American National Standard

INCITS/ISO/IEC 7816-11:2017 (2019)

(ISO/IEC 7816-11:2017, IDT)

Identification cards -- Integrated circuit cards -- Part 11: Personal verification through biometric methods

Developed by

incits SM

Where IT all begins

Approved American National Standard

ANSI

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.

Adopted by INCITS (InterNational Committee for Information Technology Standards) as an American National Standard.

Date of ANSI Approval: 11/21/2019

Published by American National Standards Institute,
25 West 43rd Street, New York, New York 10036

INTERNATIONAL **ISO/IEC**

Second edition
2017-12

Identification cards — Integrated circuit cards —

Part 11: Personal verification through biometric methods

Cartes d'identification — Cartes à circuit intégré —

Partie 11: Verification personelle par méthodes biométriques

Reference number
ISO/IEC 7816-11:2017(E)

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

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 ISO documents 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).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO 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).

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 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 the following URL: www.iso.org/iso/foreword.html.

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

This second edition cancels and replaces the first edition (ISO/IEC 7816-11:2004), which has been technically revised. The main change is the addition of specification of PERFORM BIOMETRIC OPERATION command that enables ICCs to treat with various biometric operation flexibly.

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

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 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.

ISO/IEC 10536 (all parts) specifies access by close coupling. ISO/IEC 14443 (all parts) and ISO/IEC 15693 (all parts) specify access by radio frequency. Such cards are also known as contactless cards.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of a patent concerning Authentication Context for Biometrics (ACBio) instance specified in ISO/IEC 24761, given in 6.2.

ISO and IEC take no position concerning the evidence, validity and scope of this patent right.

The holder of this patent right has assured the ISO and IEC that he/she is willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statement of the holder of this patent right is registered with ISO and IEC. Information may be obtained from:

Toshiba Corporation, Toshiba Solutions Corporation, 1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan.

Identification cards — Integrated circuit cards —

Part 11: Personal verification through biometric methods

1 Scope

This document specifies security-related interindustry commands 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 2382-37:2017, *Information technology — Vocabulary — Part 37: Biometrics*

ISO/IEC 7816-4:2013, *Identification cards — Integrated circuit cards — Part 4: Organization, security and commands for interchange*

3 Terms and definitions

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

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

— IEC Electropedia: available at http://www.electropedia.org/

— ISO Online browsing platform: available at http://www.iso.org/obp

3.1
biometric characteristic
biological and behavioural characteristic of an individual from which distinguishing, repeatable *biometric features* (3.5) can be extracted for the purpose of *biometric verification* (3.11)

3.2
biometric comparison
estimation, calculation or measurement of similarity or dissimilarity between *biometric probe* (3.8) and *biometric reference* (3.9)

3.3
biometric data
biometric sample (3.10) or aggregation of biometric samples at any stage of processing

EXAMPLE *Biometric reference* (3.9), *biometric probe* (3.8), *biometric feature* (3.5).