AS ISO/IEC 24709.1:2021
ISO/IEC 24709-1:2017

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Information technology — Conformance testing for the biometric application programming interface (BioAPI)

Part 1: Methods and procedures



AS ISO/IEC 24709.1:2021

This Australian Standard ® was prepared by IT-032, Biometrics and Identification. It was approved on behalf of the Council of Standards Australia on 20 September 2021.

This Standard was published on 1 October 2021.

The following are represented on Committee IT-032:

Australian Federal Police
Australian Information Industry Association
Australian Retailers Association
Centrelink
Defence Science & Technology Group
Department of Foreign Affairs and Trade
Department of Home Affairs — Identity and Biometrics Division
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This Standard was issued in draft form for comment as DR AS ISO/IEC 24709.1:2021.

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ISBN 978 1 76113 515 6

AS ISO/IEC 24709.1:2021
ISO/IEC 24709-1:2017

Information technology — Conformance testing for the biometric application programming interface (BioAPI)

Part 1: Methods and procedures

Originated as AS ISO/IEC 24709.1—2010.
Second edition AS ISO/IEC 24709.1:2021.

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Preface

This Standard was prepared by the Standards Australia Committee IT-032, Biometrics and Identification, to supersede AS ISO/IEC 24709.1—2010, *Information technology—Conformance testing for the biometric application programming interface (BioAPI), Part 1: Methods and procedures*.

The objective of this document is to specify the concepts, framework, test methods, and criteria required to test conformity of biometric products claiming conformance to BioAPI (see AS ISO/IEC 19784.1:2019). Guidelines for specifying BioAPI conformance test suites, writing test assertions, and defining procedures to be followed during the conformance testing are provided.

This document is concerned with conformance testing of biometric products claiming conformance to BioAPI (see AS ISO/IEC 19784.1:2019).

It is not concerned with testing other characteristics of biometric products or other types of testing of biometric products (i.e. acceptance, performance, robustness, security, etc.).

This document is not applicable to testing by means of test methods, which are specific to particular biometric products.

This document is applicable to the development and use of conformance test method specifications, BioAPI conformance test suites, and conformance testing programs for BioAPI-conformant products. It is intended primarily for use by testing organizations but can be applied by developers and users of test assertions and test method implementations.

This document is identical with, and has been reproduced from, ISO/IEC 24709-1:2017, *Information technology — Conformance testing for the biometric application programming interface (BioAPI) — Part 1: Methods and procedures*.

As this document has been reproduced from an International Standard, a full point substitutes for a comma when referring to a decimal marker.

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The terms “normative” and “informative” are used in Standards to define the application of the appendices or annexes to which they apply. A “normative” appendix or annex is an integral part of a Standard, whereas an “informative” appendix or annex is only for information and guidance.

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

This second edition cancels and replaces the first edition (ISO/IEC 24709-1:2007), which has been technically revised.

A list of all parts in the ISO/IEC 24709 series can be found on the ISO website.

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Introduction

This document defines a conformance testing methodology for ISO/IEC 19784-1. It specifies three conformance testing models that enable conformance testing of each of the following BioAPI components: an application, a framework, or a BSP. It also specifies an assertion language that is used for the definition of test assertions. Actual test assertions for each of the BioAPI components are defined in the subsequent parts of the ISO/IEC 24709 series.

This document also contains informative guidelines regarding general concepts related to establishing and administering a BioAPI conformance assessment and certification program. These informative guidelines identify the types of activities, responsibilities, services, and documentation recommended for conducting conformity assessment and certification of BioAPI-conformant implementations. Further, this document provides informative guidelines for establishing a complete conformity assessment methodology for BioAPI specification.

Clause 6 describes the general test method and conformance testing models for BioAPI.

Clause 7 defines the assertion language, based on XML, used for definition of conformance test assertion.

Clause 8 defines the elements of the assertion language.

Clause 9 specifies the use of the standard BioAPI interface functions of BioAPI in conformance testing.

Clause 10 defines the built-in variables of the assertion language.

Clause 11 defines the test log using XML syntax.

Clause 12 defines the test report using XML syntax.

Clause 13 describes the general concept and structure of a BioAPI conformance test suite.

Annex A defines the XML schema of the assertion language.

Annex B defines the ASN.1 schema of the assertion language.

Annex C defines the XML schema for the test log.

Annex D describes a primer of a BioAPI test method implementation, including elements of the conformance test process and description of the test categories.

Annex E provides the relationship diagrams for the assertion language.

The Bibliography references a number of standards organizations, including ISO, IEC, NIST, IEEE and other organizations, that have published a number of documents and white papers related to conformity assessment in general and conformance testing in particular.

NOTE Rather than make normative references to these documents, this document incorporates appropriate excerpts of their text, in some cases paraphrasing the text or adapting the provisions to the specific circumstances. Therefore, these documents are listed in the Bibliography or are referred in the body text explicitly as appropriate.

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Information technology — Conformance testing for the biometric application programming interface (BioAPI)

Part 1: Methods and procedures

1 Scope

This document specifies the concepts, framework, test methods, and criteria required to test conformity of biometric products claiming conformance to BioAPI (see ISO/IEC 19784-1). Guidelines for specifying BioAPI conformance test suites, writing test assertions, and defining procedures to be followed during the conformance testing are provided.

This document is concerned with conformance testing of biometric products claiming conformance to BioAPI (see ISO/IEC 19784-1). It is not concerned with testing other characteristics of biometric products or other types of testing of biometric products (i.e. acceptance, performance, robustness, security, etc.) Testing by means of test methods, which are specific to particular biometric products, are not the subject of this document.

This document is applicable to the development and use of conformance test method specifications, BioAPI conformance test suites, and conformance testing programs for BioAPI-conformant products. It is intended primarily for use by testing organizations, but can be applied by developers and users of test assertions and test method implementations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC 19784-1, *Information technology — Biometric application program interface — Part 1: BioAPI specification*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 19784-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
abstract test engine
conceptual machine capable of performing conformance tests on an instance of a standard BioAPI component

3.2
base standard
standard for which a *test method specification* (3.13) is written and/or a *test method implementation* (3.12) is developed

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