                               | «DataType»<br>PointLocation |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrBaseReferencePoint                      | «DataType»<br>PointLocation |



Table A.15 (continued)

|       |                                                                                                               |                             |
|-------|---------------------------------------------------------------------------------------------------------------|-----------------------------|
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::AbsolutePositionsWAltitude                 | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::PayloadPublication::Parking::Classes::PointByJunction::PointLocationForParking            | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::LRC::ETLLocationReferenceLink                                                           | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::DeltaPositions                             | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::PointDestination                                  | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::LRC::VICSLinkReferenceLink                                                              | «DataType»<br>PointLocation |
| Trace | «D2Class»DENM model::CommonDataDictionary::DataFrames::ReferencePosition                                      | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod4Point::AlertCMethod4Point    | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::PointLocation                                     | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrLocationReferencePoint | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCPoint                               | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                                | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod2Point::AlertCMethod2Point    | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegJunction          | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrPointLocationReference | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::LRC::KoreanNodeLinkLocationReferenceLink                                                | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegPointLocation     | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegSimplePoint       | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegPoint             | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::AbsolutePositionWAltitude                  | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::DeltaReferencePositions                    | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrPoiWithAccessPoint     | «DataType»<br>PointLocation |

Table A.15 (continued)

|       |                                                                                                              |                             |
|-------|--------------------------------------------------------------------------------------------------------------|-----------------------------|
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::DeltaReferencePosition                       | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::TpegLoc::TpegPointLocation::TpegNonJunctionPoint | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::ReferencePosition                            | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::Altitude                                     | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::TrafficEventCompact::ProblemLocation                                                   | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod2SecondaryPointLocation      | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::AbsolutePositions                         | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrArea::OpenlrPolygonCorners         | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::AlertC::AlertCMethod4PrimaryPointLocation        | «DataType»<br>PointLocation |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::IVISpecific::DeltaPosition                             | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::LRC::GLRLocationReference-Link                                                         | «DataType»<br>PointLocation |
| Trace | «External»TPEG model::LRC::TPEGLocationReference-Link                                                        | «DataType»<br>PointLocation |
| Trace | «D2Class»DENM model::CommonDataDictionary::DataFrames::Altitude                                              | «DataType»<br>PointLocation |
| Trace | «D2Class»D2Payload::LocationReferencing::LocationReference::OpenLR::OpenlrPoint::OpenlrBasePointLocation     | «DataType»<br>PointLocation |

Table A.16 — PositionConfidence Class table

| Connector |                                                                                                         |                                  |
|-----------|---------------------------------------------------------------------------------------------------------|----------------------------------|
| Type      | From                                                                                                    | To                               |
| Trace     | «External»TPEG model::LRC::DLR1LocationReference-Link                                                   | «DataType»<br>PositionConfidence |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                          | «DataType»<br>PositionConfidence |
| Trace     | «External»TPEG model::LRC::GLRLocationReference-Link                                                    | «DataType»<br>PositionConfidence |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::AltitudeConfidence        | «DataType»<br>PositionConfidence |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::PosConfidenceEllipse                             | «DataType»<br>PositionConfidence |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::PositionAccuracy          | «DataType»<br>PositionConfidence |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::PointCoordinates::PositionConfidenceEllipse | «DataType»<br>PositionConfidence |

**Table A.16 (continued)**

|       |                                                            |                                  |
|-------|------------------------------------------------------------|----------------------------------|
| Trace | «External»TPEG model::LRC::TPEG2LocationReferenceLink      | «DataType»<br>PositionConfidence |
| Trace | «External»TPEG model::LRC::TPEGLocationReferenceLink       | «DataType»<br>PositionConfidence |
| Trace | «External»TPEG model::TrafficEventCompact::ProblemLocation | «DataType»<br>PositionConfidence |
| Trace | «External»TPEG model::TrafficEventCompact::SegmentLocation | «DataType»<br>PositionConfidence |

**Table A.17 — TransversalLocationReference Class table**

| Connector |                                                                                                                                    |                                            |
|-----------|------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| Type      | From                                                                                                                               | To                                         |
| Trace     | «D2Class»D2Payload::LocationReferencing::LocationReference::SupplementaryPositionalDescription::SupplementaryPositionalDescription | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::RestrictionLocation                                                                     | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::LRC::TPEG2LocationReferenceLink                                                                              | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::ProblemLocation                                                                         | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::TrafficEventCompact::SegmentLocation                                                                         | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::LRC::DLR1LocationReferenceLink                                                                               | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::LRC::TPEGLocationReferenceLink                                                                               | «DataType»<br>TransversalLocationReference |
| Trace     | «External»TPEG model::LRC::GLRLocationReferenceLink                                                                                | «DataType»<br>TransversalLocationReference |

## A.10 "SituationDataset" package

[Table A.18](#), [A.19](#) and [A.20](#) show the traceability matrices for the "SituationDataset" package.

**Table A.18 — Situation Class table**

| Connector |                                                                                        |                            |
|-----------|----------------------------------------------------------------------------------------|----------------------------|
| Type      | From                                                                                   | To                         |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::SituationContainer | «FeatureType»<br>Situation |
| Trace     | «D2Identifiable»D2Payload::PayloadPublication::Situation::Classes::Situation           | «FeatureType»<br>Situation |
| Trace     | «D2Class»IVI model::IviContainer::IviContainer                                         | «FeatureType»<br>Situation |
| Trace     | TPEG model::TrafficEventCompact::TECMessage                                            | «FeatureType»<br>Situation |

**Table A.19 — SituationDataset Class table**

| Connector |                                                                                                                 |                                   |
|-----------|-----------------------------------------------------------------------------------------------------------------|-----------------------------------|
| Type      | From                                                                                                            | To                                |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::SituationPublication::SituationPublication                   | «FeatureType»<br>SituationDataset |
| Trace     | «D2Class»D2Payload::Extension::TrafficSignals::SignalPhaseAndTimingPublication::SignalPhaseAndTimingPublication | «FeatureType»<br>SituationDataset |
| Trace     | «D2Class»D2Payload::Extension::TrafficSignals::MapDataPublication::MapDataPublication                           | «FeatureType»<br>SituationDataset |
| Trace     | «D2Class»IVI model::PayloadPublication::IviContainers                                                           | «FeatureType»<br>SituationDataset |

**Table A.20 — SituationElement Class table**

| Connector  |                                                                                                          |                                   |
|------------|----------------------------------------------------------------------------------------------------------|-----------------------------------|
| Type       | From                                                                                                     | To                                |
| Trace      | «D2VersionedIdentifiable»D2Payload::PayloadPublication::Situation::Classes::SituationRecord              | «FeatureType»<br>SituationElement |
| Trace      | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::SituationContainer                   | «FeatureType»<br>SituationElement |
| Trace      | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::AlacarteContainer::AlacarteContainer | «FeatureType»<br>SituationElement |
| Trace      | TPEG model::TrafficEventCompact::TECMessage                                                              | «FeatureType»<br>SituationElement |
| Dependency | «DataType»DataSet::Common::DataManagement::LifeCycleManagement                                           | «FeatureType»<br>SituationElement |

## A.11 "OperatorAction" package

[Tables A.21](#), [A.22](#), [A.23](#), [A.24](#), [A.25](#), [A.26](#), [A.27](#), [A.28](#), [A.29](#) and [A.30](#) show the traceability matrices for the "OperatorAction" package.

**Table A.21 — DiversionManagement Class table**

| Connector |                                                                                   |                                      |
|-----------|-----------------------------------------------------------------------------------|--------------------------------------|
| Type      | From                                                                              | To                                   |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec208:FollowDiversion   | «FeatureType»<br>DiversionManagement |
| Trace     | TPEG model::TrafficEventCompact::Advice                                           | «FeatureType»<br>DiversionManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode        | «FeatureType»<br>DiversionManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec008:DiversionRoadType | «FeatureType»<br>DiversionManagement |

**Table A.21 (continued)**

|       |                                                                                                                     |                                      |
|-------|---------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Trace | TPEG model::TrafficEventCompact::DiversionRoute                                                                     | «FeatureType»<br>DiversionManagement |
| Trace | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::Re-routingManagement | «FeatureType»<br>DiversionManagement |
| Trace | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                       | «FeatureType»<br>DiversionManagement |

**Table A.22 — GeneralManagement Class table**

| Connector |                                                                                                                                       |                                    |
|-----------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Type      | From                                                                                                                                  | To                                 |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec213:DriveCarefully                                                        | «FeatureType»<br>GeneralManagement |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::GeneralInstructionOrMessageToRoadUsers | «FeatureType»<br>GeneralManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec203:DrivingNotAllowed                                                     | «FeatureType»<br>GeneralManagement |
| Trace     | TPEG model::TrafficEventCompact::VehicleRestriction                                                                                   | «FeatureType»<br>GeneralManagement |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::GeneralNetworkManagement               | «FeatureType»<br>GeneralManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                                                            | «FeatureType»<br>GeneralManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                                         | «FeatureType»<br>GeneralManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec202:OvertakingNotAllowed                                                  | «FeatureType»<br>GeneralManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECDataTypes::DataTypes::typ007:Priority                                                | «FeatureType»<br>GeneralManagement |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                                                               | «FeatureType»<br>GeneralManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec207:GiveWayToVehiclesFromBehind                                           | «FeatureType»<br>GeneralManagement |

**Table A.23 — NetworkManagement Class table**

| Connector |                                                                                                                  |                                    |
|-----------|------------------------------------------------------------------------------------------------------------------|------------------------------------|
| Type      | From                                                                                                             | To                                 |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                    | «FeatureType»<br>NetworkManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::TemporarySpeedLimitSection                         | «FeatureType»<br>NetworkManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                                       | «FeatureType»<br>NetworkManagement |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::NetworkManagement | «FeatureType»<br>NetworkManagement |

**Table A.23 (continued)**

|       |                                                                                        |                                    |
|-------|----------------------------------------------------------------------------------------|------------------------------------|
| Trace | TPEG model::TrafficEventCompact::Advice                                                | «FeatureType»<br>NetworkManagement |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec214:DoNotLeaveYourVehicle  | «FeatureType»<br>NetworkManagement |
| Trace | TPEG model::TrafficEventCompact::TemporarySpeedLimit                                   | «FeatureType»<br>NetworkManagement |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec010:AtGradeJunctionClosure | «FeatureType»<br>NetworkManagement |
| Trace | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec216:UseTollLanes           | «FeatureType»<br>NetworkManagement |

**Table A.24 — OperatorAction Class table**

| Connector |                                                                                            |                                 |
|-----------|--------------------------------------------------------------------------------------------|---------------------------------|
| Type      | From                                                                                       | To                              |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType              | «FeatureType»<br>OperatorAction |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                 | «FeatureType»<br>OperatorAction |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::OperatorAction | «FeatureType»<br>OperatorAction |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                    | «FeatureType»<br>OperatorAction |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec200:SubAdviceType              | «FeatureType»<br>OperatorAction |

**Table A.25 — ParkingManagement Class table**

| Connector |                                                                                                     |                                    |
|-----------|-----------------------------------------------------------------------------------------------------|------------------------------------|
| Type      | From                                                                                                | To                                 |
| Trace     | «D2Class»D2Payload::PayloadPublication::Parking::Classes::ParkingStatusRelated::ParkingRecordStatus | «FeatureType»<br>ParkingManagement |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                             | «FeatureType»<br>ParkingManagement |
| Trace     | «D2VersionedIdentifiable»D2Payload::PayloadPublication::Parking::Classes::ParkingSite::ParkingTable | «FeatureType»<br>ParkingManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                       | «FeatureType»<br>ParkingManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                          | «FeatureType»<br>ParkingManagement |



Table A.26 — RoadLayoutManagement Class table

| Connector |                                                                                                                                  |                                       |
|-----------|----------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Type      | From                                                                                                                             | To                                    |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec104:NarrowLanes                                                      | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::CauseCode                                                                 | «FeatureType»<br>RoadLayoutManagement |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                                                          | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::ClosedLanes                                                               | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                                    | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «D2Class»DENM model::DecentralizedEnvironmentalNotificationMessage::DecentralisedEnvironmentalNotificationMessage                | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec004:LaneRestriction                                                  | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::RoadOrCarriagewayOrLaneManagement | «FeatureType»<br>RoadLayoutManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                                                       | «FeatureType»<br>RoadLayoutManagement |

Table A.27 — RoadsideAssistance Class table

| Connector |                                                                                                |                                     |
|-----------|------------------------------------------------------------------------------------------------|-------------------------------------|
| Type      | From                                                                                           | To                                  |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                     | «FeatureType»<br>RoadsideAssistance |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                  | «FeatureType»<br>RoadsideAssistance |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                        | «FeatureType»<br>RoadsideAssistance |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::RoadsideAssistance | «FeatureType»<br>RoadsideAssistance |

Table A.28 — SignSetting Class table

| Connector |                                                                                                        |                           |
|-----------|--------------------------------------------------------------------------------------------------------|---------------------------|
| Type      | From                                                                                                   | To                        |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsPictogram             | «DataType»<br>SignSetting |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::Vms                                              | «DataType»<br>SignSetting |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsSupplementaryPanel    | «DataType»<br>SignSetting |
| Trace     | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsSupplementaryPanelCharacteristics | «DataType»<br>SignSetting |

Table A.28 (continued)

|       |                                                                                                         |                           |
|-------|---------------------------------------------------------------------------------------------------------|---------------------------|
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsStatus::VmsStatus                  | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsMessage                | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsPictogramDisplayArea   | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::Fault::VmsUnitFault                               | «DataType»<br>SignSetting |
| Trace | «D2VersionedIdentifiable»D2Payload::PayloadPublication::Vms::Classes::VmsUnit                           | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsSupplementaryPictogram | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsText                   | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsStatus::VmsDynamicConfiguration    | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsMessage::VmsTextLine               | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsPictogramDisplayCharacteristics    | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsStatus::VmsUnitStatus              | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::PayloadPublication::Vms::Classes::VmsRelated::VmsTextDisplayCharacteristics         | «DataType»<br>SignSetting |
| Trace | «D2Class»D2Payload::Extension::TrafficSignals::MapDataPublication::Geometry::RegulatorySpeedLimit       | «DataType»<br>SignSetting |

Table A.29 — SpeedManagement Class table

| Connector |                                                                                                                |                                  |
|-----------|----------------------------------------------------------------------------------------------------------------|----------------------------------|
| Type      | From                                                                                                           | To                               |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                                        | «FeatureType»<br>SpeedManagement |
| Trace     | TPEG model::TrafficEventCompact::TemporarySpeedLimit                                                           | «FeatureType»<br>SpeedManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                                     | «FeatureType»<br>SpeedManagement |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::SpeedManagement | «FeatureType»<br>SpeedManagement |
| Trace     | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::speedLimitMin                                  | «FeatureType»<br>SpeedManagement |
| Trace     | «D2Class»D2Payload::Extension::TrafficSignals::SignalPhaseAndTimingPublication::AdvisorySpeed                  | «FeatureType»<br>SpeedManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                  | «FeatureType»<br>SpeedManagement |



Table A.29 (continued)

|       |                                                                                                   |                                  |
|-------|---------------------------------------------------------------------------------------------------|----------------------------------|
| Trace | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::TemporarySpeedLimitSection          | «FeatureType»<br>SpeedManagement |
| Trace | «D2Class»IVI model::CommonDataDictionary::DataFrames::External::speedLimitMax                     | «FeatureType»<br>SpeedManagement |
| Trace | «D2Class»D2Payload::Extension::TrafficSignals::MapDataPublication::Geometry::RegulatorySpeedLimit | «FeatureType»<br>SpeedManagement |

Table A.30 — WinterDrivingManagement Class table

| Connector |                                                                                                                        |                                          |
|-----------|------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| Type      | From                                                                                                                   | To                                       |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::OperatorAction::NetworkManagement::WinterDrivingManagement | «FeatureType»<br>WinterDrivingManagement |
| Trace     | TPEG model::TrafficEventCompact::Advice                                                                                | «FeatureType»<br>WinterDrivingManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec106:SlipperyRoad                                           | «FeatureType»<br>WinterDrivingManagement |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec005:AdviceCode                                             | «FeatureType»<br>WinterDrivingManagement |
| Trace     | «DataStructure»TPEG model::TrafficEventCompact::TECDataTypes::RestrictionType                                          | «FeatureType»<br>WinterDrivingManagement |

## A.12 "Parking" package

There is no traceability matrix for this package

## A.13 "SPaT" package

[Tables A.31](#) and [A.32](#) show the traceability matrices for the "SPaT" package.

Table A.31 — MapData Class table

| Connector  |                                                                    |                          |
|------------|--------------------------------------------------------------------|--------------------------|
| Type       | From                                                               | To                       |
| Dependency | «FeatureType»DataSet::SituationDataset::SPaT::SignalPhaseAndTiming | «FeatureType»<br>MapData |

Table A.32 — SignalPhaseAndTiming Class table

| Connector  |                                                                                                                      |                                       |
|------------|----------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| Type       | From                                                                                                                 | To                                    |
| Dependency | «FeatureType»DataSet::SituationDataset::SPaT::SignalPhaseAndTiming                                                   | «FeatureType»<br>MapData              |
| Trace      | «D2VersionedIdentifiable»D2Payload::Extension::TrafficSignals::SignalPhaseAndTimingPublication::SignalPhaseAndTiming | «FeatureType»<br>SignalPhaseAndTiming |
| Trace      | «D2Class»D2Payload::Extension::TrafficSignals::MapDataPublication::MapData                                           | «FeatureType»<br>SignalPhaseAndTiming |

## A.14 "TrafficElement" package

Tables A.33, A.34, A.35, A.36, A.37, A.38, A.39, A.40, A.41 and A.42 show the traceability matrices for the "TrafficElement" package.

**Table A.33 — AbnormalTraffic Class table**

| Connector |                                                                                             |                               |
|-----------|---------------------------------------------------------------------------------------------|-------------------------------|
| Type      | From                                                                                        | To                            |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec129:TimeDelay                   | «FeatureType» AbnormalTraffic |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec101:TrafficCongestion           | «FeatureType» AbnormalTraffic |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec127:DangerousEndOfQueue         | «FeatureType» AbnormalTraffic |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::CauseCode                            | «FeatureType» AbnormalTraffic |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec120:RecklessPersons             | «FeatureType» AbnormalTraffic |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec006:Tendency                    | «FeatureType» AbnormalTraffic |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::AbnormalTraffic | «FeatureType» AbnormalTraffic |

**Table A.34 — Accident Class table**

| Connector |                                                                                                |                        |
|-----------|------------------------------------------------------------------------------------------------|------------------------|
| Type      | From                                                                                           | To                     |
| Maps To   | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::Accident::Accident | «FeatureType» Accident |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec102:Accident                       | «FeatureType» Accident |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::Accident::Accident | «FeatureType» Accident |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::CauseCode                               | «FeatureType» Accident |

**Table A.35 — Activity Class table**

| Connector |                                                                                                          |                        |
|-----------|----------------------------------------------------------------------------------------------------------|------------------------|
| Type      | From                                                                                                     | To                     |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::Activity::AuthorityOperation | «FeatureType» Activity |
| Trace     | «Enumeration»TPEG model::TrafficEventCompact::TECTables::tec126:SlowMovingVehicles                       | «FeatureType» Activity |
| Trace     | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::Activity::Activity           | «FeatureType» Activity |
| Trace     | «D2Class»DENM model::CommonDataDictionary::DataFrames::CauseCode                                         | «FeatureType» Activity |
| Maps To   | «D2Class»D2Payload::PayloadPublication::Situation::Classes::TrafficElement::Activity::Activity           | «FeatureType» Activity |