
**Identification cards — Integrated
circuit cards —**

**Part 11:
Personal verification through
biometric methods**

Cartes d'identification — Cartes à circuit intégré —

Partie 11: Verification personnelle par méthodes biométriques

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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 or www.iec.ch/members_experts/refdocs).

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 <https://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. In the IEC, see www.iec.ch/understanding-standards.

This document was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Cards and security devices for personal identification*.

This third edition cancels and replaces the second edition (ISO/IEC 7816-11:2017), which has been technically revised.

The main changes are as follows:

- In [Subclause 5.4](#), functionality of RETRIEVE BIOMETRIC REFERENCE operation has been expanded to retrieve the following two different cases of biometric reference information:
 - including biometric reference;
 - not including biometric reference.
- In [Subclause 5.4](#), new alternative names have been assigned to the following two operations of PERFORM BIOMETRIC OPERATION command:
 - RETRIEVE BIOMETRIC REFERENCE operation (to be deprecated)
RETRIEVE BIOMETRIC REFERENCE INFORMATION operation (assigned)
 - STORE BIOMETRIC INFORMATION operation (to be deprecated)
STORE BRT CERTIFICATE operation (assigned).
- In [Table 4](#), according to ISO/IEC 24787:2018, the parameters to be used by SET BIOMETRIC PARAMETER operation has been added.
- In [Table 8](#), the presence condition of tag allocation authority DOs has been clarified for the case of the default tag allocation authority.

- In [Table 9](#), the format of a biometric information template has been modified and clarified for the following use cases:
 - The template conveys multiple sets of DOs defined by more than one compatible tag allocation authority.
 - An individual standard becomes a tag allocation authority within the template.
- In [Table 10](#), the format of a biometric information template group template has been modified for explicit tag allocation coding, keeping backward compatibility to implicit tag allocation coding.
- In [Table 11](#), biometric modality specific additional data DOs have been added as optional into a biometric data template to support existing biometric data format standards.
- In [Figure 1](#), a use case has been copied from the first edition of ISO/IEC 7816-11, which sends two different formats of biometric probes at the same time.
- Annex C has been deleted.

A list of all parts in the ISO/IEC 7816 series can be found on the ISO and IEC websites.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html and www.iec.ch/national-committees.

Introduction

The ISO/IEC 7816 series of standards specifies integrated circuit cards and the use of such cards for interchange. These cards are identification cards intended for information exchange negotiated between the outside world and the integrated circuit in the card. As a result of an information exchange, the card delivers information (computation result, stored data) and/or modifies its content (data storage, event memorization).

Five parts in the ISO/IEC 7816 series are specific to cards with galvanic contacts and three of them specify electrical interfaces.

- ISO/IEC 7816-1 specifies physical characteristics for cards with contacts.
- ISO/IEC 7816-2 specifies dimensions and location of the contacts.
- ISO/IEC 7816-3 specifies electrical interface and transmission protocols for asynchronous cards.
- ISO/IEC 7816-10 specifies electrical interface and answer to reset for synchronous cards.
- ISO/IEC 7816-12 specifies electrical interface and operation procedures for USB cards.

All of the other parts in the ISO/IEC 7816 series are independent from the physical interface technology. They apply to cards accessed by contacts and/or by radio frequency.

- ISO/IEC 7816-4 specifies organization, security and commands for interchange.
- ISO/IEC 7816-5 specifies registration of application providers.
- ISO/IEC 7816-6 specifies interindustry data elements for interchange.
- ISO/IEC 7816-7 specifies commands for structured card query language.
- ISO/IEC 7816-8 specifies commands for security operations.
- ISO/IEC 7816-9 specifies commands for card management.
- ISO/IEC 7816-11 (this document) specifies personal verification through biometric methods.
- ISO/IEC 7816-13 specifies commands for handling the life cycle of applications.
- ISO/IEC 7816-15 specifies cryptographic information application.

The ISO/IEC 10536 series specifies access by close coupling. The ISO/IEC 14443 series and the ISO/IEC 15693 series specify access by radio frequency. Such cards are also known as "contactless cards".

Identification cards — Integrated circuit cards —

Part 11:

Personal verification through biometric methods

1 Scope

This document specifies security-related interindustry commands that are intended to be used for personal verification through biometric methods in integrated circuit cards. It also defines the data structure and data access methods for use of the card as a carrier of the biometric reference and/or as the device to perform the verification of the cardholder's biometric probe (on-card biometric comparison). Identification of persons using biometric methods is outside the scope of this document.

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

ISO/IEC 24761, *Information technology — Security techniques — Authentication context for biometrics*

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

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 2382-37, ISO/IEC 7816-4, ISO/IEC 24761, and the following apply.

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

- ISO Online browsing platform: available at <https://www.iso.org/obp>
- IEC Electropedia: available at <https://www.electropedia.org/>

3.1

biometric information

information needed by the outside world to construct the biometric probe

3.2

data acquisition

collection or attempt for collection of a signal(s) from a biometric characteristics(s), or a representation of a biometric characteristic(s), and conversion of the signal(s) to an acquired biometric sample set