INTERNATIONAL STANDARD

ISO/IEC 19794-5

Second edition
2011-11-01

AMENDMENT 1
2014-02-15

Information technology — Biometric data interchange formats —

Part 5: Face image data

AMENDMENT 1: Conformance testing methodology and clarification of defects

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

Partie 5: Données d'image de la face

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

Reference number
ISO/IEC 19794-5:2011/Amd.1:2014(E)

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

Published in Switzerland

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 shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to ISO/IEC 19794-5:2011 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

Information technology — Biometric data interchange formats —

Part 5: Face image data

AMENDMENT 1: Conformance testing methodology and clarification of defects

Add to the "Introduction" clause of ISO/IEC 19794-5:2011

The definition of conformance testing (Annex A) is distinct from the ISO/IEC 29109-5, which addressed conformance testing only of the first, 2005, edition of this part of the ISO/IEC 19794 standard.

Add to the "Scope" clause of ISO/IEC 19794-5:2011

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 face 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.

Add at the end of clause 3:

"ISO/IEC/IEEE 60559, *Information technology — Microprocessor Systems — Floating-Point arithmetic*"

Replace in 2nd paragraph of clause 5.5.9.1

"The encoding B_Y of the yaw angle Y shall be in degrees as a byte (1 byte) with values from –180 to 180 modulo 2"

With

"The encoded value, B_Y, shall be stored in 1 byte with values 0 to 180 computed from a real-valued yaw angle estimate, -180 ≤ Y < 180, as follows"

Replace in 2nd paragraph of clause 5.5.9.2

"The encoding B_P of the pitch angle P shall be in degrees as a byte (1 byte) with values from –180 to 180 modulo 2"

With

"The encoded value, B_P, shall be stored in 1 byte with values 0 to 180 computed from a real-valued pitch angle estimate, -180 ≤ P < 180, as follows:"

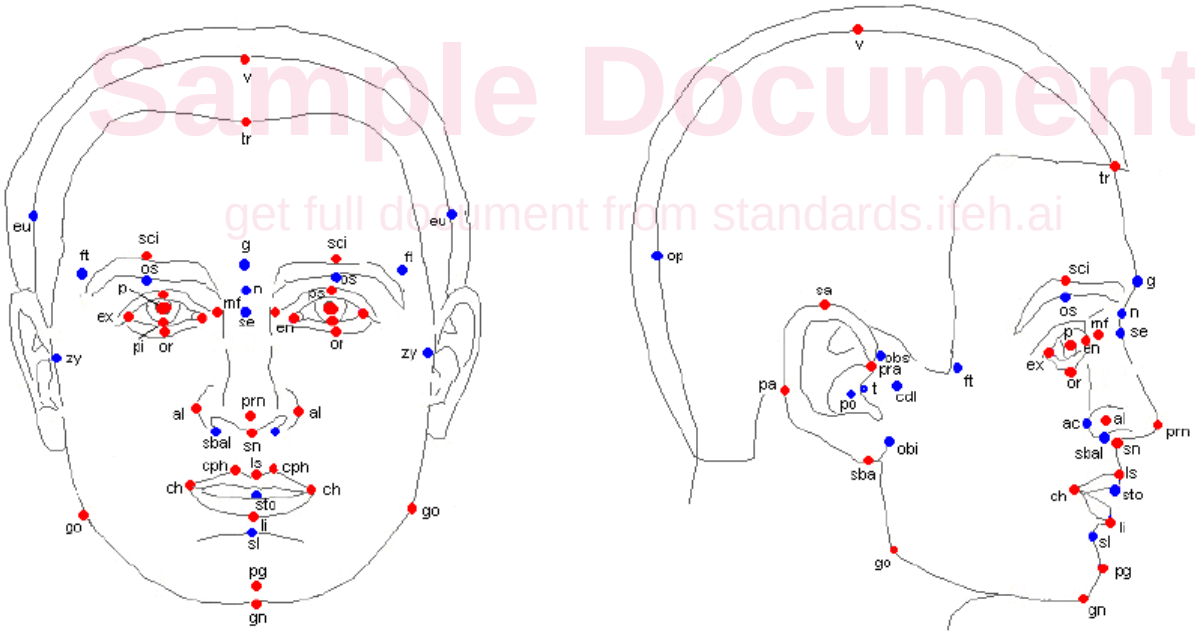
Replace in 2nd paragraph of clause 5.5.9.3

"The encoding B_R of the roll angle R shall be in degrees as a byte (1 byte) with values from –180 to 180 modulo 2"

With

"The encoded value, B_R, shall be stored in 1 byte with values 0 to 180 computed from a real-valued roll angle estimate, -180 ≤ R < 180, as follows:"

Replace Figure 9 with



Replace Table 15 with

Table 15 — Definitions of the anthropometric landmarks

Point Identifier	Point Code	MPEG4	Anthropometric point name	How to point
v	1.1	11.4	vertex	The highest point of head when the head is oriented in Frankfurt Horizon. Refer to Annex E for the definition of the Frankfurt Horizon.
g	1.2		glabella	The most prominent middle point between the eyebrows
op	1.3		opisthocranion	Situated in the occipital region of the head is most distant from the glabella
eu	1.5, 1.6		eurion	The most prominent lateral point on each side of the skull in the area of the parietal and temporal bones
ft	1.7, 1.8		frontotemporale	The point on each side of the forehead, laterally from the elevation of the linea temporalis
tr	1.9	11.1	trichion	The point on the hairline in the midline of the forehead
zy	2.1, 2.2		zygion	The most lateral point of each of the zygomatic
go	2.3,2.4	2.13, 2.14	gonion	The most lateral point on the mandibural angle close to the bony gonion
sl	2.5		sublabiale	Determines the lower border of the lower lip or the upper border of the chin
pg	2.6	2.10	pogonion	The most anterior midpoint of the chin, located on the skin surface in the front of the identical bony landmark of the mandible
gn	2.7	2.1	menton (or gnathion)	The lowest median landmark on the lower border of the mandible
cdl	2.9, 2.10		condylion laterale	The most lateral point on the surface of the condyle of the mandible
en	3.1, 3.2	3.11, 3.8	endocanthion	The point at the inner commissure of the eye fissure
ex	3.3, 3.4	3.7, 3.12	exocanthion (or ectocanthion)	The point at the outer commissure of the eye fissure
p	3.5, 3.6	3.5, 3.6	center point of pupil	Is determined when the head is in the rest position and the eye is looking straight forward
or	3.7, 3.8	3.9, 3.10	orbitale	The lowest point on the lower margin of each orbit
ps	3.9, 3.10	3.1, 3.2	palpebrale superius	The highest point in the midportion of the free margin of each upper eyelid
pi	3.11, 3.12	3.3, 3.4	palpebrale inferius	The lowest point in the midportion of the free margin of each lower eyelid
os	4.1, 4.2		orbitale superius	The highest point on the lower border of the eyebrow
sci	4.3, 4.4	4.3, 4.4	superciliare	The highest point on the upper border in the midportion of each eyebrow
n	5.1		nasion	The point in the middle of both the nasal root and nasofrontal suture
se	5.2		sellion (or subnasion)	Is the deepest landmark located on the bottom of the nasofrontal angle
al	5.3, 5.4	9.1, 9.2	alare	The most lateral point on each alar contour
prn	5.6	9.3	pronasale	The most protruded point of the apex nasi

Point Identifier	Point Code	MPEG4	Anthropometric point name	How to point
sn	5.7	9.15	subnasale	The midpoint of the angle at the columella base where the lower border of the nasal septum and the surface of the upper lip meet
sbal	5.9, 5.10		subalare	The point at the lower limit of each alar base, where the alar base disappears into the skin of the upper lip
ac	5.11, 5.12		alar curvature (or alar crest) point	The most lateral point in the curved base line of each ala
mf	5.13, 5.14	9.6, 9.7	maxillofrontale	The base of the nasal root medially from each endocanthion
cph	6.1, 6.2	8.9, 8.10	christa philtri landmark	The point on each elevated margin of the philtrum just above the vermilion line
ls	6.3	8.1	labiale (or labrale) superius	The midpoint of the upper vermillion line
li	6.4	8.2	labiale (or labrale) inferius	The midpoint of the lower vermillion line
ch	6.5, 6.6	8.3, 8.4	cheilion	The point located at each labial commissure
sto	6.7		stomion	The imaginary point at the crossing of the vertical facial midline and the horizontal labial fissure between gently closed lips, with teeth shut in the natural position
sa	7.1, 7.2	10.1, 10.2	superaurale	The highest point of the free margin of the auricle
sba	7.3, 7.4	10.5, 10.6	subaurale	The lowest point of the free margin of the ear lobe
pra	7.5, 7.6	10.9, 10.10	preaurale	The most anterior point on the ear, located just in front of the helix attachment to the head
pa	7.7, 7.8	10.3, 10.4	postaurale	The most posterior point on the free margin of the ear
obs	7.9, 7.10		otobasion superious	The point of attachment of the helix in the temporal region
obi	7.11, 7.12		otobasion infrious	The point of attachment of the ear lobe to the cheek
po	7.13, 7.14		porion (soft)	The highest point of the upper margin of the cutaneous auditory meatus
t	8.1, 8.2		tragion	The notch on the upper margin of the tragus

Replace in clause 5.10.4

"Each factor is represented by a mandatory four byte float value"

With

"Each factor is represented by a mandatory four byte float value and be coded as defined in the ISO/IEC/IEEE 60559 single precision binary floating-point format, i.e. the 'binary32' format. The values NaN (Not a Number), positive inf (infinity) and negative inf shall not be encoded"

Replace in Clause 14, Table 38, Column 3, Row 2

{iso registration-authority cbeff(19785)organization(0) 257bdbs(0) face-image (8)}

with

{iso(1) registration-authority(1) cbeff(19785) biometric-organization(0) jtc1-sc37(257) bdbs(0) face-image(8)}

Replace Annex A with the following one.

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 face 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 assertions 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 19794-1:2011/Amd.1),

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

This conformance testing metodology does not establish

— tests of conformance of CBEFF structures required by ISO/IEC 19794-1:2011,

— tests of conformance of the image data to the quality-related specifications of ISO/IEC 19794-1:2011,

— tests of conformance of the image data blocks to the respective JPEG or JPEG 2000 standards,

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

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 are listed in Table 1. The supplier of the IUT can explain which optional components of the standard are supported and the testing laboratory can note the results of the test.

Under subformat applicability the columns labelled B, F, T, P indicate the Basic, Full Frontal, Token Frontal and Post-Processed image types.

Table A.1 — Normative requirements

Requirement ID	Ref. in main body	Requirement Summary	Level	Status	Subformat Applicability				IUT Support	Supported Range	Test Result
					B	F	T	P			
R-1	5.1	The ISO/IEC 19794-5 BDIR format specified in this part of ISO/IEC 19794 is a format to store face representations within a biometric data record.	3C	O-1	Y	Y	Y	Y			
R-2	5.1	Each BDIR shall pertain to a single subject	3C	O-1	Y	Y	Y	Y			
R-3	5.1	Each BDIR shall contain at least one or more 2D image and zero or more geometric representations (range images, 3D point maps, 3D vertex representations) of a human face.	3C	M	Y	Y	Y	Y			
R-4	5.1	2D image data will be encoded using JPEG, JPEG2000 or PNG.	3C	O-1	Y	Y	Y	Y			
R-5	5.1	With the exception of the Format Identifier and the Version Number for the standard, which are null-terminated ASCII character strings, all data is represented in binary format.	3C	O-1	Y	Y	Y	Y			
R-6	5.1	There are no record separators or field tags; fields are parsed by byte count.	3C	O-1	Y	Y	Y	Y			

Requirement ID	Ref. in main body	Requirement Summary	Level	Status	Subformat Applicability				IUT Support	Supported Range	Test Result
					B	F	T	P			
R-7	5.1	The organization of the record format is as follows: - A fixed-length (17 byte) **General Header** containing information about the overall record, including the number of facial images represented and the overall record length in bytes. - A Representation block for each facial representation. This data consists of a Representation Header and the Representation Data. - The Representation Header consists of • A fixed length (19 bytes) common elements defined in ISO/IEC 19794-1:2011 • Multiple (including none) fixed length (5 byte) **Quality** blocks describing the quality of the representation. • A fixed length (17 byte) **Facial Information** block describing discernable characteristics of the subject such as gender. • Multiple (including none) fixed length (8 byte) **Landmark Point** blocks describing Landmark Points in a facial image. • A fixed length (11 byte) **Image Information** block describing digital properties of the image such as Face Image Type and dimensions such as width and height. - The Representation Data consists of • **Image data** consisting of a JPEG, JPEG2000 or PNG encoded data block. • For Face Image Types containing 3D information a **3D Information** block (95 byte) describing properties of this data. • For Face Image Types containing 3D information the **3D Data** block describing the 3D shape of the face.	3C	O-1	Y	Y	Y	Y			
R-8	5.1	Multiple 2D / 3D representations of the same biometric data subject can be described in a single record. This is accomplished by including multiple representation blocks after the General Header block.	3C	O-1	Y	Y	Y	Y			
R-9	5.1	Representation blocks containing 2D data can be stored together with Representation blocks also containing 3D data.	3C	O-1	Y	Y	Y	Y			
R-10	5.2.1	Within the record format and all well-defined data blocks therein, all multi-byte quantities are stored in Big-Endian format.	1	M	Y	Y	Y	Y			
R-11	5.2.2	All numeric values are fixed-length unsigned integer quantities, unless otherwise specified.	3C	O-1	Y	Y	Y	Y			
R-12	5.2.3	The conversion of a numeric value to integer is given by rounding down if the fractional portion is less than 0,5 and rounding up if the fractional value is greater than or equal to 0,5.	3C	O-1	Y	Y	Y	Y			

Requirement ID	Ref. in main body	Requirement Summary	Level	Status	Subformat Applicability				IUT Support	Supported Range	Test Result
					B	F	T	P			
R-13	5.2.4	the following fields are mandatory, but the value of the field can indicate that the field is unspecified: Capture Device Technology Identifier, Capture Device Vendor Identifier, Capture Device Type Identifier, Gender, Eye Colour, Hair Colour, Subject Height, Property, Expression, Pose Angle, Pose Angle Uncertainty, Image Colour Space, 3D Capture Device Technology Identifier, 3D Capture Device Vendor Identifier, 3D Capture Device Type Identifier, 3D to 2D Image Temporal Synchronicity, 3D to 2D Texture Temporal Synchronicity, 3D Acquisition Time, 2D Texture Acquisition Time, Texture Map Type, and Texture Map Spectrum.	3C	O-1	Y	Y	Y	Y			
R-14	5.2.5	A field value labelled by the identifier “Unknown” shall be used to denote that the information encoded by the field cannot be determined by examination of the face image.	3C	O-1	Y	Y	Y	Y			
R-15	5.3.1	The General Header block consists of seven fields: Format Identifier, Version Number, Length of Record, Number of Representations, Capture Device Vendor Identifier, Capture Device Type Identifier and the Temporal Semantics field as shown in Table 2.	3C	O-1	Y	Y	Y	Y			
R-16	5.3.2	The format identifier shall be recorded in four bytes.	1	M	Y	Y	Y	Y			
R-17	5.3.2	The format identifier shall consist of three characters "FAC" followed by a zero byte as a NULL string terminator.	1	M	Y	Y	Y	Y			
R-18	5.3.3	The number for the version of ISO/IEC 19794-5 used for constructing the BDIR shall be placed in four bytes.	1	M	Y	Y	Y	Y			
R-19	5.3.3	This version number shall consist of three ASCII numerals followed by a zero byte as a NULL string terminator. The first and second character will represent the major version number and the third character will represent the minor revision number. The Version Number of ISO/IEC 19794-5:2010 shall be 30333000_{HEX}; “030” – Version 3 revision 0.	1	M	Y	Y	Y	Y			
R-20	5.3.4	The length (in bytes) of the entire BDIR shall be recorded in four bytes.	1	M	Y	Y	Y	Y			
R-21	5.3.4	This count shall be the total length of the BDIR including the general record header and one or more representation records.	2	M	Y	Y	Y	Y			
R-22	5.3.5	The total number of representation records contained in the BDIR shall be recorded in two bytes.	1, 2	M	Y	Y	Y	Y			
R-23	5.3.5	A minimum of one representation is required.	1	M	Y	Y	Y	Y			

Requirement ID	Ref. in main body	Requirement Summary	Level	Status	Subformat Applicability				IUT Support	Supported Range	Test Result
					B	F	T	P			
R-24	5.3.6	**Certification Flag** The value shall be 00_{HEX}.	1	M	Y	Y	Y	Y			
R-25	5.3.7	**Temporal Semantics** This two byte (2 byte) field shall be assigned according to Table 3.	1	M	Y	Y	Y	Y			
R-26	5.3.7	This supports storage of multiple representations: from a single session (e.g. from a photo shoot); from distinct sessions (e.g. from cash dispenser transactions); and from a temporal sequence (e.g. a video sequence of equally time-spaced representations).	3C	O-1	Y	Y	Y	Y			
R-27	5.4.1	**The Representation Header Structure** The Representation Header is intended to describe discrete properties of the individual discernable from the image, one is included for each facial representation included in the record.	3C	O-1	Y	Y	Y	Y			
R-28	5.4.1	The Representation Header consists of the Representation Length, the Capture Date and Time, the Capture Device Technology Identifier, the Capture Device Vendor Identifier. These are followed by the Number of Quality Blocks field and the related number of Quality blocks. Finally the Representation Header contains the Facial Information block, the optional multiple Landmark Point blocks, and the Image Information block.	3C	O-1	Y	Y	Y	Y			
R-29	5.4.2	**Representation Length** The (4 byte) Representation Length field denotes the length in bytes of the representation including the representation header fields.	1, 2	M	Y	Y	Y	Y			
R-30	5.4.2	The minimum value of the Representation Length is 51 bytes, consisting of a minimum 47 bytes for the Representation Header plus the size of the Representation Data, i.e. minimum 4 bytes for the Length of Image Data Block field assuming 0 bytes for the variable data.	1	M	Y	Y	Y	Y			
R-31	5.4.3	**Capture Date and Time** The capture date and time field shall indicate when the capture of this representation started in Coordinated Universal Time (UTC).	3C	O-1	Y	Y	Y	Y			
R-32	5.4.3	The capture date and time field shall consist of 9 bytes.	1	M	Y	Y	Y	Y			
R-33	5.4.3	Its value shall be encoded in the form given in ISO/IEC 19794-1.	1	M	Y	Y	Y	Y			
R-34	5.4.4	**Capture Device Technology Identifier** Capture device technology Identifier shall be encoded in one byte.	1	M	Y	Y	Y	Y			

<table>
<tr><th rowspan="2">Requirement ID</th><th rowspan="2">Ref. in main body</th><th rowspan="2">Requirement Summary</th><th rowspan="2">Level</th><th rowspan="2">Status</th><th colspan="4">Subformat Applicability</th><th rowspan="2">IUT Support</th><th rowspan="2">Supported Range</th><th rowspan="2">Test Result</th></tr>
<tr><th>B</th><th>F</th><th>T</th><th>P</th></tr>
<tr><td>R-35</td><td>5.4.4</td><td>This field shall indicate the class of device technology used to acquire the captured biometric sample.</td><td>3C</td><td>O-1</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-36</td><td>5.4.4</td><td>Many different types of capture devices work in the visible spectrum or in near infra-red (NIR). To indicate that the capture device operates in NIR the highest bit in the Capture Device Technology Identifier field shall be set to 1.</td><td>3C</td><td>O-1</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-37</td><td>5.4.4</td><td>See Table 4 for the enumerated list of possible values.
Table 4 — Capture Device Technology Identifier codes
<table>
<tr><th>Description</th><th>Value</th></tr>
<tr><td>Unknown or Unspecified</td><td>00_{HEX}</td></tr>
<tr><td>Static photograph from an unknown source</td><td>01_{HEX}</td></tr>
<tr><td>Static photograph from a digital still-image camera</td><td>02_{HEX}</td></tr>
<tr><td>Static photograph from a scanner</td><td>03_{HEX}</td></tr>
<tr><td>Video frame(s) from an unknown source</td><td>04_{HEX}</td></tr>
<tr><td>Video frame(s) from an analogue video camera</td><td>05_{HEX}</td></tr>
<tr><td>Video frame(s) from a digital video camera</td><td>06_{HEX}</td></tr>
<tr><td>Reserved by SC37 for future use</td><td>07_{HEX} to $7F_{HEX}$</td></tr>
<tr><td>Vendor specific</td><td>80_{HEX} to FF_{HEX}</td></tr>
</table></td><td>1</td><td>M</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-38</td><td>5.4.5</td><td>Capture Device Vendor Identifier
The (2 byte) Capture Device Vendor Identifier shall identify the biometric organisation that owns the product that created the BDIR.</td><td>1</td><td>M</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-39</td><td>5.4.5</td><td>The capture device algorithm vendor identifier shall be encoded in two bytes carrying a CBEFF biometric organization identifier (registered by IBIA or other approved registration authority).</td><td>3C</td><td>O-1</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-40</td><td>5.4.5</td><td>A value of all zeros shall indicate that the capture device vendor is unreported.</td><td>1</td><td>M</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
<tr><td>R-41</td><td>5.4.6</td><td>Capture Device Type Identifier
The (2 byte) Capture Device Type Identifier shall identify the product type that created the BDIR.</td><td>1</td><td>M</td><td>Y</td><td>Y</td><td>Y</td><td>Y</td><td></td><td></td><td></td></tr>
</table>

Requirement ID	Ref. in main body	Requirement Summary	Level	Status	Subformat Applicability				IUT Support	Supported Range	Test Result
					B	F	T	P			
R-42	5.4.6	It shall be assigned by the registered product owner or other approved registration authority.	3C	M	Y	Y	Y	Y			
R-43	5.4.6	A value of all zeros shall indicate that the capture device type is unreported.	1	M	Y	Y	Y	Y			
R-44	5.4.6	If the capture device vendor identifier is 0000_{HEX}, then also the capture device type identifier shall be 0000_{HEX}	2	M	Y	Y	Y	Y			
R-45	5.4.7	**Number of Quality Blocks** This field is followed by the number of 5 byte Quality blocks reflected by its value.	2	M	Y	Y	Y	Y			
R-46	5.4.7	A value of zero (0) means that no attempt was made to assign a quality score. In this case, no Quality blocks are present.	2	M	Y	Y	Y	Y			
R-47	5.4.8	**Quality Score** The (1 byte) Quality Score, as defined in ISO/IEC 29794-1, shall be a quantitative expression of the predicted verification performance of the biometric sample.	1, 3C	M	Y	Y	Y	Y			
R-48	5.4.8	Valid values for Quality Score are integers between 0 and 100, where higher values indicate better quality.	1	M	Y	Y	Y	Y			
R-49	5.4.8	A value of 255 is to handle a special case.	1	M	Y	Y	Y	Y			
R-50	5.4.8	An entry of 255 shall indicate a failed attempt to calculate a quality score.	3C	O-1	Y	Y	Y	Y			
R-51	5.4.9	**Quality Algorithm Vendor Identifier** To enable the recipient of the quality score to differentiate between quality scores generated by different algorithms, the provider of quality scores shall be uniquely identified by this two-byte field.	1	M	Y	Y	Y	Y			
R-52	5.4.9	This is registered with the IBIA or other approved registration authority.	3C	O-1	Y	Y	Y	Y			
R-53	5.4.10	**Quality Algorithm Identifier** The (2 byte) Quality Algorithm Identifier specifies an integer product code assigned by the vendor of the quality algorithm.	1	M	Y	Y	Y	Y			
R-54	5.4.10	It indicates which of the vendor's algorithms (and version) was used in the calculation of the quality score and should be within the range 1 to 65 535.	1	M	Y	Y	Y	Y			