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ISO/IEC
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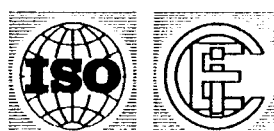
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Information technology — Open Systems Interconnection — Conformance test suite for the ACSE protocol —

Part 1: Test suite structure and test purposes

*Technologies de l'information — Interconnexion de systèmes ouverts —
Suite de tests de conformité pour le protocole ACSE —*

Partie 1: Structure de la suite de tests et objets des tests



Reference number
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Documents

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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.

International Standard ISO/IEC 10169-1 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

Annexes A and B of this part of ISO/IEC 10169 are for information only.

Introduction

The purpose of conformance testing is to increase the probability that different implementations are able to interwork, although conformance testing alone cannot give a guarantee of interworking. Conformance testing increases the confidence that each implementation conforms to the protocol specification, by establishing that it has the required capabilities and that its behaviour conforms to the protocol specification in representative instances of communication.

A fundamental objective of the related standardized conformance tests is to establish uniform conformance testing and unambiguous evaluation procedures for checking the ability of an implementation to operate according to the relevant protocol standards. The standardization of these test suites should lead to comparability and wide acceptance of test results produced by different test laboratories, and therefore minimize repeated conformance testing of the same ACSE protocol implementation.

This part of ISO/IEC 10169 specifies a test suite structure and a set of test purposes for use by test suite specifiers as the basis for all standardized conformance test suites needed to evaluate conformance to ISO 8650, the protocol for the Association Control Service Element (ACSE).

The conformance test suites based on this part of ISO/IEC 10169 are designed for use by

- a) test laboratories which provide a conformance testing service for the ACSE protocol;
- b) test realizers which provide a means of testing to be used by such test laboratories;
- c) implementors of the ACSE protocol.

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Part 1:

Test suite structure and test purposes

1 Scope

This part of ISO/IEC 10169 specifies a test suite structure and test purposes for the whole of the ACSE protocol, as defined in ISO 8650. This part of ISO/IEC 10169 does not specify how the conformance tests are to be realized or used, nor how the test results are to be presented or used.

NOTE — The choice of test method may restrict the test purposes which can be realized.

This part of ISO/IEC 10169 applies to conformance test suites for testing ACSE protocol implementation which operate over a connection oriented presentation-service (ISO 8822) and which claim conformance to ISO 8650.

This part of ISO/IEC 10169 does not include a general assessment of performance, reliability or robustness of relevant protocol implementations, nor an assessment of the design of the protocol itself.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 10169. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 10169 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7498:1984, *Information processing systems - Open Systems Interconnection - Basic Reference Model*.

ISO 8327:1987, *Information processing systems - Open Systems Interconnection - Basic connection oriented session protocol specification*.

ISO/TR 8509:1987, *Information processing systems - Open Systems Interconnection - Service conventions*.

ISO 8649:1988, *Information processing systems - Open Systems Interconnection - Service definition for the Association Control Service Element*.

ISO 8650:1988, *Information processing systems - Open Systems Interconnection - Protocol specification for the Association Control Service Element*.

ISO 8822:1988, *Information processing systems - Open Systems Interconnection - Connection oriented presentation service definition*.

ISO/IEC 9646-1:1991, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts*.

ISO/IEC 9646-2:1991, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract test suite specification*.

ISO/IEC 9646-3:1991, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The tree and tabular combined notation*.

3 Definitions

For the purposes of this part of ISO/IEC 10169, the following definitions apply.

3.1 Reference model definitions

This part of ISO/IEC 10169 uses the following terms defined in ISO 7498:

- a) Application Layer;
- b) application-entity;
- c) application-service-element;
- d) application-protocol-data-unit;
- e) application-protocol-control-information;
- f) Presentation Layer;
- g) presentation-service;
- h) presentation-connection;
- i) transfer syntax.

3.2 Service conventions definitions

This part of ISO/IEC 10169 makes use of the following terms in ISO/TR 8509:

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- a) service-provider;
- b) service-user;
- c) service primitive.

3.3 Presentation service definitions

This part of ISO/IEC 10169 makes use of the following terms defined in ISO 8822:

- a) abstract syntax;
- b) normal mode [presentation];
- c) X.410-1984 mode [presentation].

3.4 ACSE service definitions

This part of ISO/IEC 10169 makes use of the following terms defined in ISO 8649:

- a) application-association;
- b) Association Control Service Element;
- c) ACSE service-user;
- d) ACSE service-provider;
- e) requestor;
- f) acceptor;
- g) association-initiator;
- h) association-responder;
- i) normal mode;
- j) X.410-1984 mode.

3.5 ACSE protocol definitions

This part of ISO/IEC 10169 makes use of the following terms defined in ISO 8650:

- a) Association Control Protocol Machine;
- b) requesting Association Control Protocol Machine;
- c) responding Association Control Protocol Machine.

3.6 Conformance testing methodology and framework definitions

This part of ISO/IEC 10169 makes use of the following terms defined in ISO/IEC 9646-1:

- a) basic interconnection test;
- b) behaviour test;
- c) capabilities of an IUT;
- d) capability test;
- e) conformance testing;
- f) conformance test suite;
- g) dynamic conformance requirements;
- h) implementation under test [IUT];
- i) inopportune test event;
- j) invalid test event;
- k) lower tester;

- l) protocol implementation conformance statement [PICS];
- m) PICS proforma;
- n) protocol implementation extra information for testing [PIXIT];
- o) PIXIT proforma;
- p) static conformance requirements;
- q) semantically invalid test event;
- r) syntactically invalid test event;
- s) system under test [SUT];
- t) test event;
- u) test group;
- v) test group objective;
- w) test purpose;
- x) test suite;
- y) valid test event.

4 Abbreviations

4.1 Data units

APDU	Application Protocol Data Unit
PPDU	Presentation Protocol Data Unit
SPDU	Session Protocol Data Unit

4.2 Types of application-protocol-data-unit

AARE	A-ASSOCIATE-RESPONSE APDU
AARQ	A-ASSOCIATE-REQUEST APDU
ABRT	A-ABORT APDU
RLRE	A-RELEASE-RESPONSE APDU
RLRQ	A-RELEASE-REQUEST APDU

4.3 Types of application service primitives

A-ABRind	A-ABORT indication primitive
A-ABRreq	A-ABORT request primitive
A-ASCcnf	A-ASSOCIATE confirm primitive
A-ASCind	A-ASSOCIATE indication primitive
A-ASCreq	A-ASSOCIATE request primitive
A-ASCrsp	A-ASSOCIATE response primitive
A-PABind	A-P-ABORT indication primitive
A-RLScnf	A-RELEASE confirm primitive
A-RLSind	A-RELEASE indication primitive
A-RLSreq	A-RELEASE request primitive
A-RLSrsp	A-RELEASE response primitive
P-CONcnf	P-CONNECT confirm primitive

4.4 Types of presentation-protocol-data-unit

CPA PPDU	Connect Presentation Accept PPDU
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