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

Part 4: Finger 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 4: Données d'image du doigt

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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.

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 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 8: Finger pattern skeletal data*

— *Part 9: Vascular image data*

— *Part 10: Hand geometry silhouette data*

The following part is under preparation:

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

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Introduction

ISO/IEC 19794-4:2005 specifies a data record interchange format for recording, storing, and transmitting one or more finger images within a common biometric exchange formats framework (CBEFF) data structure. Each image is accompanied by image-specific metadata contained in a header record. This part of ISO/IEC 29109 establishes tests for checking the correctness of the binary record.

The objective of ISO/IEC 19794-4:2005 cannot be completely achieved until biometric products can be tested to determine whether they conform to those specifications. Conforming implementations are a necessary prerequisite for achieving interoperability among implementations; therefore there is a need for a standardized conformance testing methodology, test assertions, and test procedures as applicable to specific modalities addressed by each part of ISO/IEC 19794. The test assertions will cover, as far as practical, the ISO/IEC 19794 requirements (covering the most critical features), so that the conformity results produced by the test suites will reflect the real degree of conformity of the implementations to ISO/IEC 19794 data interchange format records. This is the motivation for the development of this conformance testing methodology.

This part of ISO/IEC 29109 supports those applications that require use of finger image data according to ISO/IEC 19794-4:2005. It defines a testing methodology to ensure conformance of a vendor's application or service to ISO/IEC 19794-4:2005. Thus this part of ISO/IEC 29109 is intended to

— establish elements of the conformance testing methodology framework that are specific to the finger and palm image-based data record requirements of ISO/IEC 19794-4:2005 conformance testing,

— define requirements and guidelines for specifying conformance test suites and related test methods for measuring conformity of products and services to the finger image data record requirements of ISO/IEC 19794-4:2005, 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 19794-4:2005 records, and conformance testing programs for ISO/IEC 19794-4:2005 conformant products. It is intended primarily for use by testing organizations, but may be applied by developers and users of test method specifications and test method implementations. The table of test assertions (Clause 6.2, Table 2) specifies test assertions for the conformance requirements of ISO/IEC 19794-4:2005.

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

Part 4: Finger 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 19794-4.

It establishes

— test assertions of the structure of the finger image data format as specified in ISO/IEC 19794-4:2005 (Type A Level 1 as defined in ISO/IEC 29109-1:2009),

— test asssertions of internal consistency by checking the types of values that may be contained within each field (Type A Level 2 as defined in ISO/IEC 29109-1:2009),

— tests of semantic assertions (Type A Level 3 as defined in ISO/IEC 29109-1:2009).

It does not establish

— tests of conformance of CBEFF structures required by ISO/IEC 19794-4:2005,

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

— tests of conformance of systems that do not produce ISO/IEC 19794-4:2005 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 of this part of ISO/IEC 29109.

Implementations of ISO/IEC19794-4:2005 tested according to the methodology specified shall be able to claim conformance only to those biometric data record (BDB) requirements specified in ISO/IEC 19794-4:2005 that are tested by the test methods established by this methodology.

Implementations of ISO/IEC 19794-4:2005 do not necessarily need to conform to all possible aspects of ISO/IEC 19794-4:2005, but only to those ISO/IEC 19794-4:2005 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 of this part of ISO/IEC 29109.

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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 19794-4:2005, *Information technology — Biometric data interchange formats — Part 4: Finger 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*

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