

Second edition
1996-10-15

AMENDMENT 1
1997-12-15

**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

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

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.

Amendment 1 to International Standard ISO/IEC 8650-1:1996 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 21, *Open systems interconnection, data management and open distributed processing*, in collaboration with ITU-T. The identical text is published as ITU-T Rec. X.227/Amd.1.

© ISO/IEC 1997

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

ISO/IEC Copyright Office • Case postale 56 • CH-1211 Genève 20 • Switzerland

Printed in Switzerland

Introduction

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

IECNORM.COM : Click to view the full PDF of ISO/IEC 8650-1:1996/Amd1:1997

This page intentionally left blank

IECNORM.COM : Click to view the full PDF of ISO/IEC 8650-1:1996/AMD1:1997

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

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

acse-service-provider

}

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

IECNORM.COM : Click to view the full PDF of ISO/IEC 8650-1:1996/AMD1:1997