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Information technology — Common Biometric Exchange Formats Framework —

Part 1:
Data element specification

AMENDMENT 1: Support for additional data elements

Technologies de l'information — Cadre de formats d'échange biométriques communs —

Partie 1: Spécifications de données d'élément

AMENDEMENT 1: Support pour éléments de données additionnels

Foreword

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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.

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Amendment 1 to ISO/IEC 19785-1:2006 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

Information technology — Common Biometric Exchange Formats Framework —

Part 1:
Data element specification

AMENDMENT 1: Support for additional data elements

Page vi, Introduction, tenth paragraph (regarding CBEFF biometric product owner)

Replace the entire paragraph with the following:

CBEFF also defines the concepts of CBEFF biometric product owner, capture device owner, feature extraction algorithm owner, comparison algorithm owner, quality algorithm owner, and compression algorithm owner. A CBEFF biometric product owner is an organization (registered as a CBEFF biometric organization) that assigns a biometric product identifier to a biometric product. Likewise, a CBEFF capture device owner, feature extraction algorithm owner, comparison algorithm owner, quality algorithm owner, or compression algorithm owner is an organization (registered as a CBEFF biometric organization) that assigns a capture device identifier, feature extraction algorithm identifier, comparison algorithm identifier, quality algorithm identifier, or compression algorithm identifier to a capture device, feature extraction algorithm, comparison algorithm, quality algorithm, or compression algorithm, respectively. A biometric product owner can be a public standards organization such as a standards body, working group, or industry consortium (such an organization would, coincidentally, also qualify as a CBEFF patron), or any organization, such as a vendor or integrator, that has a need to assign biometric product identifiers to biometric products. Likewise, a capture device owner, feature extraction algorithm owner, comparison algorithm owner, quality algorithm owner, or compression algorithm owner can be any organization that has a need to assign identifiers to entities of the corresponding category. A given organization can be the owner of one or more entities in one or more of these categories (also including BDB formats and SB formats as additional categories), with no restrictions on the number of entities owned by the organization or on which categories those entities may belong to.

Page vi, Introduction, after the eleventh paragraph (which begins "A CBEFF biometric product owner assigns… ")

Insert the following new paragraph:

A CBEFF capture device owner, feature extraction algorithm owner, comparison algorithm owner, quality algorithm owner, or compression algorithm owner assigns *capture device identifiers (or feature extraction algorithm identifiers, etc.)* to one or more capture devices (or feature extraction algorithms, etc.), respectively. A capture device identifier (or feature extraction algorithm identifier, etc.) unambiguously identifies a capture device (or feature extraction algorithm, etc.) within those that have been assigned an identifier by the owner. A capture device identifier (or feature extraction algorithm identifier, etc.) is required to be registered with the Biometric Registration Authority.

Page 1, 1.9

Replace "… and biometric products." with the following:

biometric products, capture devices, feature extraction algorithms, comparison algorithms, quality algorithms, and compression algorithms.

Page 3, 4.6

Replace the definition and note with the following:

block of data conforming to a defined format

NOTE   The BDB is normally opaque to the processing of an SBH and is not required to be self-delimiting.

Page 4, 4.14

Replace the note with the following (where new text is highlighted with a grey background).

NOTE   A CBEFF biometric organization can define BDB formats, assign BDB format identifiers to them, assign biometric product identifiers to biometric products, assign capture device identifiers to capture devices, assign feature extraction algorithm identifiers to feature extraction algorithms, assign comparison algorithm identifiers to comparison algorithms, assign quality algorithm identifiers to quality algorithms, assign compression algorithm identifiers to compression algorithms, and define SB formats and assign SB format identifiers to them. If the organization is also accepted as a CBEFF patron, it can also define CBEFF patron formats.

Page 6, after 4.34

Insert the following new terms and definitions:

4.35
capture device
hardware product or combination of software and hardware which is assigned a capture device identifier by a CBEFF biometric organization

4.36
capture device identifier
identifier assigned to a capture device by a capture device owner that unambiguously (given the capture device owner) identifies the capture device

4.37
capture device owner
CBEFF biometric organization that assigns capture device identifiers to capture devices

NOTE   The organization may or may not be the manufacturer of the capture devices.

4.38
comparison algorithm
algorithm which is assigned a comparison algorithm identifier by a CBEFF biometric organization

4.39
comparison algorithm identifier
identifier assigned to a comparison algorithm that unambiguously (given the comparison algorithm owner) identifies the algorithm

4.40
comparison algorithm owner
CBEFF biometric organization that assigns comparison algorithm identifiers to comparison algorithms

NOTE   The organization may or may not be the intellectual property owner of the comparison algorithms.

4.41
compression algorithm
algorithm which is assigned a compression algorithm identifier by a CBEFF biometric organization

4.42
compression algorithm identifier
identifier assigned to a compression algorithm that unambiguously (given the compression algorithm owner) identifies the algorithm

4.43
compression algorithm owner
CBEFF biometric organization that assigns compression algorithm identifiers to compression algorithms

NOTE   The organization may or may not be the intellectual property owner of the compression algorithms.

4.44
feature extraction algorithm
algorithm which is assigned a feature extraction algorithm identifier by a CBEFF biometric organization

4.45
feature extraction algorithm identifier
identifier assigned to a feature extraction algorithm that unambiguously (given the feature extraction algorithm owner) identifies the algorithm

4.46
feature extraction algorithm owner
CBEFF biometric organization that assigns feature extraction algorithm identifiers to feature extraction algorithms

NOTE   The organization may or may not be the intellectual property owner of the feature extraction algorithms.

4.47
quality algorithm
algorithm which is assigned a quality algorithm identifier by a CBEFF biometric organization

4.48
quality algorithm identifier
identifier assigned to a quality algorithm that unambiguously (given the quality algorithm owner) identifies the algorithm

4.49
quality algorithm owner
CBEFF biometric organization that assigns quality algorithm identifiers to quality algorithms

NOTE   The organization may or may not be the intellectual property owner of the quality algorithms.

Page 7, after 6.1.6

Add the following new subclause, renumbering subsequent subclauses as appropriate:

6.1.7   Another goal of CBEFF is to enable the unique identification of the capture device, feature extraction algorithm, comparison algorithm, quality algorithm, and compression algorithm that were used to produce a BDB (possibly at different stages of its lifecycle). The combination of capture device owner and capture device identifier (or feature extraction algorithm owner and feature extraction algorithm identifier, etc.) meets this objective. A CBEFF biometric organization can assign a capture device identifier to a capture device. The capture device may (but need not) be produced or specified by that organization. A capture device identifier shall be an integer within the range 1 to 65535 and shall be unambiguous within the capture devices that have been assigned an identifier by that CBEFF biometric organization. The biometric organization is called the capture device owner of that capture device. The capture device is thus identified by the pair "capture device owner and capture device identifier". The capture device owner shall register the capture device identifier in accordance with ISO/IEC 19785-2. Referencing an unregistered capture device identifier is not permitted. The provisions in this subclause also apply to feature extraction algorithms, comparison algorithms, quality algorithms, and compression algorithms, and to their respective owners and identifiers, by replacement of the term "capture device" with "feature extraction algorithm", etc., wherever it occurs in this subclause.

Page 14, Table 1

Replace the table with the following:

Named abstract value	Typically has an associated subtype? (see 6.5.7)
NO VALUE AVAILABLE	No
MULTIPLE BIOMETRIC TYPES	No
DNA	No
EAR	Yes
FACE	No
FINGER	Yes
FOOT	Yes
GAIT	No
HAND-GEOMETRY	Yes
IRIS	Yes
KEYSTROKE	No
LIP MOVEMENT	No
RETINA	Yes
SCENT	No
SIGNATURE-SIGN	No
VEIN	Yes
VOICE	No

Page 15, 6.5.7.1, immediately after the paragraph labelled "Content"

Insert the following new paragraph:

Combinations of abstract values are permitted when the abstract value encoded in CBEFF_BDB_biometric_type represents a biometric technology that can create a BDB where multiple subtypes are supported, except that NO VALUE AVAILABLE shall not be used in combination with any other abstract value, and that RIGHT and LEFT may be used in combination with each other but shall not be used in combination with any other abstract value (note that LEFT THUMB is a single abstract value, it is not a combination of LEFT and THUMB).

Page 15, 6.5.7.1

Change "EXAMPLE" to "EXAMPLE 1" and immediately before Table 2 insert the following new example:

EXAMPLE 2   If a hypothetical iris biometric device can produce a single BDB that contains data for both of a subject's eyes, then the abstract values LEFT and RIGHT would be used in combination to describe that BDB.

Page 15, Table 2

Replace the table with the following:

Abstract values	Combination permitted with...
NO VALUE AVAILABLE	Combination not permitted
RIGHT	LEFT
LEFT	RIGHT
LEFT THUMB	Any except LEFT or RIGHT
LEFT POINTER FINGER	ditto
LEFT MIDDLE FINGER	ditto
LEFT RING FINGER	ditto
LEFT LITTLE FINGER	ditto
RIGHT THUMB	ditto
RIGHT POINTER FINGER	ditto
RIGHT MIDDLE FINGER	ditto
RIGHT RING FINGER	ditto
RIGHT LITTLE FINGER	ditto
LEFT PALM	ditto
LEFT BACK OF HAND	ditto
LEFT WRIST	ditto
RIGHT PALM	ditto
RIGHT BACK OF HAND	ditto
RIGHT WRIST	ditto
NOTE A BDB format specification determines which (if any) of these qualifiers apply to that BDB format.	

Page 25, after 6.5.27.2

Add the following new subclauses:

6.5.28 CBEFF_BDB_capture_device_owner

6.5.28.1   Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_capture_device_type is also included (see 6.5.29).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the registered biometric organization that owns the capture device that was used in the creation of the BDB (if any). The content of CBEFF_BDB_capture_device_owner shall be a biometric organization identifier (a 16 bit positive integer, assigned by the Biometric Registration Authority).

NOTE   CBEFF has required the Biometric Registration Authority to not assign the value zero (Hex 0000) to any biometric organization. Patron format specifications may find it useful to use this value as the encoding for NO VALUE AVAILABLE.

6.5.28.2   Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.

6.5.29 CBEFF_BDB_capture_device_type

6.5.29.1   Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_capture_device_owner is also included (see 6.5.28).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the capture device that was used in the creation of the BDB (if any). The capture device identifier is a 16 bit positive integer assigned by the registered biometric organization that created or owns the capture device and is identified by the CBEFF_BDB_capture_device_owner data element.

6.5.29.2   Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.

6.5.30 CBEFF_BDB_feature_extraction_algorithm_owner

6.5.30.1 Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_feature_extraction_algorithm_type is also included (see 6.5.31).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the registered biometric organization that owns the feature extraction algorithm that was used in the creation of the BDB (if any). The content of CBEFF_BDB_feature_extraction_algorithm_owner shall be a biometric organization identifier (a 16 bit positive integer, assigned by the Biometric Registration Authority).

NOTE CBEFF has required the Biometric Registration Authority to not assign the value zero (Hex 0000) to any biometric organization. Patron format specifications may find it useful to use this value as the encoding for NO VALUE AVAILABLE.

6.5.30.2 Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.

6.5.31 CBEFF_BDB_feature_extraction_algorithm_type

6.5.31.1 Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_feature_extraction_algorithm_owner is also included (see 6.5.30).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the feature extraction algorithm that was used in the creation of the BDB (if any). The feature extraction algorithm identifier is a 16 bit positive integer assigned by the registered biometric organization that created or owns the feature extraction algorithm and is identified by the CBEFF_BDB_feature_extraction_algorithm_owner data element.

6.5.31.2 Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.

6.5.32 CBEFF_BDB_comparison_algorithm_owner

6.5.32.1 Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_comparison_algorithm_type is also included (see 6.5.33).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the registered biometric organization that owns the comparison algorithm that was used in the creation of the BDB (if any). The content of CBEFF_BDB_comparison_algorithm_owner shall be a biometric organization identifier (a 16 bit positive integer, assigned by the Biometric Registration Authority).

NOTE   CBEFF has required the Biometric Registration Authority to not assign the value zero (Hex 0000) to any biometric organization. Patron format specifications may find it useful to use this value as the encoding for NO VALUE AVAILABLE.

6.5.32.2 Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.

6.5.33 CBEFF_BDB_comparison_algorithm_type

6.5.33.1 Attributes

Inclusion:

Optional – this data element shall not be included in a patron format unless CBEFF_BDB_comparison_algorithm_owner is also included (see 6.5.32).

Abstract values:

NO VALUE AVAILABLE

integers 1 through 65,535

Content: This data element identifies the comparison algorithm that was used in the creation of the BDB (if any). The comparison algorithm identifier is a 16 bit positive integer assigned by the registered biometric organization that created or owns the comparison algorithm and is identified by the CBEFF_BDB_comparison_algorithm_owner data element.

6.5.33.2 Transformation requirements

When transforming a CBEFF BIR from an initial patron format to a target patron format, the encoding of this data element in the target BIR shall comply with the patron format requirements placed on the target BIR; this may be NO VALUE AVAILABLE.