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Information technology — Common Biometric Exchange Formats Framework —

Part 2:
Procedures for the operation of the Biometric Registration Authority

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

Partie 2: Procédures pour le fonctionnement de l'autorité d'enregistrement biométrique

Please see the administrative notes on page iii

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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.

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.

ISO/IEC 19785-2 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 37, *Biometrics*.

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

— *Part 1: Data element specification*

— *Part 2: Procedures for the operation of the Biometric Registration Authority*

The following part is under preparation:

— *Part 3: Patron Format Specifications*

ISO/IEC 19785 is the first International Standard on CBEFF. Previous versions were published by the National Institute of Standards and Technology (an agency of the government of the United States of America) and the Biometric Consortium Working Group. Since the last official non-ISO release was designated Version 1.1, the first version of ISO/IEC 19785 is designated Version 2.0. This is to distinguish the versions of CBEFF products in the marketplace.

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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 programs and systems developed by different vendors by facilitating biometric data interchange. This part of ISO/IEC 19785 supports such exchanges by providing unambiguous identification of biometric organizations, formats and products.

This part of ISO/IEC 19785 specifies procedures for a Registration Authority that is responsible for the assignment of ASN.1 object identifier components to identify biometric organizations, CBEFF patrons, biometric information record formats, biometric data block formats, security block formats, and biometric products, to provide globally unambiguous identification in the context of the CBEFF ASN.1 object identifier.

The registration process is universal, assigns unique and unambiguous identifiers, and avoids changes in identifiers over time.

The publication of the registers promotes compatibility in interchange of biometric data and improves interoperability of biometric systems. Registration provides an identifier, but registration should not be regarded as a standardization procedure. Nevertheless, as a matter apart from registration, the registered object may, but need not, be the subject of an international, national, or other standard.

The same registry can be used to register the identification of products which produce or process biometric data – whether the biometric organization owning the product is the same as or different from the biometric organization which defined the format of that data.

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Information technology — Common Biometric Exchange Formats Framework —

Part 2: Procedures for the operation of the Biometric Registration Authority

1 Scope

This part of ISO/IEC 19785 specifies the procedures to be followed by the Biometric Registration Authority in preparing, maintaining, and publishing registers of identifiers for biometric organizations, CBEFF patron formats, BDB formats, security block formats, and biometric products.

2 Normative references

The following referenced documents are indispensable for the application 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 19784-1, *Information technology — Biometric application programming interface — Part 1: BioAPI specification* [1)]

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

ISO/IEC 19794 (all parts), *Information technology — Biometric data interchange formats*

3 Terms and definitions

3.1 Terms defined in ISO/IEC 19785-1

For the purposes of this document, the following terms defined in ISO/IEC 19785-1 apply:

BDB format identifier; biometric; biometrics; biometric data block; biometric information record; biometric product; biometric product identifier; biometric product owner; biometric sample; CBEFF biometric organization identifier; CBEFF patron; CBEFF patron format; security block format identifier.

1) To be published.

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3.2 Other terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.2.1
applicant
organization requesting registration as a CBEFF biometric organization, or a registered CBEFF biometric organization requesting registration of a CBEFF patron format, BDB format, SB format or biometric product

3.2.2
BDB format
format of a BDB defined by a CBEFF biometric organization

3.2.3
CBEFF patron format identifier
identifier for a CBEFF patron format that is unambiguous within the context of a CBEFF patron identifier

3.2.4
CBEFF patron identifier
CBEFF biometric organization identifier of a CBEFF patron

3.2.5
register
record of assigned identifiers for CBEFF biometric organizations, CBEFF patron formats, BDB formats, SB formats, or biometric products

3.2.6
registrar
person or organization appointed by a Registration Authority, responsible for preparing and maintaining the register(s)

3.2.7
registration authority
organization nominated and appointed by the ISO/IEC Council to prepare and maintain registers

3.2.8
relevant ISO/IEC subcommittee
ISO/IEC subcommittee responsible for the maintenance of this part of ISO/IEC 19785

3.2.9
security block format
format of a security block defined by a CBEFF biometric organization

4 Symbols and abbreviated terms

ASN.1	Abstract Syntax Notation One
BDB	biometric data block
BIR	biometric information record
CBEFF	common biometric exchange formats framework
RA	registration authority
SB	security block
URL	Uniform Resource Locator

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5 General

5.1 This part of ISO/IEC 19785 defines procedures for registration by which ASN.1 object identifier components are assigned to

a) organizations concerned with the specification of biometric formats or with biometric products that either directly, or through the data that they produce, claim conformance to or can be used in conjunction with ISO/IEC 19785, ISO/IEC 19784, or one of the parts of ISO/IEC 19794;

b) BIR formats specified by a CBEFF patron;

c) BDB formats specified by a registered biometric organization;

d) SB formats specified by a registered biometric organization; and

e) biometric products supported by an organization that is a registered biometric organization.

NOTE International Standards do not require the registration of BIR formats, BDB formats, SB formats, or biometric products, but registration is possible if a CBEFF patron or biometric organization considers that registration would be beneficial.

5.2 ASN.1 object identifiers are a form of worldwide unambiguous identification based on a hierarchical tree structure, and independent hierarchical registration authorities. The ASN.1 object identifier tree has a root arc, arcs beneath that root arc, arcs beneath each of those arcs, and so on, to any depth. Arcs are identified by positive integer values (zero upwards) that provide unambiguous identification of an arc within the superior arc. Arcs can also be given names (all in lower case, letters and hyphens only), but these are subsidiary to the numerical values and are not required. An object is identified by the sequence of arc values (numerical, or for early arcs, arc names) from the root to the object.

NOTE For a fuller description of the ASN.1 object identifier tree, see ISO/IEC 8824.

5.3 It is possible in representations of an object identifier to imply (by the context of that representation) identification of part of the path from the root to a node in the object identifier tree. In the extreme case, only a single object identifier component from that implied node need be represented.

This is the approach taken by ISO/IEC 19785-1 and by ISO/IEC 19784-1. These use a sixteen-bit field to provide the identification of an object identifier arc beneath an arc that is implied by the context. In other contexts, the full object identifier value should be given.

5.4 Components of ASN.1 object identifiers are positive integers (including zero) of unlimited magnitude. However, there are standards, for example ISO/IEC 19784-1, using the components allocated by this RA that use a simple 16-bit positive integer encoding for such components. The RA is therefore required to allocate values for arcs that can be represented as a 16-bit positive integer, and to alert the relevant ISO/IEC subcommittee before making allocations with any of the top three bits set to one.

NOTE It is expected that allocations will normally start at zero and proceed incrementally upwards except under exceptional requirements.

5.5 Successful registration as a biometric organization provides that biometric organization with a CBEFF biometric organization identifier. This is a sixteen-bit binary value (that can be interpreted as a positive integer) for an ASN.1 object identifier arc under

{iso registration-authority cbeff(19785) organizations(0)}

The allocated object identifier value is worldwide unambiguous, but the CBEFF biometric organization identifier can also be used alone in contexts where the preceding arcs are implied. Arcs identified by CBEFF biometric organization identifiers do not have arc names.

5.6 A biometric organization that is recognized by the RA as the producer of open standards (standards that are subject to vetting procedures that ensure that they are technically correct and accurate and have wide-spread approval) will be recorded as having open standardization privileges, and is then called a CBEFF

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patron, and its CBEFF biometric organization identifier is called a CBEFF patron identifier. Any registered biometric organization can register BDB formats (see 5.7), SB formats (see 5.10), and biometric products (see 5.9), but only a CBEFF patron can register a BIR format - a CBEFF patron format (see 5.8).

5.7 Successful registration of a BIR format by a CBEFF patron records that the BIR format is identified by an arc with a sixteen-bit BIR format identifier (provided by the CBEFF patron) and also called a CBEFF patron format identifier, under the arc

{iso registration-authority cbeff(19785) organizations(0) <organization id > birs(1)}

and enables publication of a reference to the specification of that BIR format (CBEFF patron format). The <organization id> is the sixteen-bit CBEFF patron identifier of the definer of the CBEFF patron format. The allocated object identifier value is worldwide unambiguous, but the BIR format identifier can also be used alone in contexts where the preceding arcs are implied. Arcs identified by CBEFF patron format identifiers do not have arc names.

5.8 Successful registration of a BDB format by a biometric organization records that the BDB format is identified by an arc with a sixteen-bit BDB format identifier (provided by the CBEFF biometric organization) under the arc

{iso registration-authority cbeff(19785) organizations(0) <organization id> bdbs(0)}

and enables publication of a reference to the specification of that BDB format. The <organization id> is the sixteen-bit CBEFF biometric organization identifier of the definer of the BDB format. The allocated object identifier value is worldwide unambiguous, but the BDB format value can also be used alone in contexts where the preceding arcs are implied. Arcs identified by CBEFF BDB format identifiers do not have arc names.

5.9 Successful registration of an SB format by a biometric organization records that that SB format is identified by an arc with a sixteen-bit SB format identifier (provided by the CBEFF biometric organization) under the arc

{iso registration-authority cbeff(19785) organizations(0) <organization id > sb-formats(3)}

and enables publication of a reference to the specification of that SB format. The <organization id> is the sixteen-bit CBEFF biometric organization identifier of the definer of the SB format. The allocated object identifier value is worldwide unambiguous, but the SB format value can also be used alone in contexts where the preceding arcs are implied. Arcs identified by CBEFF SB format identifiers do not have arc names.

5.10 Successful registration of a biometric product by a CBEFF biometric organization records that the biometric product is identified by an arc with a CBEFF biometric product identifier allocated by the Registration Authority. This is a sixteen-bit binary value (that can be interpreted as a positive integer) for an ASN.1 object identifier arc under

{iso registration-authority cbeff(19785) organizations(0) <organization id> products(2)}

The <organization id> is the sixteen-bit CBEFF biometric organization identifier of the owner of the biometric product. The allocated object identifier value is worldwide unambiguous, but the biometric product identifier can also be used alone in contexts where the preceding arcs are implied. Arcs identified by biometric product identifiers do not have arc names.

5.11 All the above 16 bit identifiers are notified to applicants, and recorded in the registers as four hexadecimal digits. These four hexadecimal digits can also be considered as a positive integer value, and the use of the hexadecimal format does not carry any implications of the representation of this value in machine-readable or other material.

5.12 The Registration Authority shall not assign the value zero (X'00 00') to any biometric organization.

5.13 The Registration Authority may at any time submit to the next meeting of the relevant ISO/IEC subcommittee a request for amendment of this part of ISO/IEC 19785.

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5.14 The Registration Authority shall not be liable for any failure to operate under these procedures, or for any actions in relation to its duties defined in this part of ISO/IEC 19785, except that it may be discharged of its duties by the relevant ISO/IEC subcommittee, without penalty, should it fail to satisfactorily operate these procedures.

NOTE Should the relevant ISO/IEC subcommittee determine that the Registration Authority be discharged of its duties, for this or for any other reason, it is expected that information held by the RA in its registers will be made available to the relevant ISO/IEC subcommittee for use by any other organization that may be subsequently appointed as the Biometric Registration Authority.

6 Appointment of the registration authority

It is within the mandate of ISO/IEC to organize registration as specified in this part of ISO/IEC 19785. In order to do this, ISO/IEC appoints, according to their internal requirements and rules, an organization to act as the RA for this part of ISO/IEC 19785. Annex A specifies the Biometric Registration Authority, and the means of contacting it, that has been appointed to operate the procedures of this part of ISO/IEC 19785.

7 Fees

7.1 The organization performing the role of this RA shall do so on a cost recovery basis. The fee structure shall be designed to recover the expenses of operating the RA, to cover Web publication of registrations, to support inquiry requests, and to discourage frivolous and multiple requests.

7.2 Fees can apply to

a) initial registration;

b) inquiry request;

c) request for update (see 11.4 and 11.6).

7.3 Fees shall be independent of the country from which the application is made.

7.4 In no case shall fees or financial contributions be required from the ISO Secretariat, IEC Central Office, their national bodies, or their technical committees or subcommittees.

7.5 Once the fee associated with making an initial register entry has been made, there shall be no further charges for the maintenance of that entry or its publication on a web-site.

8 Registration procedures for CBEFF biometric organizations and CBEFF patrons

8.1 General

This subclause specifies the procedures to be followed in the registration of CBEFF biometric organizations and CBEFF patrons. The procedures are designed to assure openness and due process in the registration process, with review if necessary by the relevant ISO/IEC subcommittee.

8.2 Application for registration as a CBEFF biometric organization or as a CBEFF patron

8.2.1 An organization submits an application for registration as a CBEFF biometric organization or as a CBEFF patron directly to the RA. The content of the application is specified in subclause 10.2.

8.2.2 Any bona-fide organization concerned with the specification of biometric formats or the production or use of biometric products can apply for registration as a CBEFF biometric organization.

NOTE It is intended that the class of those eligible to apply for registration as a “biometric organization” should be as wide and loose as is manageably possible.

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8.2.3 There shall be no filter on such applications other than to establish that the organization is a bona-fide organization (preferably, but not necessarily, with some registered status within some country). The sole purpose of this filter is to exclude frivolous and hacker applications. If an application is made, and the RA cannot easily determine that it is from a bona-fide organization, registration will be either rejected subject to appeal, or else referred to the relevant ISO/IEC subcommittee for a decision.

8.2.4 The organization may also claim in its registration application that it is the producer of open standards (standards that are subject to vetting procedures that ensure that they are technically accurate and have wide-spread approval). If this claim is accepted, the applicant is assigned a “biometric organization identifier” from the same namespace, but with the “BIR format definition” privilege. Such an organization can, if it wishes, promote itself as a “CBEFF patron”, and the BIR formats that it defines (and may register) are called CBEFF patron formats. It may (and is likely to) develop open specifications of CBEFF patron formats (BIR formats), BDB formats, and/or security block formats, within its own standardisation procedures. It may (but is unlikely to) assign biometric product identifiers.

8.2.5 Upon successful completion of the registration procedures, a 2-byte CBEFF biometric organization identifier is registered as assigned, published, and notified to the applicant.

NOTE Sample listings of CBEFF biometric organization registration data are provided in Annex B.

8.3 Review of applications

8.3.1 Procedure

8.3.1.1 In order for an application to be processed, it shall contain sufficient information to enable the applicant to be identified as a bona-fide organization that is active in the biometric field, and that has good reason to require a CBEFF biometric organization registration.

NOTE Evidence of this will often include a registered company identifier or equivalent in some country, together with a statement of activity in the area of biometrics.

8.3.1.2 If the application does not contain the information specified in 10.2, the application shall be rejected and the applicant notified, citing this subclause and the specific missing information as the reason for rejection.

8.3.1.3 If the RA determines that the application is appropriate, then it is put into the confirmation process specified in 8.4.

8.3.1.4 If the RA determines that the application may not be appropriate, then it shall be referred to the relevant ISO/IEC subcommittee for a decision at its next scheduled meeting, and the applicant shall be so informed.

8.3.2 Response time

The review of an application under the procedures specified in 8.3.1 shall normally be completed within 10 working days of the receipt of the application.

8.4 Confirmation process

Details of the successful application shall be recorded (with the CBEFF biometric organization identifier that was allocated) on a website maintained by the RA, and the applicant shall be informed of the URL of this site. Adequate back-up procedures shall be used to ensure that register data is not lost.

8.5 Objection process for CBEFF patron registrations

Following publication by the RA of a registered CBEFF patron identifier, any ISO/IEC National Body may submit to the relevant ISO/IEC subcommittee, within twelve months, a statement that it considers the registration to be inappropriate. Should the relevant ISO/IEC subcommittee resolve that the objection be

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upheld, all details of the registration shall be removed from the web-site and the applicant shall be notified of the withdrawal of the registration, but the registered value shall not be re-used.

NOTE This applies only to registration of CBEFF patron identifiers, not to registration simply as a biometric organization.

9 Registration procedures for BIR formats, BDB formats, SB formats and biometric products

9.1 General

9.1.1 This clause specifies the procedures to be followed in the registration of BIR formats (CBEFF patron formats), BDB formats, SB formats, and biometric products. The procedures are designed to provide simple registration, with minimal administrative overhead.

9.1.2 The biometric product identifier for a biometric product is typically combined with the CBEFF biometric organization identifier that has been assigned to the product owner. The biometric product identifier is uniquely assigned by a biometric organization within the context of its biometric organization identifier and can be optionally registered and published by the RA.

NOTE Implementations of these values are encoded as determined by the CBEFF patron (the body specifying a BIR format). There are no restrictions on data encoding. The representation and assignment as 4 hexadecimal digits is not intended to specify an encoding method.

9.2 Application for registration of a BIR format, BDB format, SB format, or biometric product

9.2.1 A registered biometric organization submits an application directly to the RA. The content of the application is specified in 10.3.

9.2.2 The application shall be rejected with notification to the applicant if the applicant is not a registered biometric organization, citing this subclause as the reason for rejection.

9.2.3 Registration of a BIR format shall be rejected with notification to the applicant if the applicant is not a registered CBEFF patron, citing this subclause as the reason for rejection.

9.2.4 Upon successful completion of the registration procedures, the sixteen-bit BIR format identifier, BDB format identifier, SB format identifier, or product identifier is registered and published.

9.3 Review of applications

9.3.1 Procedure

9.3.1.1 If the application does not contain the information specified in 10.3, the application shall be rejected and the applicant notified, citing this subclause and the specific missing information as the reason for rejection.

9.3.1.2 If the RA determines that the applicant has provided all necessary information, then it is put into the confirmation process specified in 9.4.

9.3.2 Response time

The review of an application under the procedures specified in 9.3.1 is expected to be completed within 10 working days of the receipt of the application.

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9.4 Confirmation process

Details of the successful application shall be recorded (with the BIR format identifier, the BDB format identifier, SB format identifier, or the biometric product identifier) on a web site maintained by the RA, and the applicant shall be informed of the URL of this site. Adequate back-up procedures shall be used to ensure that register data is not lost.

9.5 Objection process

Following publication by the RA of a registered BIR format, BDB format, or SB format, any ISO/IEC National Body may submit to the relevant ISO/IEC subcommittee, within twelve months, a statement that it considers the format to be inadequately or incorrectly specified. Should the relevant ISO/IEC subcommittee resolve that the objection be upheld, all details of the registration shall be removed and the applicant shall be notified of the withdrawal of the registration, but the registered values shall not be re-used.

NOTE It is expected that most objections will be resolved by discussion and modification of the format specification, and that withdrawal will not be necessary.

10 Content of applications

10.1 General

This clause specifies the information required by the RA to conduct the registration process. This information can be submitted by e-mail, telephone, or paper copy, or (if the RA chooses to support these options) as a Web-based form or using Web Services protocols.

10.2 Application for registration as a biometric organization or as a CBEFF patron

The application shall include all the following information:

a) country in which the organization has its main headquarters;

b) name of organization, with country registration information if a registered company, charity, etc. or affiliation to a known international organization;

c) name and title, postal address, e-mail address, telephone and fax number for the contact point within the requesting organization;

d) free-form information establishing the bona-fides of the organization (see 5.6) as an organization that is the producer of open standards, if registration as a CBEFF patron is being requested (this is not needed otherwise); and

e) free-form information stating the domain in which the organization operates.

10.3 Application for registration of a BIR format, BDB format, SB format, or biometric product

The application shall include all the following information:

a) The CBEFF biometric organization identifier of the applicant; and

b) Either

   1) the BIR format identifier (CBEFF patron format identifier) to be registered, and a document in an RA-approved document format specifying the BIR format;

   2) the BDB format identifier to be registered, and a document in an RA-approved document format specifying the BDB format;

      NOTE The document specifying the BDB format may do so by a reference to any publicly-available document, such as an International Standard, or to a BDB format already registered by some other organization.

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3) the SB format identifier to be registered, and a document in an RA-approved document format specifying the SB format; or

4) the biometric product identifier to be registered and a document in an RA-approved document format specifying the details of the biometric product for which registration is requested.

NOTE The RA-approved document formats can be obtained by contacting the RA, but at the time of publication of this part of ISO/IEC 19785 they are Microsoft Word, PDF, and HTML.

11 Maintenance of a web-based register

11.1 The RA shall maintain five registers to include the following:

a) biometric organizations, indicating whether they are accepted as CBEFF patrons or not;

b) registered CBEFF patron formats;

c) registered BDB formats;

d) registered SB formats; and

e) registered products.

Each entry shall give the identifier information, together with a link to the full details provided in the approved application.

11.2 The RA shall provide a website which displays the contents of the registers. The RA shall be responsible for determining the internal procedures necessary for the maintenance of the register in a timely and appropriate manner.

11.3 The register shall contain full details of approved applications, together with a copy of any information that is referenced by a non-permanent reference, such as a URL, of any RA allocations made to the applicant, and of any subsequent identifiers allocated and registered by a registered biometric organization. The register shall be capable of interrogation using the value of the RA allocation that has been made, or by a combination of an RA allocation of a biometric organization identifier and an identifier (of a BIR format, BDB format, SB format, or biometric product) allocated by the identified biometric organization.

11.4 Information about organizations involved in a registration shall be updated by the RA free of charge if the RA is given details of changes of company name, contact details, or similar information, with appropriate authorization for the change.

11.5 If a new version of a BIR format, BDB format, SB format, or biometric product is to be registered with a new identifier, this shall be treated as a new registration for fee and all other purposes, but the old registration shall (if the new registration is accepted), on request, be modified free of charge by the RA to indicate that it has been superseded by the later version. Its registration code shall not be re-used, and information related to it shall not be deleted from the web-site.

11.6 If a new version of a BIR format, BDB format, SB format or biometric product is to be registered as a new version, but using an existing identifier, then the following conditions apply.

11.6.1 For a BIR format, BDB format, or SB format, the format shall include version information in such a way that any system with knowledge of only one of the currently defined versions can (as a minimum) determine that the BIR format, BDB format, or SB format is of a different version, and can determine the version number information for that version.

NOTE This will generally imply a similarity of the approaches used to encode the data in the different versions.

11.6.2 For a biometric product, the behaviour of the product in relation to the creation of BDBs shall not be materially changed.

11.6.3 In all cases, information on all previous version(s) shall be retained in the register entry.

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Annex A
(normative)

Registration authority

The Registration Authority for CBEFF approved by the ISO/IEC Council is

The International Biometric Industry Association (IBIA)
601 Thirteenth Street, N.W.
Suite 370 South
Washington, D.C. 20005
U.S.A.

Telephone: +1 (202) 783-7272
Facsimile: +1 (202) 783-4345
Email: ibia@ibia.org

All applications for registration or enquiries about the registers maintained by the Registration Authority shall have a subject “Re: Biometric Registration Authority”.

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Annex B
(informative)

Sample registration tables

B.1 Register structure

Current versions of CBEFF registers may be found at http://www.ibia.org/biometrics/formatregistry.asp. This web site contains all information relevant to applicants, including application procedures, forms, and information on existing CBEFF registrations. These registrations are organized as five separate tables, which are described in the following subclauses, using (partially) fictitious entries. In all cases identifier values are listed as hexadecimal values followed by decimal values in parentheses.

B.2 Biometric organizations

The biometric organization table (see Table B.1) lists each company or organization that has been registered along with the assigned CBEFF biometric organization Identifier. Selected information specified in subclause 10.2(e) is included, such as a point of contact, country, domain of activity, etc. and whether the biometric organization is recognised as a CBEFF patron. Additional entries indicate whether the organization has registered CBEFF patron formats, BDB formats, SB formats, or products. Hyperlinks are used as appropriate to reference external web sites or email addresses.

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Table B.1 — CBEFF biometric organizations

CBEFF Biometric Organization Identifier	CBEFF Biometric Organization	Contact Name or title	Country	Domain of activity (see 10.2 e)	Registered as a CBEFF patron?	Registration Type(s) (BIR, BDB, SB, Product)
0000 (0)	Will never be allocated. Can be used to represent the CBEFF NO VALUE AVAILABLE	N/A	N/A	N/A	N/A	N/A
0001 (1)	ABC Company	John Doe	USA	Biometric solution provider.	No	BDB Product
0002 (2)	DEF Inc	Jane Smith	Canada	OEMs and others for security.	No	Product
000F (15)	National Institute of Standards and Technology (NIST)	A. B. Cee	USA	Government agency.	Yes	BIR BDB SB
001A (26)	German Institute for Standardisation (Deutsches Institut fur Normung E.V.-DIN)	Dr. E. Eff	Germany	National standards body for Germany	Yes	None
001B (27)	INCITS Technical Committee M1 - Biometrics	G. H. Eye	USA	National standards organization for biometrics.	Yes	BIR BDB SB
0101 (257)	ISO/IEC JTC 1 SC 37 - Biometrics	J. K. Ell	USA	International standards organization, subcommittee on biometrics.	Yes	BIR BDB SB Product
FEFF (65,279)	Private use, not uniquely assigned by IBIA.	N/A	N/A	N/A	N/A	N/A
FFF0 - FFFE (65,520 – 65,534)	Reserved for testing.	N/A	N/A	N/A	N/A	N/A
FFFF (65,535)	Reserved for possible future extensions.	N/A	N/A	N/A	N/A	N/A

B.3 CBEFF patron formats

CBEFF patron formats are format specifications for BIRs that may be registered by CBEFF patrons. Information registered for each such format includes the name and CBEFF Patron Identifier of the CBEFF Patron organization, the CBEFF Patron Format Identifier, and a summary description of the format's use, including reference to applicable standards, if any. Representative (but not necessarily accurate) entries are listed in Table B.2.

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Table B.2 — CBEFF patron formats

CBEFF Patron	CBEFF Patron Identifier	CBEFF Patron Format Identifier	Description
INCITS Technical Committee M1 - Biometrics	001B (27)	0000 (0)	Patron format for use in Homeland Security in the USA.
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0001 (1)	Fixed length with all values of all data elements supported. [a]
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0002 (2)	Minimum SBH format. [a]
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0003 (3)	Byte oriented, variable length, with optional support of all values of all fixed length data elements. [a]
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0004 (4)	Bit oriented, variable length, with optional support of all values of all fixed length data elements. [a]
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0005 (5)	The BioAPI biometric identification record (BIR) See ISO/IEC 19784-1:— [b], Annex B
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0006 (6)	Biometric information data objects for use within smartcards or other tokens. [a]

[a] The applicable standard will be the future International Standard ISO/IEC 19785-3.

[b] To be published.

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B.4 BDB formats

BDB format registrations may be made by any registered biometric organization. Table B.3 illustrates sample contents of a BDB format register

Table B.3 — BDB Formats

CBEFF Biometric Organization	CBEFF Biometric Organization Identifier	BDB Format Identifier	Description
INCITS Technical Committee M1 - Biometrics	001B (27)	0201 (513)	Finger minutiae record – no extended data per INCITS 378
INCITS Technical Committee M1 - Biometrics	001B (27)	0202 (514)	Finger minutiae record – extended data per INCITS 378
INCITS Technical Committee M1 - Biometrics	001B (27)	0301 (769)	Finger pattern interchange – no extended data per ANSI/INCITS 377
INCITS Technical Committee M1 - Biometrics	001B (27)	0302 (770)	Finger pattern interchange – with extended data per ANSI/INCITS 377
INCITS Technical Committee M1 - Biometrics	001B (27)	0401 (1025)	Finger image interchange per ANSI/INCITS 381
INCITS Technical Committee M1 - Biometrics	001B (27)	0501 (1281)	Face image interchange per ANSI/INCITS 385
INCITS Technical Committee M1 - Biometrics	001B (27)	0601 (1537)	Iris image interchange – rectilinear format per ANSI/INCITS 379
INCITS Technical Committee M1 - Biometrics	001B (27)	0602 (1538)	Iris image interchange – polar format per ANSI/INCITS 379
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0001 (1)	Finger minutiae record, no extended data, with ridge endings and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0002 (2)	Finger minutiae record - extended data, with ridge endings and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0003 (3)	Finger minutiae card record - normal size, with ridge endings and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0004 (4)	Finger minutiae card format – normal size, with ridge skeleton end points and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0005 (5)	Finger minutiae card record - compact size, with ridge endings and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0006 (6)	Finger minutiae card format – compact size, with ridge skeleton end points and bifurcations per ISO/IEC 19794-2
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0007 (7)	Finger image interchange per ISO/IEC 19794-4
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0008 (8)	Face image interchange per ISO/IEC 19794-5
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	0009 (9)	Iris image interchange – rectilinear format per ISO/IEC 19794-6
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	000A (10)	Finger pattern based interchange – spectral per ISO/IEC 19794-3
ISO/IEC JTC 1 SC 37 - Biometrics	0101 (257)	000B (11)	Iris image interchange – polar format per ISO/IEC 19794-6

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B.5 SB formats

SB format registrations may be made by any registered biometric organization. Table B.4 illustrates sample contents of a SB format register.

Table B.4 — SB Formats

CBEFF Biometric Organization	CBEFF Biometric Organization Identifier	SB Format Identifier	Description
INCITS Technical Committee M1 - Biometrics	001B (27)	0001 (1)	Security block for 3DES encryption
ISO/IEC JTC 1 SC 37 - Biometrics	001B (27)	0002 (2)	Security block for AES encryption
ISO/IEC JTC 1 SC 37 - Biometrics	001B (27)	0003 (3)	Security block for AES encryption and message authentication code

B.6 Products

Product registrations may be made by any registered biometric organization. Table B.5 illustrates sample contents of a product register.

Table B.5 — Products

CBEFF Biometric Organization	**CBEFF Biometric Organization Identifier**	**Product Identifier**	**Description**
ABC Company	0001 (1)	0016 (22)	Fingerprint scanner model A-1
DEF Inc	0002 (2)	1022 (4130)	Face image capture software V1.0

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

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