SLOVENSKI STANDARD
SIST EN ISO/IEC 7816-6:1998

01-junij-1998

Identification cards - Integrated circuit(s) cards with contacts - Part 6: Interindustry data elements (ISO/IEC 7816-6:1996)

Identification cards - Integrated circuit(s) cards with contacts - Part 6: Interindustry data elements (ISO/IEC 7816-6:1996)

Identifikationskarten mit integrierten Schaltkreisen und Kontakten - Teil 6: Interindustrielle Datenelemente (ISO/IEC 7816-6:1996)

Cartes d'identification - Cartes à circuit(s) intégré(s) avec contacts - Partie 6: Eléments de données interindustrielles (ISO/IEC 7816-6:1996)

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35.240.15	Identifikacijske kartice in sorodne naprave	Identification cards and related devices

SIST EN ISO/IEC 7816-6:1998 **en**

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This European Standard was approved by CEN on 1997-05-23. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

The European Standards exist in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

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CEN

European Committee for Standardization
Comité Européen de Normalisation
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart,36 B-1050 Brussels

Foreword

The text of the International Standard from Technical Committee ISO/IEC/JTC 1 "Information technology" of the International Organization for Standardization (ISO) and the International Electrotechnical Commission (IEC) has been taken over as an European by Technical Committee CEN/TC 224 "Machine-readable cards, related device interfaces and operations", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 1997, and conflicting national standards shall be withdrawn at the latest by December 1997.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

Endorsement notice

The text of the International Standard ISO/IEC 7816-6:1996 has been approved by CEN as a European Standard without any modification.

INTERNATIONAL STANDARD

ISO/IEC 7816-6

First edition
1996-05-15

Identification cards — Integrated circuit(s) cards with contacts —

Part 6: Interindustry data elements

Cartes d'identification — Cartes à circuit(s) intégré(s) avec contacts —

Partie 6: Éléments de données interindustrielles

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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.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to the national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

International Standard ISO/IEC 7816-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Identification cards and related devices*.

ISO/IEC 7816 consists of the following parts, under the general title *Identification cards — Integrated circuit(s) cards with contacts*:

— *Part 1: Physical characteristics*

— *Part 2: Dimensions and location of the contacts*

— *Part 3: Electronic signals and transmission protocols*

— *Part 4: Interindustry commands for interchange*

— *Part 5: Numbering system and registration procedure for application identifiers*

— *Part 6: Interindustry data elements*

Annex A forms an integral part of this part of ISO/IEC 7816. Annex B is for information only.

Identification cards - Integrated circuit(s) cards with contacts -

Part 6:
Interindustry data elements

1 Scope

This part of ISO/IEC 7816 specifies directly or by reference the Data Elements (DE), including composite DEs, used in interindustry interchange, based on integrated circuit cards (ICCs).

It identifies the following characteristics of each DE:

— Identifier

— Name

— Description and ISO reference

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

The layout of each DE is described as seen at the interface between the interface device (IFD) and the ICC. This part of ISO/IEC 7816 defines the means of retrieval of the DEs in the card (historical bytes, reset, command(s) to perform and commands defined in this international standard).

This part of ISO/IEC 7816 provides the definition of DEs without consideration of any restrictions on the usage of the DEs.

It is intended that new interindustry data objects be incorporated into this standard; see clause 7 for the procedure to be followed.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this part of ISO/IEC 7816. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 7816 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of the IEC and ISO maintain registers of currently valid International Standards.

ISO 639: 1988, *Code for the representation of names of languages.*

ISO/IEC 646: 1991, *Information technology - ISO 7-bit coded character set for information interchange.*

ISO 3166: 1993, *Codes for the representation of names of countries.*

ISO 4217: 1995, *Codes for the representation of currencies and funds.*

ISO 4909: 1987, *Bank cards - Magnetic stripe data content for track 3.*

ISO/IEC 7501-1: 1993, *Identification cards - Machine readable travel documents - Part 1: Machine readable passport.*

ISO/IEC 7813: 1995, *Identification cards - Financial transaction cards.*

ISO/IEC 7816-4: 1995, *Information technology - Identification cards - Integrated circuit(s) cards with contacts - Part 4: Interindustry commands for interchange.*

ISO/IEC 7816-5: 1994, *Identification cards - Integrated circuit(s) cards with contacts - Part 5: Numbering system and registration procedure for application identifiers.*

ISO 8583: 1993, *Financial transaction card originated messages - Interchange message specifications.*

ISO/IEC 8825-1: 1995, *Information technology - ASN.1 encoding rules: Specification of Basic Encoding Rules (BER), Canonical Encoding Rules (CER) and Distinguished Encoding Rules (DER).*

ISO/IEC 8859-1: 1987, *Information processing - 8-bit single-byte coded graphic character sets - Part 1: Latin alphabet No. 1.*

ISO 9992-2:—[1], *Financial transaction cards - Messages between the Integrated Circuit Card and the Card Accepting Device - Part 2: Functions, messages (commands and responses), data elements and structures.*

ISO/IEC 10918-1: 1994, *Information technology - Digital compression and coding of continuous-tone still images: Requirements and guidelines.*

ISO/IEC 11544: 1993, *Information technology - Coded representation of picture and audio information - Progressive bi-level image compression.*

3 Definitions, abbreviations and notations

3.1 Definitions

For the purposes of this part of ISO/IEC 7816, the following definitions apply.

[1] To be published.

3.1.1 composite data element: a data element made up of a concatenation of zero, one or more data element(s).

3.1.2 data element: as defined in ISO/IEC 7816-4.

3.1.3 data object: as defined in ISO/IEC 7816-4.

3.1.4 element list: items of information concerning DEs.

3.1.5 headerlist: a concatenation of tag/length pairs without delimiters.

3.1.6 interindustry data element: data element for use in interindustry interchange.

3.1.7 interindustry data object: data object for use in interindustry interchange.

3.1.8 taglist: a concatenation of tag/length pairs without delimiters.

3.1.9 template: value field of a constructed data object, defined to give a logical grouping of data objects.

3.2 Abbreviations

For the purposes of this part of ISO/IEC 7816, the following abbreviations apply.

ASN.1	Abstract syntax notation one
ATR	Answer-to-reset
DE	Data element
DF	Dedicated file
DO	Data object
EF	Elementary file
FCI	File control information
ICC	Integrated circuit card
IDE	Interindustry data element
IDO	Interindustry data object
LRC	Longitudinal redundancy check
PIN	Personal identification number

3.3 Notations

a	alphabetic character
n	numeric, coded in binary coded decimal format
s	special character
an	alphanumeric character
ans	alphanumeric and special characters
...	between 2 numbers denotes a range of values.

Any number following the notations denotes the number of digits or characters. For example:

a3 means 3 alphabetic characters

n...3 means up to 3 binary coded decimal digits

n2...4 means 2, 3 or 4 binary coded decimal digits

4 Identification of Data Elements

4.1 Principles

The following principles apply to the identification of DEs:

4.1.1 For the purposes of this part of ISO/IEC 7816 a data element is generally presented in the value field of a data object.

4.1.2 For the purposes of this part of ISO/IEC 7816 a data object is a concatenation of the following string of bytes:

— a mandatory tag field, referred to as a tag;

— a mandatory length field indicating a length L;

— a conditional value field of L bytes (when L is not equal to '00').

4.1.3 For purposes of retrieval and referencing in interchange:

— a DE shall be associated with the tag of a DO;

— the DE may be encapsulated in this DO.

4.1.4 The context according to which a DO is identified depends:

— either on the nesting of the DO in a template or;

— on the application currently selected.

4.1.5 When no application is selected all DOs shall be interpreted according to ISO/IEC 7816.

4.1.6 A DE may be referenced directly by its associated tag. It may be associated with another DE which indicates the context to which it belongs.

4.1.7 A DE may be referenced indirectly by one or more command to perform DOs.

4.1.8 The DOs are described as seen at the interface between the ICC and the interface device.

4.1.9 Within ISO/IEC 7816 a tag denotes a type of DE.

4.1.10 There may be multiple occurrences of the same IDO in a card.

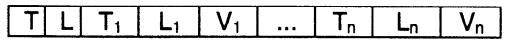
4.2 Data object structure

The following DO structures are supported:

— primitive DO

where T = Tag, L = Length, V = Value

— constructed DO



T = tag of constructed DO

L = length of the string (template) T_1 to V_n

$T_{1...n}$ = tag of a $DO_{1...n}$

$L_{1...n}$ = length of $V_{1...n}$

$V_{1...n}$ = value of a $DO_{1...n}$

4.2.1 Structure of the tag

The tag consists of one or two bytes. The coding of these bytes shall be consistent with the basic encoding rules of ASN.1. Table 1 defines the first byte.

Table 1 - Structure of the first byte of the tag

b8	b7	b6	b5	b4	b3	b2	b1	Meaning
0	0	-	-	-	-	-	-	Not defined in this part of ISO/IEC 7816
0	1	-	-	-	-	-	-	Defined in this part of ISO/IEC 7816. Application class, unambiguous identification
1	0	-	-	-	-	-	-	Defined in this part of ISO/IEC 7816 and only to be used within a template - see note below
1	1	-	-	-	-	-	-	Not defined in this part of ISO/IEC 7816. Reserved for private use
-	-	0	-	-	-	-	-	Primitive DO
-	-	1	-	-	-	-	-	Constructed DO
-	-	-	1	1	1	1	1	Tag number contained in the next byte - range 31..127
-	-	-	x	x	x	x	x	Tag number - range 0..30 Not all equal to 1

NOTE — Context dependent class tags (b8b7=10) are used out of templates for the file control information and secure messaging, see ISO/IEC 7816-4.

The coding of the second byte, when present, is:

b8 = 0

b7 to b1 = binary value of the tag number in the range 31..127

4.2.2 Structure of the length

All lengths are expressed in bytes.

The length consists of one or more bytes. The coding of these bytes shall be consistent with the basic encoding rules of ASN.1 and shall be as defined in table 2.

Table 2 - Coding of the length value

Range	# of bytes	1st byte	2nd byte	3rd byte
0..127	1	binary value	none	none
0..255	2	'81'	binary value	none
0..65,535	3	'82'	binary value ms byte	binary value ls byte
ms = most significant; ls = least significant				

4.2.3 Format of the value

The format of the value depends on the type of the DE.

When the length of the DE is not expressed as a number of bytes, the mapping onto a byte string should be defined in the context of the respective DE (see clause 8). If not specified otherwise, the appropriate number of least significant bits of the last byte shall be set to 1.

4.3 Indirect DE referencing

The following IDOs are used:

— the wrapper, tag '63', constructed as described in 5.6;

— the DO taglist, tag '5C', the value of which is a (concatenation of) tag(s) without delimiter;

— the DO headerlist, tag '5D', the value of which is a concatenation of tag/lengths without delimiter;

— the element list, tag '5F41', only to be used within the wrapper, tag '63';

— the Command to Perform, tag '52', used as defined in ISO/IEC 7816-4;

— the path, tag '51', used as defined in ISO/IEC 7816-4.