
**Identification cards — Optical memory
cards — Linear recording method —**

Part 6:

**Use of biometrics on an optical memory
card**

iTeh STANDARD PREVIEW

*Cartes d'identification — Cartes à mémoire optique — Méthode
d'enregistrement linéaire*
(standards.iteh.ai)

Partie 6: Emploi de la biométrie sur une carte à mémoire optique

[ISO/IEC 11694-6:2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006)

[https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-
8d043ae6cdb5/iso-iec-11694-6-2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006)

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 11694-6:2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006)

<https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006>

© ISO/IEC 2006

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword.....	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Interchange of biometric data items	2
5 Biometric tag ranges	2
6 CBEFF files that meet other standards	3
7 Finding other relevant CBEFF files	4
Bibliography	6

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[ISO/IEC 11694-6:2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006)

<https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006>

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 11694-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology, Subcommittee SC 17, Cards and personal identification*.

ISO/IEC 11694 consists of the following parts, under the general title *Identification cards — Optical memory cards — Linear recording method*:

- *Part 1: Physical characteristics* [ISO/IEC 11694-6:2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6c1b5/iso-iec-11694-6-2006)
- *Part 2: Dimensions and location of the accessible optical area*
- *Part 3: Optical properties and characteristics*
- *Part 4: Logical data structures*
- *Part 5: Data format for information interchange for applications using ISO/IEC 11694-4, Annex B*
- *Part 6: Use of biometrics on an optical memory card*

Introduction

This part of ISO/IEC 11694 is one of a series of standards defining the parameters for optical memory cards and the use of such cards for the storage and interchange of digital data.

This part of ISO/IEC 11694 is specific to optical memory cards using the linear recording method. Characteristics which apply to other specific recording methods are found in separate standards documents.

This part of ISO/IEC 11694 describes the use of biometric data on an optical memory card. It uses the logical structure defined in ISO/IEC 11694-5 to facilitate the interchange of biometric data written to optical memory cards using the linear recording method.

All numbers in this document are written in decimal notation unless otherwise specified.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[ISO/IEC 11694-6:2006](https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006)

<https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006>

iTeh STANDARD PREVIEW
(standards.iteh.ai)

ISO/IEC 11694-6:2006

<https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-8d043ae6cdb5/iso-iec-11694-6-2006>

Identification cards — Optical memory cards — Linear recording method —

Part 6: Use of biometrics on an optical memory card

1 Scope

This part of ISO/IEC 11694 specifies the use of biometric data on optical memory cards using the logical data structure defined in ISO/IEC 11694-5.

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 11694-4, *Identification cards — Optical memory cards — Linear recording method — Part 4: Logical data structures*

ISO/IEC 11694-5, *Identification cards — Optical memory cards — Linear recording method — Part 5: Data format for information interchange for applications using ISO/IEC 11694-4, Annex B*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 11694-4, ISO/IEC 11694-5, ISO/IEC 19785-1 and the following apply.

3.1

biometric data

set of bytes that describes the physical properties of one or more parts of a living body

EXAMPLE The encoded template which mathematically describes a person's fingerprint. This template can be compared against the fingerprint of the person who is presenting the card.

3.2

CBEFF file

biometric data file (a set of bytes) that conforms to ISO/IEC 19785-1

3.3

encoded biometric data

biometric data that has been interpreted and encoded

3.4

raw biometric data

biometric data obtained directly from a biometric device

4 Interchange of biometric data items

ISO/IEC 11694-5 allows for the interchange of all types of data on optical cards by specifying both the directory structure on the card and the method of identifying individual data items that are written to the card. Using the data format described in ISO/IEC 11694-5, biometric data is accessed in much the same manner as any other type of data on an optical memory card.

This being the case, this part of ISO/IEC 11694 specifies tags and structures which facilitate and which are specific to accessing biometric data items on a card.

Typically, an application that reads a given card looks on that card for tags that correspond to data items that the application knows how to use, based on the published tag document. ISO/IEC 11694-5 includes a set of defined tag ranges that assist a reading application in accessing useful biometric data on the card in the absence of the application's knowledge of a particular tag.

EXAMPLE The reader requires from the card, images of one or more of the cardholder's fingerprints. It queries the card for any data with tags in the range from 7000 through 7999. Tags in this range correspond to data items containing raw fingerprint images. If the card contains any such data, the reader can then read the corresponding data item from the card and use it to verify the identity of the cardholder.

The reader can use a process similar to that in the above example to read and use any type of biometric information that is associated with a tag which is not recognized by the reader.

5 Biometric tag ranges

iTeh STANDARD PREVIEW

If a card issuer wishes to write to their cards, biometric data items that do not conform exactly to any of the standards listed in the next section, they shall request from the tag registration authority (as defined in ISO/IEC 11694-5) a new tag. The tag registration authority shall issue a tag in one of the following ranges, according to the type of biometric item:

[ISO/IEC 11694-6:2006](https://standards.itih.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-5/iso-iec-11694-6-2006)

<https://standards.itih.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-5/iso-iec-11694-6-2006>

Tag range	Description of biometric items
2000 – 2999	Any encoded (not raw) biometric data that comprises information specifically about the face or head of the subject. This specifically includes matching of face (visible light or thermal) and ear and excludes matching of eyes.
3000 – 3999	Any encoded (not raw) biometric data that comprises information specifically about the fingers of the subject. This includes fingerprints and attributes of individual fingers and excludes hand geometry.
4000 – 4999	Any encoded (not raw) biometric data that comprises information specifically about the eyes of the subject. This specifically includes retina and iris matching.
5000 – 5999	Any encoded (not raw) biometric data that comprises information specifically about the hands or feet of the subject. This specifically includes hand geometry, palm and foot prints, veins in the hand, and thermal hand image, and excludes fingerprints or individual finger traits, which are in another range.
6000 – 6999	Any raw (not encoded or processed) images of the subject. This includes the common image of the face (portrait).
7000 – 7999	Any raw (not encoded or processed) images of single digit fingerprints.
8000 – 8999	Any raw images or encoded data that comprises information about the pen-based signature of the subject.
12200 – 12299	Any encoded biometric data that comprises information on a molecular or cellular level. This specifically includes DNA and body odour matching.

Tag range	Description of biometric items
12300 – 12399	Any encoded biometric data that comprises information about a behaviour. This specifically includes gait, keystroke, lip movement and voice and excludes the pen-based signature, which is in another range.
12400 – 12799	Any biometric data that does not fit into the above categories and conforms to ISO/IEC 19785-1, <i>Information technology — Common Biometric Exchange Formats Framework</i>
12800 – 12899	Any biometric data that does not fit into the above categories and does not conform to ISO/IEC 19785-1, <i>Information technology — Common Biometric Exchange Formats Framework</i>

A reading application that supports the verification or identification of the cardholder using certain biometric data items can use the above table as a guide, and look for tags in the range that matches its capabilities.

EXAMPLE A reading application is in a system that consists of a camera for obtaining the facial image of the cardholder and which contains software that can compare the cardholder's face against templates assigned to tags 2345, 2346, and certain CBEFF files. This application can start by querying the card for any data items with tags in the range from 2000 through 2999. If there are 2345 or 2346 data items, the application can read and use them right away. If there is an unrecognised data item with tag 2347, the application can look for the CBEFF header for that item and parse that header to see if the item can be used. Clause 7 describes how to find and read the CBEFF header without having to read the data item itself, if the card issuer supports it.

6 CBEFF files that meet other standards

Although the use of ISO/IEC 19785-1 (CBEFF) is not required by this part of ISO/IEC 11694, the use of existing biometric standards for the storage of biometrics on optical memory cards is strongly recommended.

This part of ISO/IEC 11694 includes specific support for CBEFF files.

<https://standards.iteh.ai/catalog/standards/sist/7708e102-4fe9-421e-9167-88831bc06c9a/iso-iec-11694-6-2006>

The following standards, which all describe CBEFF files, are specific as to which biometric is described, so each has a tag within the tag range corresponding to the type of biometric. Exact implementations of these standards shall not require a tag document and shall be assigned the following tags within ISO/IEC 11694-5:

Tag	Data item meaning
3030	ISO/IEC 19794-2, <i>Information technology — Biometric data interchange formats — Part 2: Finger minutiae data</i>
3040	ISO/IEC 19794-3, <i>Information technology — Biometric data interchange formats — Part 3: Finger pattern spectral data</i>
7030	ISO/IEC 19794-4, <i>Information technology — Biometric data interchange formats — Part 4: Finger image data</i>
2001	ISO/IEC 19794-5, <i>Information technology — Biometric data interchange formats — Part 5: Face image data</i>
4010	ISO/IEC 19794-6, <i>Information technology — Biometric data interchange formats — Part 6: Iris image data</i>
8150	ISO/IEC 19794-7, <i>Information technology — Biometric data interchange formats — Part 7: Signature/sign time series data</i>
3070	ISO/IEC 19794-8, <i>Information technology — Biometric data interchange formats — Part 8: Finger pattern skeletal data</i>