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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'utilisateur*

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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.

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](http://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](http://www.iso.org/patents)).

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

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: [Foreword - Supplementary information](#)

The committee responsible for this document is ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

This second edition cancels and replaces the first edition (ISO/IEC 19785-3:2007), Clauses 13 and 15 of which have been merged into [Clause 13](#) (XML patron format). Minor updates have been made throughout the document to reflect vocabulary harmonization and updated committee procedures.

It also incorporates the Amendment ISO/IEC 19785-3:2007/Amd 1:2010.

ISO/IEC 19785 consists of the following parts, under the general title *Information technology — Common Biometric Exchange Formats Framework*:

- *Part 1: Data element specifications*
- *Part 2: Procedures for the operation of the Biometric Registration Authority*
- *Part 3: Patron format specifications*
- *Part 4: Security block format specifications*

## 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 programs and systems developed by different vendors by facilitating biometric data interchange.

ISO/IEC 19785-1:2006 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 can be standardized or proprietary);
  - 3) optional security blocks (SBs);
- b) variations of the 3-part structure to support BIRs containing:
  - 1) only one SBH, one BDB, and possibly one SB (simple BIRs);
  - 2) more than one BDB along with the SBHs necessary to encode the BIR's structure and some number of SBs (complex BIRs);
- c) more than 20 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;
- d) the concept of a CBEFF patron format (but ISO/IEC 19785-1:2006 does not itself define any patron formats), which is a detailed specification of the structure and content of a particular, standardized BIR;
- e) the concept of a CBEFF patron, which is a recognized standards organization that has registered with the Biometric Registration Authority and declared its intention to define CBEFF patron format specifications;
- f) the concept of the Biometric Registration Authority (RA), 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 19785-2:2006 defines the responsibilities and operations of the Biometric RA);
- g) CBEFF data elements [see c) above] that support, within the SBH, the unique identifiers assigned by the Biometric RA for biometric organizations, BDB formats, biometric products, capture devices, feature extraction algorithms, comparison algorithms, quality algorithms, compression algorithms, patron formats, and SB formats.

Patron formats can be specified in other standards documents and registered in the CBEFF Registration Authority (see ISO/IEC 19785-2:2006), for example, there is a registered patron format specified in ISO/IEC 9834-1:2006. For a complete list of registered patron formats, consult the CBEFF Registration Authority web site.

This part of ISO/IEC 19785 specifies a number of CBEFF patron formats that are considered to be of general utility in a variety of domains of use. Additional SC 37 patron format specifications can be published as new clauses in future amendments to this part of ISO/IEC 19785, or in other 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 Biometric Registration Authority (see



ISO/IEC 19785-2:2006). That ASN.1 Object Identifier (OID) is itself globally unambiguous within the scope of all ASN.1 Object Identifiers, which forms a widely-used global name-space.

**NOTE** ASN.1 Object Identifiers are used by ITU-T, ITU-R, the UPU, 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 International Standard.)

The combination of the Biometric Registration Authority 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 part of ISO/IEC 19785 specifies, for each CBEFF patron format that it defines, the ASN.1 OID that unambiguously identifies that CBEFF patron format.

# Information technology — Common Biometric Exchange Formats Framework —

## Part 3: Patron format specifications

### 1 Scope

This part of ISO/IEC 19785 specifies and publishes registered CBEFF patron formats (see ISO/IEC 19785-1) defined by the CBEFF patron ISO/IEC JTC 1/SC 37, and specifies their registered CBEFF patron format types (see ISO/IEC 19785-2) and resulting full ASN.1 Object Identifiers.

### 2 Conformance

[Clauses 6](#) onwards of this part of ISO/IEC 19785 specify at the bit-level the set of bit-patterns (and their semantics) that can form a valid instance of the CBEFF patron format that is defined in that clause, together with the ASN.1 Object Identifier for that set of bit-patterns.

A bit-pattern identified by one of the ASN.1 Object Identifiers allocated in this part of ISO/IEC 19785 conforms to this specification if and only if it is one of the bit-patterns in the set identified by that ASN.1 Object Identifier.

If an implementation claims that it supports (and conforms to) a CBEFF patron format defined in this part of ISO/IEC 19785, then it shall either be:

- a) capable of generating at least one of the set of bit patterns specified for that CBEFF patron format, and shall never generate bit patterns that are not part of the set, or
- b) capable of decoding (determining the semantics of), or in any other way processing all the bit-patterns in the set of bit patterns specified for that CBEFF patron format.

**NOTE** If a decoding implementation is presented with a bit pattern that purports to be part of the set, but it is not, there is no requirement placed on the action taken by the implementation, but it is normally expected that the implementation will guard against denial of service or other security threats in such circumstances.

### 3 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 7816-4, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

ISO/IEC 7816-6, *Identification cards — Integrated circuit cards — Part 6: Interindustry data elements for interchange*

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

ISO 8601, *Data elements and interchange formats — Information interchange — Representation of dates and times*

ISO/IEC 8824-1, *Information technology — Abstract Syntax Notation One (ASN.1): Specification of basic notation — Part 1*

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 8825-4:2008, *Information technology — ASN.1 encoding rules: XML Encoding Rules (XER) — Part 4*

ISO/IEC 10646, *Information technology — Universal Coded Character Set (UCS)*

ISO/IEC 19785-1:2006, *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: Procedures for the operation of the Biometric Registration Authority*

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