Information technology — Open Systems Interconnection — Conformance testing methodology and framework —

Part 5:
Requirements on test laboratories and clients for the conformance assessment process

Technologies de l'information — Interconnexion de systèmes ouverts — Cadre général et méthodologie des tests de conformité OSI —

Partie 5: Spécifications pour laboratoires d'essais et clients pour le procédé d'évaluation de conformité

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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 9646-5 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee 21, *Open Systems Interconnection, data management and open distributed processing*.

This second edition cancels and replaces the first edition (ISO/IEC 9646-5:1991) which has been technically revised.

ISO/IEC 9646 consists of the following parts, under the general title *Information technology — Open Systems Interconnection — Conformance testing methodology and framework*:

— *Part 1: General concepts*

— *Part 2: Abstract Test Suite specification*

— *Part 3: The Tree and Tabular Combined Notation*

— *Part 4: Test realization*

— *Part 5: Requirements on test laboratories and clients for the conformance assessment process*

— *Part 6: Protocol profile test specification*

— *Part 7: Implementation conformance statements*

Annexes A and B form an integral part of this part of ISO/IEC 9646. Annex C is for information only.

Introduction

Conformance testing requires mutual understanding and agreement between the test laboratory and the client. This part of ISO/IEC 9646 addresses the roles of both the test laboratory and the client during the conformance assessment process, the need to reach mutual agreements between them, and the requirements on each of them.

The conformance assessment process is the most visible process of conformance testing, where the results of test suite standardization are put to real use. This is also the stage at which there is potentially the most scope for variations to occur. As this part of ISO/IEC 9646 is concerned with the relatively formal process of testing implementations, it is important that the number and nature of such variations is very limited. One of the major objectives of standardizing the conformance testing process is to achieve an acceptable and useful degree of comparability of results of conformance assessments of similar implementations. If this is to be achieved, not only should the same source of tests be used (*i.e.* as specified in appropriate standards), but also the methods of selecting and parameterizing these tests, and presenting their results, should be, to a large extent, the same.

This part of ISO/IEC 9646 addresses the issues which should be taken into account, by both the test laboratory and the client, if the necessary consistency of conformance assessment is to be achieved. The target audiences for this part of ISO/IEC 9646 are the test laboratories and their clients. The test laboratory is responsible for conducting the conformance assessment of an OSI implementation at the request of a client. Typically, test laboratories are

1) organizations developing or supplying OSI implementations (first-party test laboratories);

2) organizations willing to verify OSI implementations themselves before using them (second-party test laboratories);

3) organizations, independent of suppliers or users of OSI implementations, whose business is the testing of such implementations (third-party test laboratories).

Clients may be implementors or suppliers of real open systems or other OSI systems, who are applying for their own implementations to be tested. Alternatively, they may be procurers of those implementations, or any other interested party. The applicability of this part of ISO/IEC 9646 is independent of the relationship between the client and the implementation. During the conformance assessment process, the client is responsible for the conformance statements accompanying the System Under Test (SUT) and for the configuration of the SUT.

Secondary, but related, audiences to whom this part of ISO/IEC 9646 could also be of interest

a) are test realizers;

b) organizations responsible for the accreditation of first-, second- or third-party test laboratories;

c) organizations responsible for the issue of test certificates which are based upon the conformance test reports issued by test laboratories;

d) readers of conformance test reports.

Within this part of ISO/IEC 9646, the conformance assessment process relating to both the test laboratory and the client is divided into three phases:

i) preparation for testing;

ii) test operation;

iii) production of test reports.

An overview of these three phases is given in clause 5. Clauses 6 to 9 state requirements on how to conduct these three phases.

For the purposes of this part of ISO/IEC 9646, it is assumed that a test laboratory is available and is already organized to provide a conformance assessment service. The test laboratory is assumed to have acquired from a test realizer (whether or not the latter belongs to the same organization) Means of Testing IUTs, for one or more OSI protocols and according to one or more Abstract Test Methods (ATM)s. This part of ISO/IEC 9646 specifies requirements on the test laboratory with respect to the conduct of the conformance assessment process for a particular client.

Similarly, it is assumed that a client is ready to apply for conformance assessment of an OSI implementation. The client is assumed to be familiar with the appropriate standards, with the concepts of conformance testing and Abstract Test Methods, and to be ready to cooperate with the test laboratory. This part of ISO/IEC 9646 specifies requirements on the client with respect to both the testability of the proposed SUT and the conduct of the conformance assessment process.

It is recommended that this part of ISO/IEC 9646 be read in conjunction with ISO/IEC 9646-1.

This part of ISO/IEC 9646 is also to be published as ITU-T Recommendation X.294 but not as identical text.

Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process

1 Scope

1.1 This part of ISO/IEC 9646 specifies requirements on both the test laboratory and the client, for the conduct of the conformance assessment process. The requirements are those necessary to achieve comparability of results of tests on similar implementations performed by different test laboratories. Implementations could support one base specification only, multiple base specifications or one or more profile(s) based on one or more base specifications. This part of ISO/IEC 9646 also provides some guidance on the conformance assessment process.

1.2 The requirements include

a) requirements for the testability of the implementation with respect to Abstract Test Methods;

b) general requirements on the test laboratory and the client applicable to any conformance assessment process;

c) exchange of technical and administrative information, including a System Conformance Statement, an Implementation Conformance Statement for each relevant base or profile specification, and Implementation eXtra Information for Testing for each Abstract Test Suite (ATS) to be used for testing each base specification, combination of base specifications or component of each profile, as appropriate, plus for profile testing the Profile Test Specification Summary for each profile;

d) cooperation between the test laboratory and the client to reach an agreement on the definition of the Implementation Under Test), on the Abstract Test Methods and ATSs to be used and on the conditions under which testing will be performed;

e) requirements for the structure and content of the conformance test reports that document the results of the conformance assessment process.

1.3 This part of ISO/IEC 9646 is applicable equally to those test laboratories which are affiliated to suppliers or procurers, and those which are independent.

1.4 This part of ISO/IEC 9646 is applicable to conformance assessment of implementations of

- OSI and Integrated Services Digital Network (ISDN) base specifications that comply with the relevant requirements for testability in ISO/IEC 9646-2, and/or

- OSI and ISDN profile specifications that comply with the relevant requirements for testability in ISO/IEC 9646-6,

based on

- conformance testing specifications specified in compliance with ISO/IEC 9646-2,

- and if appropriate based on Profile Test Specification Summaries and Profile Specific Test Specifications specified in compliance with ISO/IEC 9646-6,

and using Means of Testing (MOT) in compliance with ISO/IEC 9646-4.

1.5 The following are outside the scope of this part of ISO/IEC 9646:

a) the production of diagnostic trace information, additional to that in the conformance log, resulting from testing performed by the test laboratory, and the supply to the client;

b) aspects of test laboratory operations which are not specific to conformance testing implementations of OSI base specifications and profiles;

c) accreditation of test laboratories;

d) certification of implementations of OSI protocols.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 9646. 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 9646 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.*
(See also CCITT Recommendation X.200 (1984)).

ISO/TR 8509: 1987, *Information processing systems - Open Systems Interconnection - Service conventions.*
(See also CCITT Recommendation X.210 (1988)).

ISO/IEC 9646-1: 1994, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 1: General concepts.*
(See also ITU-T Recommendation X.290 -[1])

ISO/IEC 9646-2: 1994, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 2: Abstract Test Suite specification.*
(See also ITU-T Recommendation X.291 -[1])

ISO/IEC 9646-3: 1992, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation (TTCN).*
(See also ITU-T Recommendation X.292 (1993))

ISO/IEC 9646-3 Amd 1: -[1], *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 3: The Tree and Tabular Combined Notation - Amendment 1: TTCN extensions.*

ISO/IEC 9646-4: 1994, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 4: Test realization.*
(See also ITU-T Recommendation X.293 -[1])

ISO/IEC 9646-6: 1994, *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 6: Protocol profile test specification.*
(See also ITU-T Recommendation X.295 -[1])

ISO/IEC 9646-7: -[1], *Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements.*
(See also ITU-T Recommendation X.296 -[1])

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[1] To be published.