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AMENDMENT 1
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**Information technology — Open Systems
Interconnection — Connection-oriented
protocol for the Association Control
Service Element: Protocol specification**

**AMENDMENT 1: Incorporation of extensibility
markers**

*Technologies de l'information — Interconnexion de systèmes ouverts
(OSI) — Protocole en mode orienté connexion pour l'élément de service de
contrôle d'association: Spécification du protocole*

AMENDEMENT 1: Incorporation de marqueurs d'extensibilité

Foreword

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In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

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Introduction

This amendment to the connection-oriented ACSE protocol specification includes the ASN.1 extensibility marker in the module describing the protocol.

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INTERNATIONAL STANDARD

ITU-T RECOMMENDATION

**INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
CONNECTION-ORIENTED PROTOCOL FOR THE ASSOCIATION CONTROL
SERVICE ELEMENT: PROTOCOL SPECIFICATION**

**AMENDMENT 1
Incorporation of extensibility markers**

1) Subclause 2.1

Add the following reference.

- ITU-T Recommendation X.501 (1993) | ISO/IEC 9594-2:1995, *Information Technology – Open Systems Interconnection – The Directory: Models.*

2) Subclause 9.1

Replace the ASN.1 module with the following:

ACSE-1 { joint-iso-itu-t association-control(2) modules(0) apdus(0) version1(1) }

-- ACSE-1 refers to ACSE version 1

DEFINITIONS ::=

BEGIN

EXPORTS

acse-as-id, ACSE-apdu,
aCSE-id, Application-context-name,
AP-title, AE-qualifier,
AE-title, AP-invocation-identifier,
AE-invocation-identifier,
Mechanism-name, Authentication-value,
ACSE-requirements;

IMPORTS Name, RelativeDistinguishedName

FROM InformationFramework

{ joint-iso-ccitt ds(5) module(1) informationFramework(1) 2 };

-- The data types Name and RelativeDistinguishedName are imported from ISO/IEC 9594-2.

-- object identifier assignments

acse-as-id OBJECT IDENTIFIER ::=

{ joint-iso-itu-t association-control(2) abstract-syntax(1) apdus(0) version1(1) }

-- may be used to reference the abstract syntax of the ACSE APDUs

aCSE-id OBJECT IDENTIFIER ::=

{ joint-iso-itu-t association-control(2) ase-id(3) acse-ase(1) version(1) }

-- may be used to identify the Association Control ASE.

-- top level CHOICE

ACSE-apdu ::= CHOICE

```
{
  aarq AARQ-apdu,
  aare AARE-apdu,
  rlrq RLRLQ-apdu,
  rlre RLRE-apdu,
  abrt ABRT-apdu,
  ...
}
```

AARQ-apdu ::= [APPLICATION 0] IMPLICIT SEQUENCE

```
{ protocol-version          [0]  IMPLICIT BIT STRING { version1 (0) }
                                DEFAULT { version1 },
  application-context-name   [1]  Application-context-name,
  called-AP-title            [2]  AP-title OPTIONAL,
  called-AE-qualifier        [3]  AE-qualifier OPTIONAL,
  called-AP-invocation-identifier [4] AP-invocation-identifier OPTIONAL,
  called-AE-invocation-identifier [5] AE-invocation-identifier OPTIONAL,
  calling-AP-title           [6]  AP-title OPTIONAL,
  calling-AE-qualifier        [7]  AE-qualifier OPTIONAL,
  calling-AP-invocation-identifier [8] AP-invocation-identifier OPTIONAL,
  calling-AE-invocation-identifier [9] AE-invocation-identifier OPTIONAL,
  -- The following field shall not be present if only the Kernel is used.
  sender-acse-requirements   [10] IMPLICIT ACSE-requirements
                                OPTIONAL,
  -- The following field shall only be present if the Authentication functional unit is selected.
  mechanism-name             [11] IMPLICIT Mechanism-name
                                OPTIONAL,
  -- The following field shall only be present if the Authentication functional unit is selected.
  calling-authentication-value [12] EXPLICIT Authentication-value
                                OPTIONAL,
  application-context-name-list [13] IMPLICIT Application-context-name-list
                                OPTIONAL,
  -- The above field shall only be present if the Application Context Negotiation functional unit is selected
  implementation-information [29] IMPLICIT Implementation-data
                                OPTIONAL,
  ..., ...,
  user-information           [30] IMPLICIT Association-information
                                OPTIONAL
}
```

AARE-apdu ::= [APPLICATION 1] IMPLICIT SEQUENCE

```
{ protocol-version          [0]  IMPLICIT BIT STRING { version1 (0) }
                                DEFAULT { version1 },
  application-context-name   [1]  Application-context-name,
  result                     [2]  Associate-result,
  result-source-diagnostic   [3]  Associate-source-diagnostic,
  responding-AP-title        [4]  AP-title OPTIONAL,
  responding-AE-qualifier     [5]  AE-qualifier OPTIONAL,
  responding-AP-invocation-identifier [6] AP-invocation-identifier OPTIONAL,
  responding-AE-invocation-identifier [7] AE-invocation-identifier OPTIONAL,
  -- The following field shall not be present if only the Kernel is used.
  responder-acse-requirements [8] IMPLICIT ACSE-requirements
                                OPTIONAL,
  -- The following field shall only be present if the Authentication functional unit is selected.
  mechanism-name             [9] IMPLICIT Mechanism-name
                                OPTIONAL,
  -- This following field shall only be present if the Authentication functional unit is selected.
  responding-authentication-value [10] EXPLICIT Authentication-value
                                OPTIONAL,
  application-context-name-list [11] IMPLICIT Application-context-name-list
                                OPTIONAL,
  -- The above field shall only be present if the Application Context Negotiation functional unit is selected
  implementation-information [29] IMPLICIT Implementation-data
                                OPTIONAL,
  ..., ...,
```

user-information [30] IMPLICIT Association-information OPTIONAL
 }
 RLRQ-apdu ::= [APPLICATION 2] IMPLICIT SEQUENCE
 { reason [0] IMPLICIT Release-request-reason OPTIONAL,
 ..., ...,
 user-information [30] IMPLICIT Association-information OPTIONAL
 }
 RLRE-apdu ::= [APPLICATION 3] IMPLICIT SEQUENCE
 { reason [0] IMPLICIT Release-response-reason OPTIONAL,
 ..., ...,
 user-information [30] IMPLICIT Association-information OPTIONAL
 }
 ABRT-apdu ::= [APPLICATION 4] IMPLICIT SEQUENCE
 { abort-source [0] IMPLICIT ABRT-source,
 abort-diagnostic [1] IMPLICIT ABRT-diagnostic OPTIONAL,
 -- This field shall not be present if only the Kernel is used.
 ..., ...,
 user-information [30] IMPLICIT Association-information OPTIONAL
 }
 ABRT-diagnostic ::= ENUMERATED
 { no-reason-given (1),
 protocol-error (2),
 authentication-mechanism-name-not-recognized (3),
 authentication-mechanism-name-required (4),
 authentication-failure (5),
 authentication-required (6),
 ...
 }
 ABRT-source ::= INTEGER { acse-service-user (0), acse-service-provider (1) } (0..1, ...)
 ACSE-requirements ::= BIT STRING { authentication (0), application-context-negotiation(1) }
 Application-context-name-list ::= SEQUENCE OF Application-context-name
 Application-context-name ::= OBJECT IDENTIFIER
 -- Application-entity title productions follow (not in alphabetical order)
 AP-title ::= CHOICE {
 ap-title-form1 AP-title-form1,
 ap-title-form2 AP-title-form2,
 ... }
 AE-qualifier ::= CHOICE {
 ae-qualifier-form1 AE-qualifier-form1,
 ae-qualifier-form2 AE-qualifier-form2,
 ... }
 -- When both AP-title and AE-qualifier data values are present in an AARQ or AARE APDU, both must
 -- have the same form to allow the construction of an AE-title as discussed in CCITT Rec. X.665 |
 -- ISO/IEC 9834-6.
 AP-title-form1 ::= Name
 -- The value assigned to AP-title-form1 is The Directory Name of an application-process title.
 AE-qualifier-form1 ::= RelativeDistinguishedName
 -- The value assigned to AE-qualifier-form1 is the relative distinguished name of a particular
 -- application-entity of the application-process identified by AP-title-form1.
 AP-title-form2 ::= OBJECT IDENTIFIER
 AE-qualifier-form2 ::= INTEGER
 AE-title ::= CHOICE {
 ae-title-form1 AE-title-form1,
 ae-title-form2 AE-title-form2,
 ... }

-- As defined in CCITT Rec. X.650 | ISO 7498-3, an application-entity title is composed of an application-process title and an application-entity qualifier. The ACSE protocol provides for the transfer of an application-entity title value by the transfer of its component values. However, the following data type is provided for International Standards that reference a single syntactic structure for AE titles.

AE-title-form1 ::= Name

-- For access to The Directory (ITU-T Rec. X.500-Series | ISO/IEC 9594), an AE title has AE-title-form1.
 -- This value can be constructed from AP-title-form1 and AE-qualifier-form1 values contained in an AARQ or AARE APDU. A discussion of forming an AE-title-form1 from AP-title-form1 and AE-qualifier-form1 may be found in CCITT Rec. X.665 | ISO/IEC 9834-6.

AE-title-form2 ::= OBJECT IDENTIFIER

-- A discussion of forming an AE-title-form2 from AP-title-form2 and AE-qualifier-form2 may be found in CCITT Rec. X.665 | ISO/IEC 9834-6.

AE-invocation-identifier ::= INTEGER

AP-invocation-identifier ::= INTEGER

-- End of Application-entity title productions

Associate-result ::= INTEGER

{ accepted (0),
 rejected-permanent (1),
 rejected-transient (2)
 } (0..2, ...)

Associate-source-diagnostic ::= CHOICE

{ acse-service-user

[1] INTEGER
 { null (0),
 no-reason-given (1),
 application-context-name-not-supported (2),
 calling-AP-title-not-recognized (3),
 calling-AP-invocation-identifier-not-recognized (4),
 calling-AE-qualifier-not-recognized (5),
 calling-AE-invocation-identifier-not-recognized (6),
 called-AP-title-not-recognized (7),
 called-AP-invocation-identifier-not-recognized (8),
 called-AE-qualifier-not-recognized (9),
 called-AE-invocation-identifier-not-recognized (10),
 authentication-mechanism-name-not-recognized (11),
 authentication-mechanism-name-required (12),
 authentication-failure (13),
 authentication-required (14)
 } (0..14, ...),

acse-service-provider

[2] INTEGER
 { null (0),
 no-reason-given (1),
 no-common-acse-version (2)
 } (0..2, ...)

}

Association-information ::= SEQUENCE SIZE (1, ..., 0 | 2..MAX) OF EXTERNAL

Authentication-value ::= CHOICE

{ charstring [0] IMPLICIT GraphicString,
 bitstring [1] IMPLICIT BIT STRING,
 external [2] IMPLICIT EXTERNAL,
 other [3] IMPLICIT SEQUENCE {
 other-mechanism-name MECHANISM-NAME.&id ({ObjectSet}),
 other-mechanism-value MECHANISM-NAME.&Type ({ObjectSet}){@.other-mechanism-name}
 }
 }

-- The abstract syntax of (calling/responding) authentication-value is determined by the authentication mechanism used during association establishment. The authentication mechanism is either explicitly denoted by the &id field (of type OBJECT IDENTIFIER) for a mechanism belonging to the class MECHANISM-NAME, or it is known implicitly by prior agreement between the communicating partners. If the "other" component is chosen, then the "mechanism-name" component must be present in accordance with ITU-T Rec. X.680 | ISO/IEC 8824. If the value "mechanism-name" occurs in the AARQ-apdu or the AARE-apdu, then that value must be the same as the value for "other-mechanism-name"

Implementation-data ::= GraphicString

Mechanism-name ::= OBJECT IDENTIFIER

MECHANISM-NAME ::=TYPE-IDENTIFIER

ObjectSet MECHANISM-NAME ::= {...}

Release-request-reason ::= INTEGER { normal (0) , urgent (1) , user-defined (30) } (0 | 1 | 30, ...)

Release-response-reason ::= INTEGER { normal (0) , not-finished (1) , user-defined (30) } (0 | 1 | 30, ...)

END

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