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AMENDMENT 1
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Information technology — Biometric data interchange formats —

Part 4: Finger image data

AMENDMENT 1: Conformance testing methodology and clarification of defects

Technologies de l'information — Formats d'échange de données biométriques —

Partie 4: Données d'image du doigt

AMENDEMENT 1: Méthodologie d'essai de conformité et précisions concernant les défauts

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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.

Amendment 1 to ISO/IEC 19794-4:2011 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

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Information technology — Biometric data interchange formats —

Part 4:
Finger image data

AMENDMENT 1: Conformance testing methodology and clarification of defects

1. *The following text is to be added to the "Introduction" clause of ISO/IEC 19794-4:*

   Annex A addresses conformance testing to this part of ISO/IEC 19794. Annex A is distinct from ISO/IEC 29109-4, which addresses conformance testing to ISO/IEC 19794-4:2005.

2. *The following text is to be added to the "Scope" clause of ISO/IEC 19794-4:*

   This part of ISO/IEC 19794 also specifies elements of conformance testing methodology, test assertions, and test procedures as applicable to this part of ISO/IEC 19794. It establishes test assertions pertaining to the structure of the finger image data format (Type A Level 1 as defined in ISO/IEC 19794-1:2011 AMD 1), test assertions pertaining to internal consistency of the types of values that may be contained within each field (Type A Level 2 as defined in ISO/IEC 19794-1:2011 AMD 1), and semantic test assertions (Type A Level 3 as defined in ISO/IEC 19794-1:2011 AMD 1).

   The conformance testing methodology specified in this part of ISO/IEC 19794 does not establish:

   — 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 data records conforming to the requirements of this part of ISO/IEC 19794.

3. *The following text is to be added to the "Conformance" clause of ISO/IEC 19794-4:*

   Biometric data interchange format conformance tests conform to this part of ISO/IEC 19794 if they satisfy all of the normative requirements set forth in clause 8. Specifically, they shall use the test methodology specified in Clauses A.1, A.2 and A.3 of ISO/IEC 19794-1:2011 AMD 1, and all Level 1, Level 2 and Level 3 tests shall use the assertions defined in Table A.2 of Clause A.3 of this part of ISO/IEC 19794 in conformity with the concept and rules set in 19794-1 Annex A[1].

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

   Implementations of this part of ISO/IEC 19794 do not necessarily need to conform to all possible aspects of this part of ISO/IEC 19794, but only to those requirements that are claimed to be supported by the

[1] Annex A is specified in ISO/IEC 19794-1:2011 Amendment 1.

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implementation in an implementation conformance statement (ICS), filled out in accordance with Clause A.3 of ISO/IEC 19794-1:2011 AMD 1 and Table A.2 of Clause A.3 of this part of ISO/IEC 19794.

4. *In clause 8.3.1 of ISO/IEC 19794-4:2011, Table 2, row "Image compression algorithm", Replace "0 to 5" with "0 to 6".*

5. *Replace Annex A of ISO/IEC 19794-4:2011 with the following one:*

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Annex A
(normative)

Conformance testing methodology

A.1 Introduction

This normative annex specifies elements of conformance testing methodology, test assertions, and test procedures as applicable to this part of biometric data interchange format standard. Specifically, it establishes

— test assertions of the structure of the finger image data format as specified in this Part of ISO/IEC 19794 (Type A Level 1 as defined in ISO/IEC 19794-1:2011 AMD 1),

— test asssertions of internal consistency by checking the types of values that maybe contained within each field (Type A Level 2 as defined in ISO/IEC 19794-1:2011 AMD 1),

— tests of semantic assertions (Type A Level 3 as defined in ISO/IEC 19794-1:2011 AMD 1).

This normative annex does not establish

— test assertions on other characteristics of biometric products (e.g. acceptance, performance, robustness, security),

— conformance test assertions on systems that do not produce finger image record as specified in this part of ISO/IEC 19794.

The conformance testing methodology specified in ISO/IEC 19794-1: 2011 AMD 1 shall apply. The content of the tables below is based on ISO/IEC 19794-1:2011, AMD 1 and shall only be used in the context of that conformance testing methodology.

A.2 Table of requirements

The normative requirements specified in this Part of ISO/IEC 19794 are listed in Table A.1. The supplier of the IUT should explain which optional components of the standard are supported and the testing laboratory shall note the results of the test.

Table A.1 — Data format requirements specified in this Part of ISO/IEC 19794

Requirement Identifier	Governing section	Requirement Summary	Level	Status	IUT Support	Supported Range	Test Result
Finger image general header							
R-1.	8.1	Each record shall pertain to a single subject.	3C	O-1		N/A	N/A
R-2.	8.1	Each record shall contain at least one representation for each of one or more fingers, multiple fingers (single image records), or palms.	3C	O-1		N/A	N/A
R-3.	8.2.1	Information shall be included for each field within the header.	1	M			
R-4.	8.2.2 Table 1	The format identifier shall be recorded in four bytes.	1	M			

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Requirement Identifier	Governing section	Requirement Summary	Level	Status	IUT Support	Supported Range	Test Result
R-5.	8.2.2 Table 1	The format identifier shall consist of three characters "FIR" (0x464952) followed by a zero byte as a NULL string terminator. Therefore, the format identifier shall be 0x46495200.	1	M		N/A	
R-6.	8.2.3 Table 1	The Version Number shall be recorded in four bytes.	1	M		N/A	
R-7.	8.2.3 Table 1	This version number shall consist of three ASCII numerals “020” (0x30323000) followed by zero byte as a NULL string terminator.	1	M		N/A	
R-8.	8.2.4 Table 1	The length (in bytes) of the entire image data record shall be recorded in four bytes. Valid values are 57 to (2^{32} -1)	2	M			
R-9.	8.2.4	This length of entire record shall be total length of the general record header and one or more representation records.	2	M			
R-10.	8.2.5 Table 1	The total number of finger image representations contained in the finger image data record shall be recorded in two bytes. Valid values are 1 to 672.	1,2	M			
R-11.	8.2.5	A minimum of one representation is required.	1	M			
R-12.	8.2.6 Table 1	The one-byte certification flag shall indicate whether each representation header includes a certification record. Valid values are 00_{Hex} and 01_{Hex}.	1	M			
R-13.	8.2.6	A value of 00_{Hex} shall indicate that none of the representations contains a certification record.	2	M			
R-14.	8.2.6	A value of 01_{Hex} shall indicate that all representations contain a certification record.	2	M			
R-15.	8.2.7 Table 1	The number of finger or palm images included in the record shall be recorded in one byte. Valid values are 1 to FF_{HEX}.	1	M			
Finger image representation header							
R-16.	8.3.1	A finger or palm representation header shall start each section of finger data providing information for that representation of a single finger image, multi-finger image or palm image.	3C	O-1		N/A	N/A
R-17.	8.3.1	For each such image there shall be one finger header record accompanying the representation of the image data.	2	M		N/A	
R-18.	8.3.1	The representaion header shall occupy a minimum of 41 bytes (assuming no certification blocks and no quality blocks are present). Otherwise, it shall be 42+ 5*num_quality_block+ 3*num_certification_block	2	M			
R-19.	8.3.1	The compressed or uncompressed image data for that image representation shall immediately follow the image representation header.	3C	O-1		N/A	N/A
R-20.	8.3.1	Subsequent image representations (including the image representation header) will be concatenated to the end of the previous image representation.	3C	O-1		N/A	N/A

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