

Biometric Registry Overview and Registration Procedures

A guide to CBEFF biometric identifiers and how to register with IBIA, the Biometric Registration Authority.

Overview

Biometric Identifiers

Biometric Identifiers are numeric data elements used to identify biometric objects referenced within biometric data records. Biometric Identifiers facilitate biometric data interchange between different system components or between systems, promote interoperability of application programs and systems that use biometrics, support forward compatibility for technology improvements, and facilitate the software and hardware integration process.

The Biometric Identifier concept is formally established by standards called the Common Biometric Exchange Formats Framework (CBEFF).

There are currently two versions of CBEFF:

- **CBEFF 1.1** is an ANSI/INCITS¹ standard (ANSI INCITS 398-2005). CBEFF was originally developed in a series of workshops jointly sponsored by the (US) National Institute of Standards and Technology (NIST) and the Biometric Consortium. CBEFF 1.0 was published as NISTIR 6529 in 2001. CBEFF 1.1 was published as NISTIR 6529-A in 2004 and was adopted by ANSI/INCITS in 2005 and revised in 2008, 2013, and 2023.
- **CBEFF 4.0** is an ISO/IEC JTC 1² standard (ISO/IEC 19785-1:2020). Subcommittee 37 of JTC 1 (SC 37 Biometrics) developed CBEFF 4.0 as the third edition of the SC37 standard (previously released as version 2.0 and 3.0), with participation by more than a dozen different national standards bodies.
 - **Part 1: Data element specification** specifies several abstract data elements for use in biometric record headers, including definitions for biometric identifiers.
 - **Part 2: Biometric Registration Authority**³ describes the identification scheme used by this website and biometric registry in preparing, maintaining, and publishing registers of identifiers for biometric organizations and biometric objects, and provides a description of the Biometric Registration Authority (BRA) responsibilities and services. Procedural requirements for this registry are described on the SC 37 website.⁴
 - **Part 3: Patron format specifications** specifies and publishes registered CBEFF patron formats defined by the CBEFF patron ISO/IEC JTC 1/SC 37, and specifies their registered CBEFF patron format types.
 - **Part 4: Security block format specifications** specifies security block (SB) formats (see ISO/IEC 19785-1) registered in accordance with ISO/IEC 19785-2 as formats defined by the CBEFF biometric organization ISO/IEC JTC 1/SC 37.

Biometric Identifier Registrations

A Biometric Organization is a bona-fide organization concerned with the specification of biometric formats or the production or use of any biometric object.

To become a recognized CBEFF Biometric Organization (as defined by ISO/IEC 19785-1 and ISO/IEC 19785-2) and obtain a unique biometric organization identifier, the entity is required to register with the Biometric Registration Authority (IBIA).

In addition to the organization identifier, there are ten types of specific biometric object identifiers:

- BIR Header Identifiers
- Feature Extraction Algorithm Identifiers
- BDB Format Identifiers
- Comparison Algorithm Identifiers
- SB Format Identifiers
- Quality Algorithm Identifiers
- Product Codes
- Compression Algorithm Identifiers
- Capture Device Identifiers
- PAD Mechanism Identifiers

A complete Biometric Identifier consists of two parts:

- The Biometric Owner identifier (as assigned by and registered through IBIA)
- The specific object identifier (as assigned by the object's owner and registered through IBIA)

Note that owners are not required to register the identifiers of their particular objects, but may do so as the means of informing the biometrics industry of the existence and availability of the objects.

CBEFF recognizes four objects that have owners and identifiers:

- **The biometric data block (BDB) format:** contains the actual biometric data, as opposed to the CBEFF header, which contains fields that describe attributes of the BDB.
- **The patron format:** a specification for a CBEFF header (also called a BIR header or Biometric Information Record header).
- **The security block format:** a specification for the optional part of a biometric record that describes its encryption and integrity attributes.
- **The product:** a software or hardware object associated with the creation or processing of a BDB.

A CBEFF format type or product type represents a specific data format or product as defined by the format/product owner. These may be proprietary, unpublished formats (or products) or formats that have been standardized by an industry group, consortium, or standards body. The owning entity may optionally register the format/product type value, but is not required to do so.

IBIA is the Biometric Registration Authority for CBEFF Format/Product Owner and Format/Product Type values for organizations and vendors that require them. Registration of format owner is required to populate the various format-owner/product-owner fields of the CBEFF header. Registration of any format/product-type is optional. Both values, as a pair, are required when the format or product identifier is included in a CBEFF header. The BDB format owner and type are mandatory in every CBEFF header; the presence or absence of the other owner/type pairs is as defined by the CBEFF header's patron format specification.

The CBEFF format or product owner is a 2-byte unsigned integer value. The CBEFF format or product type is another 2-byte unsigned integer value. Each of these can be represented (for ease of communication) as 4 hexadecimal characters, such as "023F." The format owner value is uniquely assigned by IBIA as part of the registration process. The format type value is uniquely assigned by the registered format or product owner and can optionally be registered and published by IBIA. Format owners are free to disclose as much or as little about their specific format types as they wish, anywhere from full secrecy regarding their existence to full publication of the details of a data format itself.

Registration Procedures

CBEFF Biometric Organizations and CBEFF Patrons

Registration as a biometric organization, and thus the assignment of a unique biometric organization identifier, is offered to any bona fide organization concerned with the specification of biometric formats or the production or use of biometric products. Any registered biometric organization may, in turn, assign identifiers; register and publish biometric data block (BDB) formats, security block (SB) formats, and biometric products; and may use the Biometric Registration Authority's web site to publicly and permanently record those identifiers.

If a biometric organization is a producer of open standards, i.e. standards that are subject to vetting procedures to ensure that they are technically accurate and have widespread approval, it may also seek recognition as a CBEFF patron. In addition to the privileges held by any other biometric organization, a CBEFF patron may develop and (optionally) register biometric information record (BIR) formats that are designated CBEFF patron formats and may also develop open specifications of BDB formats and/or SB formats.

Registration of CBEFF Biometric Organizations and CBEFF Patrons

The application for a Biometric Organization or CBEFF Patron may be submitted via email, telephone, paper copy, or web-based form. The application must include:

- Country in which the organization has its main headquarters;
- Name of organization, with country registration information if a registered company, charity, etc. or affiliation to a known international organization;
- Name and title, postal address, e-mail address, telephone and fax number for the contact point within the requesting organization;
- Free-form information establishing the bona fides of the organization 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
- Free-form information stating the domain in which the organization operates.

Registration of BIR, BDB, and SB Formats and Biometric Products

Any biometric organization may register a BDB format, SB format, or biometric product. Only CBEFF patrons may register a BIR format. The application may be submitted via email (to info@ibia.org), paper copy (preferably using this Word template), or web-based form and must include:

- The registered biometric organization identifier of the applicant; and
- The decimal identifier value (the registrar will calculate the registered hexadecimal value) of the biometric object being registered, either:
 - The BIR format identifier (CBEFF patron format identifier) to be registered, and a document in an IBIA-approved document format specifying the BIR format; or
 - The BDB format identifier to be registered, and a document in an IBIA-approved document format specifying the BDB format; or
 - The SB format identifier to be registered and a document in an IBIA-approved document format specifying the SB format; or
 - The biometric product identifier and the product category (or categories if the product fits more than one category) to be registered and a document in an IBIA-approved document format specifying the details of the biometric product for which registration is requested. The product categories are: capture device, feature extraction algorithm, comparison algorithm, quality algorithm, and compression algorithm.

The document specifying the format or product should be a reference to any publicly-available document, such as an International Standard, or to a format or product already registered by some other organization.

Approved document formats: Microsoft Word, PDF, and HTML.

Submit Your Application

IBIA currently offers two ways to submit your application:

1. Complete the form on the next page and send it via email to **info@ibia.org**.
2. Complete and submit the form online at www.ibia.org/biometric-registry.

Once IBIA receives your form and all required registration fees the unique biometric organization identifier value will be issued and your registration will be listed in the registration tables on the IBIA website.

Registration Form

Name: _____

Title: _____

Company: _____

Email: _____

Address: _____

City: _____

State: _____

Zip: _____

Country: _____

Telephone: _____

Website: _____

Company Description:

List of Format/Product Types to be Registered:

(Format/Product Short Name, 2 Byte Hex ID, Descriptive Document, or URL)

Once complete, please send a copy of this form to **info@ibia.org** and we will contact you with next steps within five business days.

You may also complete the form online at www.ibia.org/biometric-registry.

References:

- ¹ American National Standards Institute/International Committee for Information Technology Standards
- ² International Standards Organization/International Electrotechnical Committee Joint Technical Committee 1
- ³ Part 2 (ISO/IEC 19785-2:2020)
- ⁴ Registry procedures: https://committee.iso.org/files/live/sites/jtc1sc37/files/ABOUT/Procedural_Information_BRA.pdf