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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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## 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 RLRQ-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**

<p>{ acse-service-user</p>	<p>[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, ...),</p>
<p>acse-service-provider</p>	<p>[2] INTEGER          { null (0),          no-reason-given (1),          no-common-acse-version (2)          } (0..2, ...)</p>
<p>}</p>	

**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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