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Information technology — Open Systems Interconnection — Service definition for the Application Service Object Association Control Service Element

*Technologies de l'information — Interconnexion des systèmes
ouverts — Définition du service pour l'élément de service de contrôle
d'association des objets de service d'application*

Reference number
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CONTENTS

		<i>Page</i>
1	Scope	1
2	Normative references.....	1
	2.1 Identical Recommendations International Standards.....	1
	2.2 Paired Recommendations International Standards equivalent in technical content.....	2
3	Definitions	3
	3.1 Reference model definitions.....	3
	3.1.1 Basic Reference Model definitions	3
	3.1.2 Security architecture definitions.....	3
	3.1.3 Naming and addressing definitions	3
	3.2 Service conventions definitions.....	3
	3.3 Presentation service definitions	4
	3.4 Application Layer Structure definitions	4
	3.5 ACSE service definitions	4
4	Abbreviations	5
5	Conventions.....	6
6	Basic concepts	6
	6.1 General	6
	6.2 Authentication	7
	6.2.1 Authentication concepts	7
	6.2.2 ACSE authentication facilities	7
7	Service overview	8
	7.1 Connection-mode	8
	7.1.1 ACSE services.....	8
	7.1.2 Functional units	8
	7.2 Connectionless-mode	10
	7.2.1 Functional units	10
8	Service definition.....	11
	8.1 A-ASSOCIATE service	11
	8.1.1 A-ASSOCIATE parameters	11
	8.1.2 A-ASSOCIATE service procedure	16
	8.2 A-RELEASE service.....	16
	8.2.1 A-RELEASE parameters.....	17
	8.2.2 A-RELEASE service procedure.....	17
	8.3 A-ABORT service.....	18
	8.3.1 A-ABORT parameters.....	18
	8.3.2 A-ABORT service procedure	19
	8.4 A-P-ABORT service	19
	8.4.1 A-P-ABORT parameter.....	19
	8.4.2 A-P-ABORT service procedure	19
	8.5 A-DATA Service.....	19
	8.5.1 A-DATA parameters	19
	8.5.2 A-DATA procedure.....	20
	8.6 A-ALTER-CONTEXT.....	20
	8.6.1 A-ALTER-CONTEXT parameters	20
	8.6.2 A-ALTER-CONTEXT procedure	20
	8.7 A-UNIT-DATA service	21
	8.7.1 A-UNIT-DATA parameters	21
	8.7.2 A-UNIT-DATA procedure.....	23

9	Sequencing information.....	23
9.1	A-ASSOCIATE.....	23
9.1.1	Type of service	23
9.1.2	Usage restrictions	23
9.1.3	Disrupted service procedures	23
9.1.4	Disrupting service procedures	23
9.1.5	Collisions.....	23
9.2	A-RELEASE	23
9.2.1	Type of service	23
9.2.2	Usage restrictions	23
9.2.3	Disrupted service procedures	23
9.2.4	Disrupting service procedures	23
9.2.5	Collisions.....	24
9.3	A-ABORT	24
9.3.1	Type of service	24
9.3.2	Usage restrictions	24
9.3.3	Disrupted service procedures	24
9.3.4	Disrupting service procedures	24
9.3.5	Collisions.....	24
9.3.6	Further sequencing information	24
9.4	A-P-ABORT.....	24
9.4.1	Type of service	24
9.4.2	Usage restrictions	24
9.4.3	Disrupted service procedures	24
9.4.4	Disrupting service procedures	24
9.5	A-DATA	24
9.5.1	Type of service	24
9.5.2	Usage restrictions	24
9.5.3	Disrupted services	24
9.5.4	Disrupting services	25
9.5.5	Collisions.....	25
9.6	A-ALTER CONTEXT	25
9.6.1	Type of service	25
9.6.2	Usage restrictions	25
9.6.3	Disrupted services	25
9.6.4	Disrupting services	25
9.6.5	Collisions.....	25
9.7	A-UNIT-DATA.....	25
9.7.1	Type of service	25
9.7.2	Usage restrictions	25
9.7.3	Disrupted services	25
9.7.4	Disrupting services	25
9.7.5	Collisions.....	25

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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

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.

Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

International Standard ISO/IEC 15953 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in collaboration with ITU-T. The identical text is published as ITU-T Recommendation X.217 bis.

This first edition of ISO/IEC 15953 cancels and replaces ISO/IEC 8649:1996 and its Amendment 1:1997 and Amendment 2:1998, of which it constitutes a technical revision.

Introduction

This Recommendation | International Standard is one of a set of Recommendations | International Standards produced to facilitate the interconnection of information processing systems. It is related to other ITU-T Recommendations | International Standards in the set as defined by the Reference Model for Open Systems Interconnection (see ITU-T Rec. X.200 | ISO/IEC 7498-1). The reference model subdivides the areas of standardization for interconnection into a series of layers of specification, each of manageable size.

The goal of Open Systems Interconnection is to allow, with a minimum of technical agreement outside the Interconnection standards, the interconnection of information processing systems:

- from different manufacturers;
- under different managements;
- of different levels of complexity; and
- of different technologies.

This Recommendation | International Standard recognizes that application-processes may wish to communicate with each other for a wide variety of reasons. However, any communication will require the performance of certain services independent of the reasons for communication. The application-service-element defined herein provides such services.

This Service definition defines services provided by the application-service-element for ASO-association control: the Association Control Service Element (ACSE). The ACSE provides basic facilities for the control of an ASO-association among communicating application-service-objects (ASOs). The ACSE includes four optional functional units. One functional unit provides additional facilities for exchanging information in support of authentication during association establishment without adding services. The optional ASO-context negotiation functional unit allows multiple ASO-contexts to be offered during association establishment. The optional higher level association functional unit provides for the facility to identify ASO-associations and transparently pass data to child ASOs and allows the ASO-context or the presentation context on an ASO-association to be modified during the lifetime of the association. The optional nested-association functional unit provides for the facility to instantiate multiple associations nested over supporting upper layers. The X.410 compatibility mode is not provided by this Service definition, since the optional functional units defined in this Recommendation | International Standard are not used in this mode. The service definition herein is backwards compatible with ITU-T Rec. X.217 | ISO/IEC 8649.

The fast-associate mechanism allows a session connection, including its embedded presentation connection and application association, to be established using a compressed form of the information that would otherwise be sent on the S-CONNECT exchange. The compressed form, called the upper layer context identifier, is a reference to an upper-layer context specification, which is a definition of the fields of the application, ACSE, presentation and session protocols that would be sent on the full-form connect messages. The upper layer context identifier may be parameterized to include values for the variable fields allowed by the full form protocols for the upper layers.

Within the ACSE service, the only addition is the presence of a conceptual parameter which summarizes the contents of the User-information of the A-ASSOCIATE primitives.

It is recognized that, with respect to ACSE Quality of services (QoS), described in clause 8, work is still in progress to provide an integrated treatment of QoS across all layers of the OSI Reference Model, and to ensure that the individual treatments in each layer service satisfy overall QoS objectives in a consistent manner. As a consequence, an addendum may be added to this Service definition at a later time which reflects further QoS developments and integration.

INTERNATIONAL STANDARD**ITU-T RECOMMENDATION****INFORMATION TECHNOLOGY – OPEN SYSTEMS INTERCONNECTION –
SERVICE DEFINITION FOR THE APPLICATION SERVICE OBJECT
ASSOCIATION CONTROL SERVICE ELEMENT****1 Scope**

This Recommendation | International Standard defines ACSE services for ASO-association control in an open systems interconnection environment. ACSE supports two modes of communication service: connection-mode and connectionless-mode.

The ACSE connection-mode service is provided by the use of the connection-mode ACSE protocol (see ITU-T Rec. X.227 *bis* | ISO/IEC 15954).

The ACSE connectionless-mode service (A-UNIT-DATA) is provided by the use of the connectionless-mode ACSE protocol (see ITU-T Rec. X.237 *bis* | ISO/IEC 15955).

Five functional units are defined in the ACSE. The mandatory Kernel functional unit is used to establish and release ASO-associations. The optional Authentication functional unit provides additional facilities for exchanging information in support of authentication during association establishment without adding services. The ACSE authentication facilities may be used to support a limited class of authentication methods. The optional ASO-context negotiation functional unit allows multiple ASO-contexts to be offered during association establishment. The optional higher level association functional unit provides for the facility to identify ASO-associations and transparently pass data to child ASOs and allows the ASO-context or the presentation context on an ASO-association to be modified during the lifetime of the association.

This Recommendation | International Standard does not specify individual implementations or products, nor does it constrain the implementation of entities and interfaces within a computer system.

No requirement is made for conformance to this Service definition.

2 Normative references

The following Recommendations and International Standards contain provisions which, through reference in this text, constitute provisions of this Recommendation | International Standard. At this time of publication, the editions indicated were valid. All Recommendations and Standards are subject to revision, and parties to agreements based on this Recommendation | International Standard are encouraged to investigate the possibility of applying the most recent edition of the Recommendations and Standards listed below. Members of IEC and ISO maintain registers of currently valid International Standards. The Telecommunication Standardization Bureau of the ITU maintains a list of currently valid ITU-T Recommendations.

2.1 Identical Recommendations | International Standards

- ITU-T Recommendation X.200 (1994) | ISO/IEC 7498-1:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: The Basic Model*.
- ITU-T Recommendation X.207 (1993) | ISO/IEC 9545:1994, *Information technology – Open Systems Interconnection – Application layer structure*.
- ITU-T Recommendation X.210 (1993) | ISO/IEC 10731:1994, *Information technology – Open Systems Interconnection – Basic Reference Model: Conventions for the definition of OSI services*.

- ITU-T Recommendation X.215 (1995) | ISO/IEC 8326:1996, *Information technology – Open Systems Interconnection – Session service definition.*
- ITU-T Recommendation X.215 (1995)/Amd.1 (1997) | ISO/IEC 8326:1996/Amd.1:1998, *Information technology – Open Systems Interconnection – Session service definition – Amendment 1: Efficiency enhancements.*
- ITU-T Recommendation X.215 (1995)/Amd.2 (1997) | ISO/IEC 8326:1996/Amd.2:1998, *Information technology – Open Systems Interconnection – Session service definition – Amendment 2: Nested connections functional unit.*
- ITU-T Recommendation X.216 (1994) | ISO/IEC 8822:1994, *Information technology – Open Systems Interconnection – Presentation service definition.*
- ITU-T Recommendation X.216 (1994)/Amd.1 (1997) | ISO/IEC 8822:1994/Amd.1:1998, *Information technology – Open Systems Interconnection – Presentation service definition – Amendment 1: Efficiency enhancements.*
- ITU-T Recommendation X.216 (1994)/Amd.2 (1997) | ISO/IEC 8822:1994/Amd.2:1998, *Information technology – Open Systems Interconnection – Presentation service definition – Amendment 2: Nested connections functional unit.*
- ITU-T Recommendation X.217 (1995) | ISO/IEC 8649:1996, *Information technology – Open Systems Interconnection – Service definition for the association control service element.*
- ITU-T Recommendation X.225 (1995) | ISO/IEC 8327-1:1996, *Information technology – Open Systems Interconnection – Connection-oriented session protocol: Protocol specification.*
- ITU-T Recommendation X.225 (1995)/Amd.1 (1997) | ISO/IEC 8327-1:1996/Amd.1:1998, *Information technology – Open Systems Interconnection – Connection-oriented session protocol: Protocol specification – Amendment 1: Efficiency enhancements.*
- ITU-T Recommendation X.225 (1995)/Amd.2 (1997) | ISO/IEC 8327-1:1996/Amd.2:1998, *Information technology – Open Systems Interconnection – Connection-oriented session protocol: Protocol specification – Amendment 2: Nested connections functional unit.*
- ITU-T Recommendation X.226 (1994) | ISO/IEC 8823-1:1994, *Information technology – Open Systems Interconnection – Connection-oriented presentation protocol: Protocol specification.*
- ITU-T Recommendation X.226 (1994)/Amd.1 (1997) | ISO/IEC 8823-1:1994/Amd.1:1998, *Information technology – Open Systems Interconnection – Connection-oriented presentation protocol: Protocol specification – Amendment 1: Efficiency enhancements.*
- ITU-T Recommendation X.226 (1994)/Amd.2 (1997) | ISO/IEC 8823-1:1994/Amd.2:1998, *Information technology – Open Systems Interconnection – Connection-oriented presentation protocol: Protocol specification – Amendment 2: Nested connections functional unit.*
- ITU-T Recommendation X.227 bis (1998) | ISO/IEC 15954:1999, *Information technology – Open Systems Interconnection – Connection-mode protocol for the Application Service Object Association Control Service Element.*
- ITU-T Recommendation X.237 bis (1998) | ISO/IEC 15955:1999, *Information technology – Open Systems Interconnection – Connectionless protocol for the Application Service Object Association Control Service Element.*
- ITU-T Recommendation X.650 (1996) | ISO/IEC 7498-3:1997, *Information technology – Open Systems Interconnection – Basic Reference Model: Naming and addressing.*
- CCITT Recommendation X.660 (1992) | ISO/IEC 9834-1:1993, *Information technology – Open Systems Interconnection – Procedures for the operation of OSI Registration Authorities: General procedures.*

2.2 Paired Recommendations | International Standards equivalent in technical content

- CCITT Recommendation X.800 (1991), *Security architecture for Open Systems Interconnection for CCITT applications.*
ISO 7498-2:1989, *Information processing systems – Open Systems Interconnection – Basic Reference Model – Part 2: Security Architecture.*