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Information technology — Common Biometric Exchange Formats Framework —

Part 3: Patron format specifications

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

Partie 3: Spécifications de format d'usager

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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.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

This third edition cancels and replaces the second edition (ISO/IEC 19785-3:2015), which has been technically revised.

The main changes compared to the previous edition are as follows:

— Vocabulary and technical updates and corrections.

— Specification of new CBEFF patron formats for BioAPI 2.0, Presentation Attack Detection (PAD), new TLV-encoded patron format for ICCs or other tokens (with explicit tag allocation authority), and Self-identifying Tag-oriented simple and complex BIRs.

— Inclusion of conformance requirements in Annex B and coding specifications for tagged patron formats, such as TLV, XML, and JSON in Annex C.

— Some technical comments and clarifications on the Clause 11 patron format are introduced within Annex D (however, for legacy reasons, the technical content of the TLV-encoded patron format for use with smartcards or other tokens [with implicit tag allocation authority] in Clause 11, is presented as it was originally published in ISO/IEC 19785-3:2007).

— The permitted values for CBEFF_BDB_biometric_type and CBEFF_BDB_biometric_subtype have been harmonized across all patron formats (except for Clause 11, which is preserved for legacy reasons), using the common CBEFF-DATA-ELEMENTS definitions in 6.2.

— The CBEFF_version for the patron formats has been increased to (major 4, minor 0) to support newly defined CBEFF_BDB_biometric_type values from ISO/IEC 19785-1 (including Body Photography, Friction Ridge, and Thermal).

A list of all parts in the ISO/IEC 19785 series can be found on the ISO website.

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Introduction

Biometric-based authentication systems and applications are expected to support multiple biometric devices and multiple biometric data formats. The Common Biometric Exchange Formats Framework (CBEFF) promotes interoperability of biometric-based application programmes and systems developed by different vendors by facilitating biometric data interchange.

ISO/IEC 19785-1 defines the following items that enable standardized biometric data interchange:

a) a 3-part standardized structure for biometric information records (BIRs) consisting of:

   1) standardized biometric headers (SBHs),

   2) biometric data blocks (BDBs, which may be standardized or proprietary), and

   3) optional security blocks (SBs);

b) variations of the 3-part structure to support BIRs containing:

   1) only one SBH, at least one or more BDBs and possibly one SB (simple CBEFF BIRs),

   2) only one self-identifying SBH, at least one or more BDB and possibly one SB (self-identifying simple CBEFF BIRs), and

   3) more than one BDB along with some number of SBHs necessary to encode the BIR's structure and some number of SBs (complex CBEFF BIRs, multiple CBEFF BIRs).

c) a self-identifying concept, which may be applied to any variation of the 3-part structure for BIRs, using the 'SBIR' field as defined in ISO/IEC 19785-1;

d) more than 40 data elements and their associated abstract values that can be used in an SBH to describe attributes of a BDB within a BIR, as well as attributes of the BIR itself;

e) the concept of a CBEFF patron format (but ISO/IEC 19785-1 does not itself define any patron formats), which is a detailed specification of the structure and content of a particular, standardized BIR;

f) the concept of a CBEFF patron, which is a recognized standards organization that has registered with the Biometric Registration Authority (BRA) and declared its intention to define CBEFF patron format specifications;

g) the concept of the BRA, which is the mechanism by which unique identifiers are assigned to organizations (standards organizations, vendors and others) that create BDB formats and CBEFF patron formats (ISO/IEC 19785-2 defines the identification scheme for biometric objects and organizations registered by the BRA);

h) CBEFF data elements [see c) above] that support, within the SBH, the unique identifiers assigned by the BRA for biometric organizations, BDB formats, biometric products, capture devices, feature extraction algorithms, comparison algorithms, quality algorithms, compression algorithms, PAD mechanisms, patron formats (self-identifying or not), and SB formats.

Patron formats can be specified in other standards documents and registered with the BRA (see ISO/IEC 19785-2). For example, there is a registered patron format specified in ISO/IEC 19785-1. For a complete list of registered patron formats, consult the CBEFF Biometric Registration Authority website.

This document specifies a number of CBEFF patron formats that are considered to be of general utility in a variety of domains of use. Additional ISO/IEC JTC 1/SC 37 patron format specifications may be published as new clauses in future amendments to this document, or in other ISO/IEC JTC 1/SC 37 International Standards.

The CBEFF patron format type unambiguously identifies the CBEFF patron format within the scope of the CBEFF patron format owner. The CBEFF patron format type is unambiguous within the scope of an ASN.1 Object Identifier (see ISO/IEC 9834-1) that identifies the BRA (see ISO/IEC 19785-2). That ASN.1

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Object Identifier (OID) is itself globally unambiguous within the scope of all ASN.1 OIDs, which forms a widely used global namespace.

NOTE ASN.1 OIDs are used by ITU-T, ITU-R, the UPU and many ISO and IEC Standards, to identify some IETF MIME types and for many other purposes. (These acronyms have not been spelled out, as the precise identification of these organizations is not relevant to this document.)

The combination of the BRA OID, the CBEFF patron format owner, and the CBEFF patron format type forms a larger ASN.1 OID that provides an unambiguous identification of the CBEFF patron format. This document specifies, for each CBEFF patron format that it defines, the ASN.1 OID that unambiguously identifies that CBEFF patron format.

New implementations should make use of the tag-oriented CBEFF version 4.0 patron formats, i.e. Clauses 16 and onwards.

It is also important to note that, for legacy reasons, the technical content of patron format type 5, TLV-encoded patron format for use with smartcards or other tokens (with implicit tag allocation authority) in Clause 11, is presented as it was originally published in ISO/IEC 19785-3:2007 (with minor editorial updates and technical comments introduced in Annex D). New implementations should use the explicit tag allocation authority alternative provided by the patron format included in Clause 19.

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Information technology — Common Biometric Exchange Formats Framework —

Part 3:
Patron format specifications

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1 Scope

This document specifies and publishes registered Common Biometric Exchange Formats Framework (CBEFF) patron formats defined by the CBEFF patron ISO/IEC JTC 1/SC 37, and specifies their registered CBEFF patron format types (see ISO/IEC 19785-1) and resulting full ASN.1 OIDs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 2382-37, *Information technology — Vocabulary — Part 37: Biometrics*

ISO/IEC 7816-11, *Identification cards — Integrated circuit cards — Part 11: Personal verification through biometric methods*

ISO 8601 (all parts), *Data and time — Representations for information interchange*

ISO/IEC 8825-1, *Information technology — ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER) — Part 1:*

ISO/IEC 8825-4, *Information technology — ASN.1 encoding rules: XML Encoding Rules (XER) — Part 4:*

ISO/IEC 10646, *Information technology — Universal coded character set (UCS)*

ISO/IEC 19785-1, *Information technology — Common Biometric Exchange Formats Framework — Part 1: Data element specification*

ISO/IEC 19785-2, *Information technology — Common Biometric Exchange Formats Framework — Part 2: Biometric registration authority*

ISO/IEC 24787, *Information technology — Identification cards — On-card biometric comparison*

ISO/IEC 30107-2, *Information technology — Biometric presentation attack detection — Part 2: Data formats*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 2382-37 and ISO/IEC 19785-1 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

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