

INTERNATIONAL STANDARD

ISO/IEC
9646-4

First edition
1991-07-15

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

Part 4: Test realization

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

Partie 4: Réalisation des tests



Reference number
ISO/IEC 9646-4:1991(E)



Documents
Document Sharing Hub

Contents

Foreword	iii
Introduction	iv
1 Scope	1
2 Normative references	1
3 Definitions	1
4 Abbreviations	1
5 Test Realization overview	2
6 Requirements concerning Test Realization	2
6.1 Introduction	2
6.2 Requirements concerning the Means of Testing	2
6.3 Requirements concerning ETS derivation	3
6.3.1 Introduction	3
6.3.2 Conformance to the reference standardized ATS	3
6.3.3 Correspondence between ATS and ETS	3
6.3.4 Subsetting the ATS	3
6.3.5 Derivation process independence	4
6.4 Requirements concerning conformance logs	4
6.5 Requirements on the progression of the PIXIT proforma	4
6.6 Requirements concerning other documentation	4
7 Compliance	5
Annex A (informative) Additional Guidance on Test Realization	6
A.1 Additional guidance on the MOT	6
A.1.1. Introduction	6
A.1.2. The realization of the lower tester	6
A.1.3. The realization of the upper tester	6
A.1.4 The realization of the test coordination procedures	6
A.2 Additional guidance on the ETS derivation process	7
A.2.1 Overview	7
A.2.2 Inputs to ETS derivation	7
A.2.3. ETS maintenance	8
A.3 Additional guidance on conformance logs	8
A.4 Additional guidance on documentation	9
A.4.1. Introduction	9
A.4.2. Test System Information document	9
A.4.3. Means of Testing Description document	9
A.4.4. Test Laboratory Client Information document	9
A.4.5. Test Laboratory Operating Instructions document	9

© ISO/IEC 1991

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

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 9646-4 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*.

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 (TTCN)
- Part 4: Test realization
- Part 5: Requirements on test laboratories and clients for the conformance assessment process

Annex A of this part of ISO/IEC 9646 is for information only.

Introduction

ISO/IEC 9646-1 and ISO/IEC 9646-2 define a general methodology for testing the conformance of implementations to OSI protocol specifications and/or transfer syntaxes issued as International Standards or CCITT Recommendations; these parts also put requirements on the production of OSI conformance testing standards and standardized Abstract Test Suites (standardized ATS).

ISO/IEC 9646-3 defines a standardized test notation, the Tree and Tabular Combined Notation (TTCN), for the specification of a standardized Abstract Test Suite.

Once OSI conformance testing standards and standardized Abstract Test Suites are available, the test results obtained by different test laboratories should be comparable, if they base their test operations on the same reference standardized ATS.

ISO/IEC 9646-5 puts requirements on the conformance assessment process, so that test results can be compared with those of other test laboratories, and can have a wide acceptance.

This part of ISO/IEC 9646 concentrates on the intermediate stage, namely, Test Realization. Before the test preparation can begin, a Means of Testing the Implementation Under Test (IUT) has to be made available.

Test Realizers are those organizations which take responsibility for providing such a Means of Testing (MOT).

ISO/IEC 9646-4 places requirements on Test Realization, to ensure that the execution of test cases reflects the behaviour specified in the reference standardized Abstract Test Suite. In this way, the purpose of the standardized ATS is achieved.

This part of ISO/IEC 9646 is also to be published by CCITT as Recommendation X.293(1991).

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

Part 4: Test realization

1 Scope

This part of ISO/IEC 9646 specifies requirements and gives guidance concerning the realization of a means of testing IUTs, in conformance with a reference OSI standardized ATS, specified in compliance with ISO/IEC 9646-2.

NOTE — This implies the use of standardized abstract test suites as defined in ISO/IEC 9646-1:1991, 3.6.31.

These requirements are limited to those aspects of a means of testing which can be mapped on to the abstract testing functions defined in ISO/IEC 9646-1, or which are essential to a proper use of the standardized ATS. Such aspects might include a facility to produce conformance logs, or the progression of the PIXIT proforma. Further implementation details of test systems and upper testers are outside the scope of this part of ISO/IEC 9646.

Acceptance and installation of means of testing are outside the scope of this part of ISO/IEC 9646.

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).

ISO/IEC 9646-1:1991, *Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 1: General concepts*.
(See also CCITT Recommendation X.290(1991)).

ISO/IEC 9646-2:1991, *Information technology - Open Systems Interconnection - Conformance Testing Method-*

ology and Framework - Part 2: Abstract test suite Specification.

(See also CCITT Recommendation X.291(1991)).

ISO/IEC 9646-3:-1, *Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 3: The Tree and Tabular Combined Notation (TTCN)*.

ISO/IEC 9646-5:1991, *Information technology - Open Systems Interconnection - Conformance Testing Methodology and Framework - Part 5: Requirements on test laboratories and clients for the Conformance Assessment Process*.

(See also CCITT Recommendation X.294(1991)).

3 Definitions

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

4 Abbreviations

For the purpose of this part of ISO/IEC 9646, the following abbreviations given in ISO/IEC 9646-1:1991, clause 4, apply:

ASP : abstract service primitive.

ATS : abstract test suite.

BIT : basic interconnection test.

ETS : executable test suite.

IUT : implementation under test.

MOT : means of testing.

OSI : open systems interconnection.

PATS : parameterized abstract test suite.

PCO : point of control and observation.

PDU : protocol data unit.

1) To be published.