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Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 —

Part 9: Vascular image data

Technologies de l'information — Méthodologie d'essai de conformité pour les formats d'interéchange de données biométriques définis dans l'ISO/CEI 19794 —

Partie 9: Données d'images vasculaires

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ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

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Foreword

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International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 29109-9 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

ISO/IEC 29109 consists of the following parts, under the general title *Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794*:

— *Part 1: Generalized conformance testing methodology*

— *Part 2: Finger minutiae data*

— *Part 4: Finger image data*

— *Part 5: Face image data*

— *Part 6: Iris image data*

— *Part 7: Signature/sign time series data*

— *Part 8: Finger pattern skeletal data*

— *Part 9: Vascular image data*

— *Part 10: Hand geometry silhouette data*

The following parts are under preparation:

— *Part 14: DNA data*

Finger pattern spectral data, signature/sign processed dynamic data and voice data will form the subjects of future parts.

Introduction

ISO/IEC 19794-9:2007 specifies a data record interchange format for exchange of human vascular image data among systems within a Common Biometric Exchange Formats Framework (CBEFF) data structure. The data stored in a vascular data record often contains the metadata storing the subject-specific and image-specific, as well as the technology being used. This part of ISO/IEC 29109 establishes tests for checking the correctness of the binary record.

When vascular image data is transmitted among systems, it can be interfered with by noise due to the transmission line. The received data might be incorrect during the exchange process. Therefore, there is a need to conduct conformance tests of commercial products to determine whether the data conform to ISO/IEC 19794-9:2007 before using the data for other purposes.

Vascular biometric technology is emerging or is under development by many research organizations. The vascular image resources are also being used by many vendors, who have utilized the vascular technology as a recognition or verification method in their systems. Currently, however, there is no standardized method for conducting conformance tests of vascular image data that supports ISO/IEC 19794-9:2007 during the exchange of vascular image data among systems. Application developers and implementers of different organizations can interpret ISO/IEC 19794-9:2007 in different manners. Therefore, a standardized conformance testing methodology is necessary for achieving interoperability among implementations.

This part of ISO/IEC 29109 supports those applications that require use of vascular image data according to ISO/IEC 19794-9:2007. It defines a testing methodology to ensure conformance of a vendor's application or service to ISO/IEC 19794-9:2007. Thus, it is intended to:

— establish elements of the conformance testing methodology framework that are specific to the vascular image-based data record requirements of ISO/IEC 19794-9:2007 conformance testing;

— define requirements and guidelines for specifying conformance test suites and related test methods for measuring conformity of products and services to the vascular image data record requirements of ISO/IEC 19794-9:2007; and

— define testing and reporting procedures to be followed before, during, and after conformance testing.

This part of ISO/IEC 29109 is applicable to the development and use of conformity test method specifications, conformity test suites for ISO/IEC 19794-9:2007 records, and conformance testing programs for ISO/IEC 19794-9:2007 conformant products. It is intended primarily for use by testing organizations, but can be applied by developers and users of test method specifications and test method implementations.

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Part 9: Vascular image data

1 Scope

This part of ISO/IEC 29109 specifies elements of conformance testing methodology, test assertions, and test procedures as applicable to ISO/IEC 19794-9.

It specifies

— test assertions of the structure of the vascular image data format as specified in ISO/IEC 19794-9:2007 (Type A Level 1 as defined in ISO/IEC 29109-1),

— test assertions of internal consistency by checking the types of values that can be contained within each field (Type A Level 2 as defined in ISO/IEC 29109-1).

It does not specify

— a test of conformance of CBEFF structures required by ISO/IEC 19794-9:2007,

— a test of consistency with an input biometric data record (Level 3),

— a test of other characteristics of biometric products or other types of testing of biometric products (e.g. acceptance, performance, robustness, security),

— a test of conformance of systems that do not produce ISO/IEC 19794-9:2007 records.

2 Conformance

Biometric data interchange format conformance tests conform to this part of ISO/IEC 29109 if they satisfy all of the normative requirements related to Clause 6. Specifically, they shall use the test methodology specified in Clauses 6, 7 and 8 of ISO/IEC 29109-1:2009, and all Level 1 and Level 2 tests shall use the assertions defined in Table 2 in this part of ISO/IEC 29109.

Implementations of ISO/IEC 19794-9:2007 tested according to the specified methodology shall be able to claim conformance only to those Biometric Data Record (BDR) requirements specified in ISO/IEC 19794-9:2007 that are tested by the test methods established by this methodology.

Implementations of ISO/IEC 19794-9:2007 do not necessarily need to conform to all possible aspects of ISO/IEC 19794-9:2007, but only to those ISO/IEC 19794-9:2007 requirements that are claimed to be supported by the implementation in an Implementation Conformance Statement (ICS), filled out in accordance with Clause 8 of ISO/IEC 29109-1:2009 and Table 1 in this part of ISO/IEC 29109.

NOTE Level 3 and higher are not tested.

3 Normative references

The following referenced documents are indispensable for the application 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/IEC 19794-9:2007, *Information technology — Biometric data interchange formats — Part 9: Vascular image data*

ISO/IEC 29109-1:2009, *Information technology — Conformance testing methodology for biometric data interchange formats defined in ISO/IEC 19794 — Part 1: Generalized conformance testing methodology*