



# SLOVENSKI STANDARD

## SIST EN ISO/IEC 9646-5:1997

01-december-1997

---

**Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process (ISO/IEC 9646-5:1994)**

Information technology - Open Systems Interconnection - Conformance testing methodology and framework - Part 5: Requirements on test laboratories and clients for the conformance assessment process (ISO/IEC 9646-5:1994)

**iTeh STANDARD PREVIEW**

Informationstechnik - Kommunikation offener Systeme - Methodik der Konformitätsprüfung - Teil 5: Anforderungen an Testzentren und Testteilnehmer für die Vorbereitung, Durchführung und Bewertung der Konformitätsprüfung (ISO/IEC 9646-5:1994)

[SIST EN ISO/IEC 9646-5:1997](https://standards.itih.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997)

<https://standards.itih.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997>

Technologies de l'information - Interconnexion de systemes 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 (ISO/IEC 9646-5:1994)

**Ta slovenski standard je istoveten z: EN ISO/IEC 9646-5:1996**

---

**ICS:**

35.100.01	Medsebojno povezovanje odprtih sistemov na splošno	Open systems interconnection in general
-----------	--	---

**SIST EN ISO/IEC 9646-5:1997**

**en**

**iTeh STANDARD PREVIEW**  
**(standards.iteh.ai)**

[SIST EN ISO/IEC 9646-5:1997](#)

<https://standards.iteh.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997>

EUROPEAN STANDARD

EN ISO/IEC 9646-5

NORME EUROPÉENNE

EUROPÄISCHE NORM

February 1996

ICS 35.100

Supersedes EN 29646-5:199

Descriptors: See ISO document

English version

Information technology - Open Systems  
Interconnection - Conformance testing  
methodology and framework - Part 5:  
Requirements on test laboratories and clients for  
the conformance assessment process (ISO/IEC  
9646-5:1994)

Technologies de l'information - Interconnexion  
de systèmes ouverts - Cadre général et  
méthodologie des tests de conformité OSI -  
Partie 5: Spécifications pour les laboratoires  
d'essais et clients pour le procédé  
d'évaluation de conformité (ISO/IEC  
9646-5:1994)

Informationstechnik - Kommunikation Offener  
Systeme - Methodik der Konformitätsprüfung -  
Teil 5: Anforderungen an Testzentren und  
Testteilnehmer für die Vorbereitung,  
Durchführung und Bewertung von der  
Konformitätsprüfung (ISO/IEC 9646-5:1994)

SIST EN ISO/IEC 9646-5:1997

<https://standards.iteh.ai/catalog/standards/sist/a380e6c-3c4a-489d-9716-34a191d09880/sist/en-iso-iec-9646-5-1997>

REPUBLICA SLOVENIJA  
MINISTRSTVO ZA ZNANOST IN TEHNOLOGIJO  
Urad RS za standardizacijo in meroslovje  
LJUBLJANA

SIST... EN ISO/IEC 9646-5

PREVZET PO METODI RAZGLASITVE

-12- 1997

This European Standard was approved by CEN on 1996-01-25. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

# CEN

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

Page 2  
EN ISO/IEC 9646-5:1996

### Foreword

The text of the International Standard from ISO/IEC/JTC 1 "Information Technology" of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) has been taken over as a European Standard by CEN Technical Board.

This European Standard replaces EN 29646-5:1992.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by August 1996, and conflicting national standards shall be withdrawn at the latest by August 1996.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

### Endorsement notice

The text of the International Standard ISO/IEC 9646-5:1994 has been approved by CEN as a European Standard without any modification.

**iteh STANDARD PREVIEW**  
**(standards.iteh.ai)**

SIST EN ISO/IEC 9646-5:1997

<https://standards.iteh.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997>



INTERNATIONAL  
STANDARD

**ISO/IEC**  
**9646-5**

Second edition  
1994-12-15

---

---

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

iTeh STANDARD PREVIEW

**Part 5:**

(standards.iteh.ai)

Requirements on test laboratories and clients  
for the conformance assessment process

<https://standards.iteh.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997>

*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*



Reference number  
ISO/IEC 9646-5:1994(E)

## Contents

	Page
Foreword .....	iv
Introduction .....	v
1 Scope .....	1
2 Normative references .....	2
3 Definitions .....	2
4 Abbreviations .....	3
5 Overview of the conformance assessment process .....	3
5.1 Introduction .....	3
5.2 Preparation for testing .....	3
5.3 Test operations .....	4
5.4 Test report production .....	4
6 Preparation for testing .....	4
6.1 Introduction .....	4
6.2 Requirements for testability of the System Under Test .....	4
6.3 Communication between the test laboratory and the client .....	7
6.4 Documentation for conformance assessment .....	9
7 Test operations .....	11
7.1 Introduction .....	11
7.2 Static conformance review .....	11
7.3 Test selection .....	14
7.4 Test parameterization .....	15
7.5 Verification of Test Coordination Procedures .....	15
7.6 Test campaign .....	16
7.7 Negotiated exits during the test campaign .....	18
8 Test report production .....	19
8.1 Conformance test reports .....	19
8.2 System Conformance Test Report (SCTR) .....	19
8.3 Protocol Conformance Test Report (PCTR) .....	20
9 Compliance .....	21
9.1 Test laboratory role .....	21
9.2 Client role .....	21

© ISO/IEC 1994

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

## Annex

A System Conformance Test Report (SCTR) template . . . . .	22
A.1 Introduction. . . . .	22
A.2 Conformance. . . . .	22
A.3 SCTR proforma. . . . .	22
B Protocol Conformance Test Report (PCTR) template . . . . .	26
B.1 Introduction. . . . .	26
B.2 Conformance. . . . .	26
B.3 PCTR proforma. . . . .	26
C Skeleton IXIT Proforma. . . . .	30
C.1 Introduction. . . . .	30
C.2 IXIT proforma. . . . .	30

## iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN ISO/IEC 9646-5:1997](https://standards.iteh.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997)

<https://standards.iteh.ai/catalog/standards/sist/af380e6c-3c4a-489d-9716-34a79b009885/sist-en-iso-iec-9646-5-1997>

## 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 cXtra 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.

## ISO/IEC 9646-5: 1994 (E)

## 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 <sup>1)</sup>)

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 <sup>1)</sup>)

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: <sup>1)</sup>, *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 <sup>1)</sup>)

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 <sup>1)</sup>)

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

## 3 Definitions

For the purposes of this part of ISO/IEC 9646, all the definitions given in ISO/IEC 9646-1 apply. The definitions in this clause also apply to this part of ISO/IEC 9646.

**3.1 client checklist:** A record of test-related information supplied to the test laboratory by the client during the test preparation phase of the conformance assessment process.

**3.2 client test manager:** The person identified by the client organization as being responsible for all matters relating to the conformance testing of the IUT.

**3.3 negotiated exit (from the conformance assessment process):** A point in time at which the test laboratory and the client can mutually decide to terminate the conformance assessment process.

**3.4 operator of the system under test [SUT operator]:** The person or persons designated by the client organization as being responsible for operation of the SUT during conformance testing.

**3.5 test laboratory checklist:** A record of test-related information supplied to the client by the test laboratory during the test preparation phase of the conformance assessment process.

**3.6 test laboratory manager:** The person identified by the test laboratory as being responsible for all matters relating to test laboratory operations.

**3.7 test operator:** The person or persons designated by the test laboratory as being responsible for running conformance tests against the IUT.

<sup>1)</sup> To be published.

## 4 Abbreviations

For the purposes of this part of ISO/IEC 9646, the following abbreviations defined in ISO/IEC 9646-1: 1994, clause 4 apply:

<b>ASP:</b>	abstract service primitive
<b>ATM:</b>	abstract test method
<b>ATS:</b>	abstract test suite
<b>BIT:</b>	basic interconnection test
<b>ETS:</b>	executable test suite
<b>ICS:</b>	implementation conformance statement
<b>IUT:</b>	implementation under test
<b>IXIT:</b>	implementation extra information for testing
<b>MOT:</b>	means of testing
<b>MPyT:</b>	multi-party testing
<b>OSI:</b>	open systems interconnection
<b>PCO:</b>	point of control and observation
<b>PCTR:</b>	protocol conformance test report
<b>PETS:</b>	parameterized executable test suite
<b>PICS:</b>	protocol implementation conformance statement
<b>PIXIT:</b>	protocol implementation extra information for testing
<b>PSTS:</b>	profile specific test specification
<b>PTS:</b>	profile test specification
<b>RL:</b>	requirements list
<b>SATS:</b>	selected abstract test suite
<b>SCS:</b>	system conformance statement
<b>SCTR:</b>	system conformance test report
<b>SPyT:</b>	single-party testing
<b>SUT:</b>	system under test
<b>TCP:</b>	test coordination procedures
<b>TMP:</b>	test management protocol
<b>TSS&amp;TP:</b>	test suite structure and test purposes
<b>TTCN:</b>	tree and tabular combined notation
<b>XRL:</b>	IXIT requirements list

## 5 Overview of the conformance assessment process

### 5.1 Introduction

Figure 1 of ISO/IEC 9646-1 illustrates the conformance assessment process. ISO/IEC 9646-1, subclause 6.3 provides an overview of the conformance assessment process. An overview of the three phases (preparation for testing, test operations and test report production) is given as guidance in the following subclauses.

### 5.2 Preparation for testing

The preparatory phase includes

- general administrative steps, such as the application by the client, the provision of documents by the test laboratory describing the general policy, terms and conditions to be followed during test operations, and the provision of information about the System Under Test (SUT) by the client;