INTERNATIONAL STANDARD

ISO/IEC 14363

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Information technology — Test methods for measuring conformance to MHS-based electronic messaging — Application Program Interface (API) [Language independent]

Technologies de l'information — Méthodes d'essai pour mesurer la conformité à la messagerie électronique basée sur MHS — Interface de programme d'application (API) [indépendante du langage]

Reference number
ISO/IEC 14363:1996(E)

Contents

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 14363 was prepared by IEEE (as IEEE Std 1326.1-1993) and was adopted, under a special "fast-track procedure", by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, in parallel with its approval by national bodies of ISO and IEC.

Annexes A and B of this International Standard are for information only.

Introduction

(This introduction is not a normative part of ISO/IEC 14363, Information technology—Test methods for measuring conformance to MHS-based electronic messaging—Application Program Interface (API) [Language independent], but is included for information only.)

The purpose of this International Standard is to define test methods for the language-independent MHS-based electronic messaging API contained in ISO/IEC 14361 {3}.

Related Standards

ISO/IEC 14361 {3} is intended to provide the basis for the definition of programming language bindings to which implementations and applications can conform. A specification for such a language binding, for the C programming language, is contained in ISO/IEC 14365 {B2}. This International Standard applies to test methods for measuring conformance to any such programming language binding specification.

The API defined in ISO/IEC 14361 {3} uses the mechanism for OSI abstract data manipulation (OM) defined in ISO/IEC 14360 {2}. ISO/IEC 14362 {4} defines the requirements that shall apply to test methods for measuring conformance to ISO/IEC 14360 {2}. A set of test methods used to measure conformance to ISO/IEC 14361 {3} shall satisfy the requirements of ISO/IEC 14362 {4}, as well as conforming to this International Standard.

IEEE Std 1003.3-1991 {5} defines the general requirements that shall apply to test methods for measuring conformance to POSIX. A set of test methods used to measure conformance to ISO/IEC 14361 {3} shall satify the requirements of IEEE Std 1003.3-1991 {5}, as well as conforming to this International Standard.

Overview

For each section of ISO/IEC 14361 {3}, this International Standard contains a corresponding section containing test assertions, in accordance with IEEE Std 1003.3-1991 {5}. A set of test methods conforms to this International Standard if it tests all of the test assertions.

Related Standards Activities

The following areas are under active consideration at this time, or are expected to become active in the near future, concerning extensions to this International Standard and similar efforts can be anticipated in the future:[1)]

(1) Directory services

(2) FTAM API

(3) Verification testing methods

(4) Network interface facilities

(5) System administration.

This International Standard is based on IEEE Std 1326.1-1993 {B4}, which was prepared by the P1224 Working Group, sponsored by the Portable Applications Standards Committee of the IEEE Computer Society.

1) A *Standards Status Report* that lists all current IEEE Computer Society standards projects is available from the IEEE Computer Society, 1730 Massachusetts Avenue NW, Washington, DC 20036-1903; Telephone: +1 202 371-0101; FAX: +1 202 728-9614.

Information technology—Test methods for measuring conformance to MHS-based electronic messaging—Application Program Interface (API) [Language independent]

Section 1: General

1.1 Scope

This International Standard defines requirements for test methods for measuring conformance to ISO/IEC 14361 {3}.

ISO/IEC 14361 {3} is stated in terms that are independent of any particular programming language, but each implementation that conforms to it implements a particular programming language binding, and conforms to its programming language binding specification. Each set of test methods for measuring conformance to ISO/IEC 14361 {3} assumes a particular programming language binding specification. Each programming language binding specification may impose further programming language specific requirements on the test methods which, in conjunction with the requirements imposed by this International Standard, constitute the requirements that shall be satisfied by test methods used for measuring conformance to that programming language binding specification. This International Standard applies to all sets of test methods for measuring conformance to any programming language binding specification for ISO/IEC 14361 {3}.

1.2 Normative References

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard 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.

{1} ISO 3166: 1993,[1] *Codes for the Representation of Names of Countries.*

{2} ISO/IEC 14360: 1996, *Information technology—Open Systems Interconnection (OSI) abstract data manipulation—Application Program Interface (API) [Language independent].*

{3} ISO/IEC 14361: 1996, *Information technology—MHS-based electronic messaging—Application Program Interface (API) [Language independent].*

{4} ISO/IEC 14362: 1996, *Information technology—Test methods for measuring conformance to Open Systems Interconnection (OSI) abstract data manipulation—Application Program Interface (API) [Language independent].*

{5} IEEE Std 1003.3-1991,[2] *IEEE Standard for Information Technology—Test Methods for Measuring Conformance to POSIX.*

{6} CCITT Recommendation X.121: 1984,[3] *International Numbering Plan for Public Data Networks. CCITT Red Book,* Fascicle VIII.4.

1.3 Conformance

A set of test methods that conforms to this International Standard shall conform to IEEE Std 1003.3-1991 {5}, with references to the "POSIX.n test method specification" being interpreted as references to this International Standard, and references to "the POSIX standard for which conformance is being measured" being interpreted as references to ISO/IEC 14361 {3}.

In addition to meeting the conformance criteria defined in IEEE Std 1003.3-1991 {5}, a set of test methods that conforms to this International Standard shall test all documentation assertions defined in this International Standard.

NOTE: Conformance to IEEE Std 1003.3 {5} implies that the test methods will test all other assertions defined in this International Standard.

1) ISO/IEC documents can be obtained from the ISO Central Secretariat, 1 Rue de Varembé, Case Postale 56, CH-1211, Genève 20, Switzerland/Suisse.

2) IEEE documents can be obtained from the IEEE Service Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ, 08855-1331, USA. Telephone: 1(800)678-IEEE or +1 (908) 981-1393 (outside US).

3) CCITT documents can be obtained from the Telecommunication Standardization Bureau of the International Telecommunication Union, Sales Section, Place des Nations, CH-1211, Genève 20, Switzerland/Suisse.

Section 2: Terminology and General Requirements

2.1 Conventions

2.1.1 General and Typographical Conventions

Language-independent concrete OM class names, OM attribute names, and OM-attribute value names are spelled with hyphens between words (e.g., **conversion-loss-prohibited**). The first letters of language-independent OM class and OM attribute names are capitalized (e.g., **Redirection-Record**).

Language-independent datatype, operation, argument and error names are lowercase and are spelled with underscores between words (e.g., ma_start_delivery).

The use of fonts in this International Standard is as follows:

- The Helvetica font is used for:
  - Language-independent operation names, such as ma_start_delivery
  - Language-independent datatype names, such as mh_interval_type
  - Language-independent error names, such as feature_unavailable
- The *italic* font is used for:
  - Language-independent operation arguments, such as *user_address*
  - The introduction of important terms
  - Cross-references in 2.2
- The **bold** font is used for:
  - Language-independent concrete OM class names, such as **Delivered-Report**
  - Language-independent OM attribute names, such as **Algorithm-Datum**
  - Language-independent OM attribute values, such as **conversion-loss-prohibited**
- The ***bold italic*** font is used for:
  - Language-independent abstract OM class names, such as ***Delivery-Report***

— The `constant width` (Courier) font is used for:

  — References to terms defined in international standards upon which this International Standard is based.

2.2 Definitions

2.2.1 Terminology

For the purposes of this International Standard, the following definitions apply:

2.2.1.1 conformance document: A document provided by an implementor that contains implementation details. [ISO/IEC 9945-1 {B1}]

2.2.1.2 may: An indication of an optional feature. [ISO/IEC 9945-1 {B1}]

With respect to implementations, the word *may* is to be interpreted as an optional feature that is not required in this International Standard, but that can be provided. With respect to Strictly Conforming Applications, the word *may* means that the optional feature shall not be used.

2.2.1.3 shall: An indication of a requirement on the implementation or on Strictly Conforming Applications, where appropriate. [ISO/IEC 9945-1 {B1}]

2.2.1.4 should:

(1) With respect to implementations, an indication of an implementation recommendation, but not a requirement.

(2) With respect to applications, an indication of a recommended programming practice for applications and a requirement for Strictly Conforming Applications. [ISO/IEC 9945-1 {B1}]

2.2.1.5 supported: A condition regarding optional functionality.

Certain functionality in this International Standard is optional, but the interfaces to that functionality are always required. If the functionality is *supported*, the interfaces work as specified by this International Standard (except that they do not return the error condition indicated for the unsupported case). If the functionality is not *supported*, the interface shall always return the indication specified for this situation. [ISO/IEC 9945-1 {B1}]

2.2.1.6 system documentation: All documentation provided with an implementation, except the conformance document.

Electronically distributed documents for an implementation are considered part of the system documentation. [ISO/IEC 9945-1 {B1}]

2.2.2 General Terms

For the purposes of this International Standard, the following definitions apply:

2.2.2.1 assertion: A statement that is derived from the standard to which conformance is being measured, that is true for a conforming implementation, and that pertains either to functionality or behavior of a functional interface or namespace allocation or to the documentation associated with the implementation being tested [ISO/IEC 14360 {2}].

2.2.2.2 generic interface: A version of an interface that is independent of any particular programming language.

2.2.2.3 programming language binding specification: For a language-independent specification, a document that specifies, in terms of a particular programming language, the behavior that the language-independent specification specifies in language-independent terms.

It may also specify additional behavior that is relevant to the usage of the particular programming language [ISO/IEC 14360 {2}].

2.2.2.4 test methods: The software, procedures, or other means specified to measure conformance to a specification [ISO/IEC 14360 {2}].

2.2.3 Abbreviations

For the purposes of this International Standard, the following abbreviations apply:

2.2.3.1 OM: Object Management.

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Section 3: Test Assertions for Section General

3.1 Scope

There are no test assertions for this clause.

3.2 Normative References

There are no test assertions for this clause.

3.3 Conformance

3.3.1 Implementation Conformance

3.3.1.1 Conformance Requirements

D01	The manufacturer shall identify the interface (MA, MT, or both) that the product implements, and state what roles (client, service, or both) it plays for each.
001(A)	The product shall implement the OM interface as defined in ISO/IEC 14360 {2}, satisfying its conformance requirements, and play the same roles for that interface as it plays for the MA and MT interfaces.
D02	If the product plays the role of service for the MA or MT interface: The manufacturer shall state which features the product implements.
002(C)	If the product plays the role of service for the MA interface: The product shall implement the Basic Access FU.
003(C)	If the product plays the role of service for the MA interface: The product shall implement the Submission FU, the Delivery FU, the Retrieval FU, or any combination of the three.
004(C)	If the product plays the role of service for the MT interface: The product shall implement the Basic Transfer FU.