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Identification cards — Integrated circuit cards —

Part 6: Interindustry data elements for interchange

Cartes d'identification — Cartes à circuit intégré —

Partie 6: Éléments de données intersectoriels pour les échanges

Reference number
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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).

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 http://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.

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 fourth edition cancels and replaces the third edition (ISO/IEC 7816-6:2016), which has been technically revised.

The main changes compared to the previous edition are as follows:

— The data format of IC manufacturer ID has been extended from a single byte to multiple bytes.

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

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.

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Introduction

ISO/IEC 7816 is a series of International Standards specifying 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 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 operating procedures for USB cards.

— All the other parts 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.

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.

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Identification cards — Integrated circuit cards —

Part 6: Interindustry data elements for interchange

1 Scope

This document specifies directly or by reference, data elements, including composite data elements that are applicable to interindustry interchange.

It identifies the following characteristics of each data element:

— identifier;

— name;

— description and reference;

— format and coding (if not available in other ISO standards or parts of the ISO/IEC 7816 series).

The layout of each data element is described as seen at the interface between the interface device and the card.

This document provides the definition of data elements without consideration of any restrictions on the usage of the data elements.

It does not cover the internal implementation within the card and/or the outside world. With the exception of login data objects (6.5), only application class tags are eligible in this document.

When using an interindustry template, an application is allowed to nest context-specific class tags (see ISO/IEC 7816-4) under such a template unless it is previously marked as reserved for future use by ISO/IEC JTC 1/SC 17.

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 4909, *Identification cards — Financial transaction cards — Magnetic stripe data content for track 3*

ISO/IEC 7813, *Information technology — Identification cards — Financial transaction cards*

ISO/IEC 10918-1, *Information technology — Digital compression and coding of continuous-tone still images: Requirements and guidelines*

ISO/IEC 11544, *Information technology — Coded representation of picture and audio information — Progressive bi-level image compression*

3 Terms and definitions

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

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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
cardholder
end user of the security device

3.2
data element
item of information seen at the interface for which are defined a name, a description of logical content, a format and a coding

[SOURCE: ISO/IEC 7816-4:2020, 3.15]

3.3
data object
information seen at the interface consisting of the concatenation of a mandatory tag field, a mandatory length field and a conditional value field

[SOURCE: ISO/IEC 7816-4:2020, 3.16]

3.4
template
concatenation of BER-TLV *data objects* (3.3) forming the value field of a constructed BER-TLV data object

Note 1 to entry: The meaning of which is the same when found in 'XY' template, template for 'XY' DOs or 'XY' DOs template

[SOURCE: ISO/IEC 7816-4:2020, 3.59, modified — Note 1 to entry has been added.]

4 Abbreviated terms and notation

a	alphabetic character
n	numeric (binary-coded decimal format)
s	special character
an	alphanumeric character
ans	alphanumeric and special characters
..	denotes a range of values between two numbers
BCD	binary-coded decimal
BER-TLV	basic encoding rules – tag length value

NOTE 1 For BCD several encodings exist, e.g. packed and unpacked. The letter 'n' covers all of them unless specified otherwise.

Any number following the notation denotes the number of digits or characters.

EXAMPLE

— a3 means three alphabetic characters;

— n..100 means up to 100 digits, lower boundary out of scope for this document (possibly zero, one or any number lower or equal to 100);

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