INTERNATIONAL STANDARD

ISO/IEC 7816-6

First edition
1996-05-15

AMENDMENT 1
2000-06-15

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

Part 6: Interindustry data elements

AMENDMENT 1: IC manufacturer registration

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

Partie 6: Éléments de données intersectoriels

AMENDEMENT 1: Enregistrement des fabricants de circuits intégrés

Reference number
ISO/IEC 7816-6:1996/Amd.1:2000(E)

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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 3.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1. 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 Amendment may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

Amendment 1 to International Standard ISO/IEC 7816-6:1996 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 17, *Identification cards and related devices*.

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

Part 6: Interindustry data elements

AMENDMENT 1: IC manufacturer registration

Page 4, subclause 4.4

In last line, change "table 8" to "table 10"

Page 8, after subclause 6.9

Add the following text as new subclause 6.10:

6.10 IC manufacturer registration

6.10.1 Scope

This subclause specifies:

— the numbering system,

— the rules for assignment, and

— the assigned values

to identify manufacturers of integrated circuits used in contact and/or contactless integrated circuits cards.

6.10.2 Numbering system

The structure and coding of the IC manufacturer identifier is one byte binary with a reserved value for future extension ('FF' reserved for future extension)

This byte shall be used according to Table 8:

Table 8 — Coding of IC manufacturer identifiers data element

Hexadecimal Value	Use
'00'	RFU
'01' - '7E'	See assignment and registration procedure in 6.10.3 and currently registered identifiers in 6.10.4, Table 9
'7F'	RFU
'80'	RFU
'81' - 'FE'	Proprietary
'FF'	Reserved for future extension

6.10.3 Assignment of IC manufacturer identifiers

The IC manufacturer identifiers (range '01' - '7E') are assigned and registered by the ISO/IEC JTC 1/SC 17 Secretariat [1] according to the following rules:

— the assignment is made upon request by an IC manufacturer or any interested party;

— a single number will be assigned to each manufacturer (next available number);

— a copy of the register shall be made available upon request to the ISO/IEC JTC 1/SC 17 secretariat.

6.10.4 Register of IC manufacturer identifiers

The data object IC manufacturer identifier has the tag '5F4B'. The assigned values for the related data element are shown in Table 9.

Table 9 — Registered IC manufacturers

IC manufacturer identifier	Company	Address
'01'	Motorola	Address: MOS Memory & Microprocessor Division Colvilles Rd Kelvin Industrial Estate East Kilbride Glasgow G75 0TG Country: United Kingdom Telephone: +44 135 556 5731 Fax: +44 135 525 64582
'02'	S T Microelectronics	Address: IC Card Division 7, Ave Galliéni BP 93 94253 GENTILLY Cdx Country: France Telephone: +33 1 4740 7575 Fax: +33 1 4740 7910
'03'	Hitachi, Ltd	Address: Semiconductor & Integrated Circuits Group 20-1, Jousuihon-cho 5 chome Kodaira-shi Tokyo 187-8588 Country Japan Telephone: +81 42 320 7301 (ext 3313) Fax: +81 42 327 8693

[1] Mrs F. Bennett, APACS, Mercury House, Triton Court, 14 Finsbury Square, London EC2 1LQ, UK - email: fjb@apacs.org.uk

Table 9 — Registered IC manufacturers (*continued*)

IC manufacturer identifier	Company	Address
'04'	Philips Semiconductors	Address: Productgroup Identification Stresemannallee 101 D- 22529 Hamburg Country: Germany Telephone: +49 40 5613 2995 Fax: +49 40 5613 3554
'05'	Infineon Technologies AG	Address: Security & Chip Card ICs P.O. Box 80 09 49 D 81609 München Country: Germany Telephone: +49 89 234-24145 Fax: +49 89 234-28925
'06'	Cylinc	Address: Sunnivale, CA Country: USA
'07'	Texas Instrument	Address: Smart Card Division BP 5 06271 Villeneuve Loubet Cdx Country: France Telephone: +33 4 9322 2220 Fax: :+334 9322 2637
'08'	Fujitsu Limited	Address: 1-1, Kamikodanaka 4-Chome nakahara-ku Kawasaki 211-8588 Country: Japan Telephone: +81 44 754 3767 Fax: +81 44 754 3343
'09'	Matsushita Electronics Corporation	Address: 1-1 Saiwai-cho Takasuki Osaka 569-1193 Country: Japan Telephone: +81 726 82 7530 Fax: +81 726 82 7093
'0A'	NEC	Address: 1-10 Nisshin-cho Fuchu-shi Tokyo 183 Country: Japan Telephone: :+81 423 33 1498 Fax: +81 423 33 1856

Table 9 — Registered IC manufacturers (*continued*)

IC manufacturer identifier	Company	Address
'0B'	Oki Electric Industry Co. Ltd	Address: LSI Division 550-1 Higashiasakawa-cho Hachioji-shi Tokyo 193-8550 Country: Japan Telephone: :+81 426 63 1111 Fax: +81 426 65 6536
'0C'	Toshiba Corp.	Address: 1-1, Shibaura 1-Chome Minato-Ku Tokyo 105-8001 Country: Japan Telephone: :+81 3 3457 8412 Fax: +81 3 5444 9218
'0D'	Mitsubishi Electric Corp.	
'0E'	Samsung Electronics Co. Ltd	Address: Smart Card LSI Division San 24 Nongseo-Ri Kiheung-Eup Yongin-City Kyungki-Do Country: Korea Telephone: :+82 331 209 3437 Fax: :+82 331 209 6533
'0F'	Hyundai Electronics Industries Co. Ltd	Address: San 136-1 Ami-ri, Bubal-eub Ichon-si Kyungki-do Country: Korea 467-701 Telephone: +82 336 30 2016 Fax: +82 336 30 2022
'10'	LG-Semiconductors Co. Ltd	Address: 106 138 Bdg. Sinlim-Dong Gwanak-Ku Seoul Country: Korea 151-742 Telephone: +82 2 883 5009 Fax: +82 2 882 0470
'11' to '7E'	For future assignment	

NOTE — This data element may be present in the data object, tag '46' (pre-issuing data), on a proprietary basis.

Page 9, subclause 8.1

Change "Table 8" to "Table 10"

Page 9, Table 8

Change number of Table 8 to Table 10.

Add new line to the table, after 5D Headerlist:

5F4B	IC manufacturer identifier	To identify manufacturers of integrated circuits	1 byte	-

Page 12, subclause 8.2

Change "Table 9" to "Table 11"

Page 12, Table 9

Change number of Table 9 to Table 11.

Add new line to the table, after 5F4A Public key of certification authority:

5F4B	IC manufacturer identifier

ICS 35.240.15

Price based on 5 pages

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TECHNICAL CORRIGENDUM 1
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Identification cards — Integrated circuit(s) cards with contacts —

Part 6:
Interindustry data elements

TECHNICAL CORRIGENDUM 1

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

Partie 6: Éléments de données interindustrielles

RECTIFICATIF TECHNIQUE 1

Technical Corrigendum 1 to International Standard ISO/IEC 7816-6:1996 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology,* Subcommittee SC 17, *Identification cards and related devices.*

Page 2

Subclause 3.1.8

The definition for taglist should read:

"a concatenation of tags without delimiters."

Page 4

Subclause 4.4.1

The sixth paragraph should read:

"If the tag allocation authority is valid for the entire card then the DO may be present in the initial data string or the ATR file (as defined in ISO/IEC 7816-4)."

ICS 35.240.15 **Ref. No. ISO/IEC 7816-6:1996/Cor.1:1998(E)**

Descriptors: data processing, information interchange, identification cards, IC cards, data elements, coding (data conversion), formats.

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Subclause 4.4.2

The fourth paragraph should read:

"If the tag allocation authority is valid for the entire card then the DO shall be present in the initial data string or the ATR file (as defined in ISO/IEC 7816-4)."

Page 6

Subclauses 6.3.2 and 6.3.3

Remove the words *"of the variable length"* from the first lines.

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Contents

Page

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Foreword

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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

T	L	V

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

— constructed DO

T	L	T_1	L_1	V_1	...	T_n	L_n	V_n

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.

4.4 Tag allocation schemes

ISO/IEC 7816-6 allocates some ASN.1-BER application class tags (context independent) as indicated in table 1. The default tag allocation scheme for IDOs in an ICC is defined in this part of ISO/IEC 7816 (see table 8).

4.4.1 Compatible tag allocation schemes

These tag allocation schemes use IDOs as defined in ISO/IEC 7816, and further DOs which

— either shall use context-dependent class tags (starting with 8 ,9, A, B) within templates defined in this part of ISO/IEC 7816 (templates '65', '66', '67', '6E');

— or shall be nested within templates with tags in the range '70' to '77'. Within these templates the meaning of application class tags is not defined in ISO/IEC 7816 except for the tags defined in table 4.

In order to identify a compatible tag allocation scheme and the authority responsible for the scheme, a Tag Allocation Authority DO with a tag of '78' (defined in 4.4.4) may be used.

If the tag allocation authority is only valid for data within a DF, then the FCI of the DF may contain the Tag Allocation Authority DO.

If the tag allocation authority is valid for the entire card then the DO may be present in the initial data string of the ATR file (as defined in ISO/IEC 7816-4).

An IDO listed in 4.4.4 may be included in the templates '70' to '77' indicating the authority responsible for the allocation of tags used in that template.

NOTE — the use of these schemes is either implicit (use of context dependent tags) or explicit (presence of the IDO with tag '78').

4.4.2 Coexistent tag allocation schemes

For these tag allocation schemes, DOs may use tags with another interpretation than ISO/IEC 7816.

In order to identify a coexistent tag allocation scheme, a Tag Allocation Authority DO with a tag of '79' (defined in 4.4.4) identifying the authority responsible for the scheme shall be used.

If the tag allocation authority is only valid for data within a DF then the FCI of the DF shall contain the Tag Allocation Authority DO.

If the tag allocation authority is valid for the entire card then the DO shall be present in the initial data string of the ATR file (as defined in ISO/IEC 7816-4).

All IDOs shall be nested within templates, tag '7E'. In such a scheme tags '79' and '7E' shall not be given another interpretation.

Besides '79' and '7E' the tags in table 3, defined in ISO/IEC 7816, shall not be reallocated by a coexistent tag allocation scheme:

Table 3 - Tags reserved for ISO/IEC

Tag	IDO
62	denotes file control parameters (FCP) template, as defined in ISO/IEC 7816-4
64	denotes file management data (FMD) template, as defined in ISO/IEC 7816-4
6F	denotes FCI template, as defined in ISO/IEC 7816-4
7D	reserved for secure messaging template of ISO/IEC 7816

4.4.3 Independent tag allocation schemes

For these tag allocation schemes DOs may use tags with another interpretation than ISO/IEC 7816, but which do not comply with 4.4.2. Such tag allocation schemes do not allow interindustry interchange and are not in compliance with ISO/IEC 7816-6.

A consistent use of the IDOs discretionary data, tag '53' and discretionary DOs, tag '73', allows the use of proprietary objects whilst remaining compliant to ISO/IEC 7816-6.

4.4.4 Tag allocation authority

Within templates '78' or '79' the IDOs shown in table 4 indicate which authority is responsible for tag allocation:

Table 4 - Tags for allocation of authorities

Tag	IDO
06	object identifier, as defined in ISO/IEC 8825, see example of coding in Annex B
41	defined in ISO/IEC 7816-4 and used to indicate at least a country
42	defined in ISO/IEC 7816-4 and used to indicate an issuer
4F	indicates an Application Identifier (AID), as defined in ISO/IEC 7816-5.

5 Retrieval of data

This clause defines standard retrieval procedures of DEs.

5.1 Principles

Before selecting an application, IDOs should be retrieved directly or indirectly from :

— the historical bytes;

— the initial data string;

— the ATR file;

— the Directory file (DIR file)

in the above order, when present.

These IDOs shall be interpreted according to clause 4.

Once an application is selected, IDOs should be retrieved directly or indirectly from:

— the FCI of the DF;

— other specific Elementary Files (EFs) within the current DF.

In this case these IDOs may also be retrieved by use of GET DATA command(s).

5.2 Retrieval of DOs after ATR

If indicated in the Historical Bytes, DOs may be retrieved after reset and possible Protocol Type Selection (PTS) by the use of the initial access data, according to ISO/IEC 7816-4.

All these DOs shall have tags complying with 4.4.

5.3 Retrieval of data in files

DOs may be retrieved in reserved files (DIR file and ATR file). This may be indicated in the historical bytes. Selection and reading of these files is defined in ISO/IEC 7816-4. The content of the DIR file is defined in ISO/IEC 7816-5. Information on the content of the ATR file is given in ISO/IEC 7816-4. All these DOs shall have tags defined by ISO/IEC 7816.

DEs may be retrieved in other files denoted by their path in a wrapper DE (see 5.6). Selection and reading of an EF known by its path is defined in ISO/IEC 7816-4.

5.4 Retrieval of data in FCI

Data may be present in the FCI according to ISO/IEC 7816-4.

5.5 Retrieval of data using the GET DATA command

DOs may be retrieved by use of the GET DATA command as defined in ISO/IEC 7816-4.

5.6 Indirect retrieval of DEs

For indirect referencing the wrapper DO is used. The wrapper DO has the tag '63', is constructed and shall consist of two parts:

the first part contains either

— the IDO taglist, tag '5C', denoting that the DEs to be retrieved are presented as DOs or;

— the IDO headerlist, tag '5D', denoting that the DEs to be retrieved are presented as a string of values, in the same order as in the taglist;

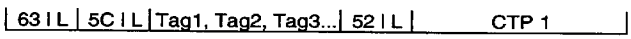
— the IDO element list, tag '5F41', denoting that the elements to be retrieved are not presented as DOs, but under application control. The structure of the element list as well as the information returned are outside the scope of ISO/IEC 7816.

the second part contains

— a path to an EF, tag '51';

— and/or one (or more) 'command to perform' DOs, tag '52', as defined in ISO/IEC 7816-5.

The following diagram is an example of a wrapper containing a taglist and one 'command to perform':



Only one indirect reference shall be given in a wrapper. There may be more than one wrapper.

A DO referenced according to ISO/IEC 7816 in the tag list, or a DE referenced another way in the DE list, shall be either

— contained in a file denoted by its path, see 5.3 for the retrieval or

— be (part of) the response to the last 'command to perform' indicated in the wrapper. The commands shall be executed in the order presented.

6 Coding of specific DEs

6.1 IDO 5B Name (of an individual)

A composite DE of variable length up to 39 characters, made up of:

— Surname (family name);

— Given name(s) (forename(s));

— Name suffix (e.g. Jr, number...);

— Filler(s)

as defined and used in ISO/IEC 7501-1. They shall be coded according to ISO/IEC 8859-1.

National languages with non-Latin characters shall be transliterated or transcribed into the Latin alphabet using the appropriate ISO standard.

In cases where:

— names cannot be shown in full;

— or a special alphabet is needed;

— or the transliteration or transcription is not sufficient

the IDO "qualified name" should be used.

6.2 IDO 6B Qualified name

A constructed DO of variable length, made up of:

— one or several object identifiers, tag '06', referring to the standards defining the presentation of the qualified name;

— a name tag '80' (primitive) or 'A0' (constructed), the value and coding of which is defined by the aforementioned standards;

— other related optional information, (e.g. sex, nationality, place of birth).

6.3 IDO 6A Log-in template

A log-in template is a constructed object of variable length. The value shall consist of one or more primitive objects such as qualifiers, numbers, text and times, as specified hereafter.

6.3.1 Qualifier

The tag shall be '80'. The value (1 to 9 bytes) shall consist of a mandatory first byte coding a rank followed by, at most, 8 optional bytes coding a mnemonic. This shall qualify the subsequent objects in a template, until the next qualifier, if any.

The rank is an integer valued from 0 to 255. If two or more qualifiers have the same rank within the same context, then only the set of objects qualified by the most recent one is valid.

The mnemonic is a string of 7-bit characters (b8 set to 0, see ISO/IEC 646) to be displayed at the man-machine interface.

6.3.2 Number

The tag shall be '81'. The value of the variable length shall consist of an even number of nibbles where each nibble codes one character for representing a telephone number, according to table 5.

Table 5 - Nibble decoding

Nibble	Character	Meaning
'0' to '9'	0 to 9	Decimal digits
'A'	(	Opening bracket
'B'	)	Closing bracket
'C'	C	Requirement for connecting to the line before continuing
'D'	+	Introduction of an international telephone number
'E'	-	If first, introduction of a number to be used without prefix; if not first, requirement for a delay (2 seconds) before continuing
'F'		Reserved for padding

6.3.3 Text

The tag shall be '82'. The value of the variable length shall consist of one or more bytes where each byte codes one character. The bit b8 sets the difference between data characters (b8 set to 0) and control characters (b8 set to 1). The string of bytes consists of one or more strings of data characters (7-bit character, see ISO/IEC 646) separated by strings of control characters. The following control characters are defined:

— '80' A message has to be received before sending the next character;

— 'C0' A modulation has to be present before sending the next character;

— '8X' X characters have to be received in echo before waiting for a message.

6.3.4 Time for end of message detection

The tag shall be '83'. The value shall consist of a single byte coding a time according to table 6. That time shall be used for detecting an end of message. The default value shall be 2 seconds.

6.3.5 Time for start of message detection

The tag shall be '84'. The value shall consist of a single byte coding a time according to table 6. That time shall be used for detecting an absence of response. The default value shall be 60 seconds.

Table 6 - Time decoding

b8	b7	b6	b5	b4	b3	b2	b1
⇐ RFU ⇒		⇐ Unit of ⇒⇐			Number of units		

⇒

Time

b8-b7 Reserved for future use (RFU)
(00 when not used)

b6-b5 Value of the unit of time
00 = 100 ms
01 = 1 second
10 = 10 seconds
11 = 100 seconds

b4-b1 Number of units

Moreover log-in data may be present with proprietary structures not specified by this International Standard. The tag '5E' is reserved for nesting such proprietary log-in data.

6.4 IDO 5F2F Coding of the PIN usage policy

The PIN usage policy DE consists of 2 bytes which indicate the tests to be performed by the terminal in order to determine whether a PIN is applicable to the current transaction, and, therefore, whether the terminal should prompt for the PIN to be entered. Bit 8 of the first byte, if set to 1, specifies that a PIN applies to this application and the terminal should prompt for the PIN. The meaning of the other 15 bits is application dependent. If all bits are set to 0, then the terminal should not prompt for the PIN.

If bit 8 of the first byte is on or if any of the tests performed indicate that a PIN applies, but the PIN cannot be presented, the action to be taken is application dependent.

6.5 IDO 6C Cardholder images

This constructed IDO contains at least one IDO as defined in this clause. An authority indicator (see 4.4.4) may precede such an IDO identifying the authority responsible for the data format of the IDO.

6.5.1 IDO 5F2E Cardholder biometric data

This IDO contains biometric data relating to the cardholder. Biometric data is designed to provide a means of verifying the claimed identity of the person presenting the card. Examples of biometric data are finger prints, palm prints, voice prints, dynamic signatures etc.

6.5.2 IDO 5F40 Cardholder portrait image

The format of the cardholder portrait image shall be as defined in ISO/IEC 10918-1, unless otherwise specified and/or requested by an authority.

6.5.3 IDO 5F43 Cardholder handwritten signature image

The format of the cardholder handwritten signature image shall be as defined in ISO/IEC 11544, unless otherwise specified and/or requested by an authority.

NOTE — It is recommended that the use of this IDO should be associated with appropriate security measures.

6.6 IDO 6D Application image template

This IDO contains at least an application image, tag 5F44. It may also contain an authority indicator (see 4.4.4) identifying the body responsible for the data format of the application image. When no authority is present the format shall be as defined in ISO/IEC 10918-1.

6.7 Magnetic stripe data

Tags '5F21', '5F22' and '5F23' are defined to be the card track 1, track 2 and track 3 DOs respectively. These tags shall be used when the data content of these DOs are identical to the data content of the corresponding tracks on the magnetic stripe of the card.

Tags '56', '57' and '58' are defined to be the application track 1, track 2 and track 3 DOs. These tags shall be used when the data format is as defined in ISO/IEC 7813 and ISO 4909 but the content may differ from that contained on the magnetic stripe of the card.

6.8 IDO 7F20 Display control

One or more IDOs may be contained in this template. The value of any IDO contained in this template, either directly or indirectly through constructed DOs, is not intended to be displayed and should only be used, when relevant, for processing of transmission.

6.9 Interchange profile

The specification of IDOs associated with the interchange profile of an ICC (eg available security functions and authentication methods) may be further detailed in future parts of ISO/IEC 7816.

The tags shown in table 7 are reserved for this purpose:

Table 7 - tags reserved for interchange profile

TAG	IDO
5F29	Interchange Profile
5F37	Static internal authentication (one-step)
5F38	Static internal authentication - first associated data
5F39	Static internal authentication - second associated data
5F3A	Dynamic internal authentication
5F3B	Dynamic external authentication
5F3C	Dynamic mutual authentication

7 Maintenance of the IDOs

It is the intention that all IDOs should be listed in clause 8 of this part of ISO/IEC 7816. To allow the introduction, deletion or amendment of any IDOs the following procedures shall be adopted:

7.1 IDOs from other parts of ISO/IEC 7816

If new IDOs are introduced by new parts of ISO/IEC 7816 then these IDOs will be approved by the normal balloting process. Following publication of the new part of the standard the IDOs will be incorporated into ISO/IEC 7816-6 without further ballot.

7.2 IDOs from other standards

For these IDOs an amendment or addendum to ISO/IEC 7816-6 will be required and this will be subject to the normal ISO voting procedures. Following successful ballot the IDOs will be incorporated into ISO/IEC 7816-6.

8 List of interindustry data objects

8.1 Data objects in alphabetic order

Table 8 gives the list of interindustry DOs (in alphabetic order), with description, ISO reference and length and format where appropriate.

Table 8 - IDOs in alphabetic order

Tag	Name of Data Element	Description & ISO Reference	Length / Format	May be found within template
5F42	Address	Address of an individual	variable	65
5F25	Application effective date	Date from which the application can be used, under the responsibility of the Application Provider	n 6 YYMMDD	6E
5F24	Application expiration date	Date after which an application expires	n 6 YYMMDD	6E
4F	Application identifier	A DE which identifies an application in a card (see ISO/IEC 7816-5)	variable	61/6E
5F44	Application image	Image data for an icon or logo associated with an application (see ISO/IEC 10918-1)	variable	6D
6D	Application image template	Template containing at least an application image (see ISO/IEC 10918-1)	variable	6E
50	Application label	A DE for use at the man machine interface (see ISO/IEC 7816-5)	variable	61/6E
47	Card capabilities	As defined in ISO/IEC 7816-4	variable	66
5F26	Card effective date	Date, from which the card can be used, under the responsibility of the Card Issuer	n 6 YYMMDD	66
59	Card expiration date	Date after which the card expires	n 4 YYMM	66
45	Card issuer's data	As defined in ISO/IEC 7816-4	variable	66
5F34	Card sequence number	A number distinguishing between separate cards with the same Primary Account Number	n 2	66
43	Card services data	As defined in ISO/IEC 7816-4	1 byte	-
5F2E	Cardholder biometric data	Biometric data relating to the cardholder	variable	65
7F21	Cardholder certificate	A constructed DO containing the public key of the cardholder, further information, signature of certification authority	variable	65
5F43	Cardholder handwritten signature image	An image of the cardholder's signature (see ISO/IEC 11544)	variable	6C
6C	Cardholder image template	Cardholder related images stored within the ICC	variable	65
5F20	Cardholder name	To indicate the name of the cardholder (see ISO/IEC 7813)	n 2..26	65
5F2C	Cardholder nationality	To indicate the nationality of the cardholder. See ISO 3166 for coding	n 3	65
5F40	Cardholder portrait image	Encoded image data, used for the cardholder portrait image	n 1	6C
5F49	Cardholder public key	A DE containing the cardholder's public key for digital signature functionality using asymetric mechanisms	variable	65
5F48	Cardholder secret key	A DE containing the cardholder's secret key for digital signature functionality using asymetric mechanisms	variable	65
79	Coexistent Tag Allocation Authority	Used to identify a coexistent tag allocation scheme and the authority responsible for the scheme	variable	-
52	Command to perform	Command APDU (see ISO/IEC 7816-4)	variable	61
78	Compatible Tag Allocation Authority	Used to identify a compatible tag allocation scheme and the authority responsible for the scheme	variable	-
41	Country Authority	See 4.4.4	variable	-
5F28	Country code	Code for the representation of Name of Country (see ISO 3166)	n 3	66
5F2A	Currency code	Code for the representation of currencies and funds (see ISO 4217). Length will be 2 bytes if numeric format; 3 bytes if alphabetic format	a 3 or n 3	6E
5F36	Currency exponent	Codes a number by which an amount of the currency indicated in the card shall be multiplied (see ISO 4217)	n 1	6E
5F2B	Date of birth	Date of birth of related individual	n 8 YYYYMMDD	65
53	Discretionary data	Provides a standard way to denote a DE not defined in ISO/IEC 7816. Its use within the file control information and the application template is defined in parts 4 and 5 of ISO/IEC 7816. Clause 5 of this part ISO/IEC 7816 covers all the cases where this IDO can be retrieved	variable	all templates defined in Annex A

Table 8 (continued)

Tag	Name of Data Element	Description & ISO Reference	Length / Format	May be found within template
73	Discretionary DOs	Provides a standard way to denote a concatenation of DOs not defined in ISO/IEC 7816. Its use within the file control information and the application template is defined in parts 4 and 5 of ISO/IEC 7816. Clause 5 of this part ISO/IEC 7816 covers all the cases where this IDO can be retrieved	variable	all templates defined in Annex A
7F20	Display control	Template used to control data displayed at the terminal	variable	66
5F45	Display message	A DE containing a message to be displayed	variable	66
5F3B	Dynamic external authentication	A composite DO used for identifying the algorithm and the key to be used in the EXTERNAL AUTHENTICATE command	to be defined	67
5F3A	Dynamic internal authentication	A composite DO used for identifying the algorithm and the key to be used in the INTERNAL AUTHENTICATE command	to be defined	67
5F3C	Dynamic mutual authentication	A composite DO used for identifying the algorithm and the key to be used in the mutual authentication process (see ISO 9798-2, 9798-3)	to be defined	67
5F41	Element list	A sequence of elements and related information, without identifiers (see 4.3)	variable	-
6F	FCI template	See 4.4.2	variable	-
62	FCP template	See 4.4.2	variable	-
64	FMD template	See 4.4.2	variable	-
5D	Headerlist	A concatenation of tag/length pairs without delimiter	variable	-
44	Initial access data	As defined in ISO/IEC 7816-4	variable	66
5F27	Interchange Control	To be used in association with a country code to indicate whether international interchange is permitted on a card (see ISO 4909)	n 1	66
5F29	Interchange profile	A DE describing capabilities available in the ICC to perform an interchange transaction	to be defined	67
42	Issuer Authority	See 4.4.4	variable	-
5F2D	Language preferences	To indicate, in order of preference, up to 4 languages for the cardholder (see ISO 639)	a 2..a 8	65
5E	Log-in data (Proprietary)	Proprietary information intended for connecting the interface device to a remote host, a remote server or an application within these devices	variable	6E
6A	Log-in template	Data intended for connecting the interface device to a remote host, a remote server or an application within these devices (see 6.3)	variable	6E
5F47	Message reference	A DE specifying the reference of a message	variable	66
5B	Name	Name of an individual (see 6.1)	variable	65
06	Object Identifier	As defined in ISO/IEC 8825-1 (see Annex B for coding)	variable	-
51	Path	As defined in ISO/IEC 7816-4	variable	61
5F2F	PIN usage policy	To specify whether PIN entry is required and under what circumstances (see 6.4)	2 bytes	6E
46	Pre-issuing data	Proprietary	variable	66
5A	Primary Account Number (PAN)	A series of digits used to identify a customer account or relationship (see ISO/IEC 7813 for structure and ISO 8583 for coding)	n..19	6E
5F4A	Public key of certification authority	A DE containing the certification authority's public key for digital signature functionality used to verify certificate	variable	65
6B	Qualified name	Name and related information of an individual e.g. sex, date of birth etc (see 6.2)	variable	65
7D	Secure messaging template	See 4.4.2	variable	-
5F30	Service code	An identification of geographic / service availability (see ISO/IEC 7813 for structure and ISO 8583 for coding)	n 3	6E
5F35	Sex	Gender of an individual (see ISO 5218)	1 byte	65
68	Special user requirements	This constructed DO contains at least a DO denoting a responsible authority (see 4.4.4) and a DO by which this authority indicates the requirements of an user, possibly related to a disability	variable	65
5F37	Static internal authentication (one-step)	A DE containing a digital signature value which may be used either alone or in conjunction with the DEs tag '5F38' and tag '5F39'	to be defined	67
5F38	Static internal authentication - first associated data	A public key certificate DE to be used either alone or in conjunction with the DE tag '5F39', to enable a public key value to be derived	to be defined	67
5F39	Static internal authentication - second associated data	Data auxiliary to the public key certificate, tag '5F38', used to derive the notarised public key	to be defined	67
48	Status information	As defined in ISO/IEC 7816-4	1..3 bytes	-

Table 8 (concluded)

Tag	Name of Data Element	Description & ISO Reference	Length / Format	May be found within template
5C	Taglist	A concatenation of tags without delimiters	variable	-
5F46	Timer	A DE specifying the maximal time, in tenths of a second, for a process to be performed or executed	2 bytes, binary coded. 2nd byte is least significant	66
56	Track 1 (application)	Information encoded as defined in ISO/IEC 7813, including field separators but excluding start and end sentinels and LRC characters as defined therein (see ISO/IEC 7813 for structure and ISO 8583 for coding)	ans..76	6E
5F21	Track 1 (card)	The information encoded on Track 1 of the magnetic stripe as defined in ISO/IEC 7813, including field separators but excluding start and end sentinels and LRC characters as defined therein. The data content is the same as the magnetic stripe, including discretionary data (see ISO/IEC 7813 for structure and ISO 8583 for coding)	ans..76	66
57	Track 2 (application)	Information encoded as defined in ISO/IEC 7813, including field separators but excluding start and end sentinels and LRC characters as defined therein (see ISO/IEC 7813 for structure and ISO 8583 for coding)	n..37	6E
5F22	Track 2 (card)	The information encoded on Track 2 of the magnetic stripe as defined in ISO/IEC 7813, including field separators but excluding start and end sentinels and LRC characters as defined therein. The data content is the same as the magnetic stripe, including discretionary data (see ISO/IEC 7813 for structure and ISO 8583 for coding)	n..37	66
58	Track 3 (application)	Information encoded as defined in ISO 4909, including field separators but excluding start and end sentinels and LRC characters as defined therein (see ISO 4909 for structure and ISO 8583 for coding)	n..104	6E
5F23	Track 3 (card)	The information encoded on Track 3 of the magnetic stripe as defined in ISO 4909, including field separators but excluding start and end sentinels and LRC characters as defined therein. The data content is the same as the magnetic stripe, including discretionary data (see ISO 4909 for structure and ISO 8583 for coding)	n..104	66
5F32	Transaction counter	A counter incremented under the control of the application in the card after each transaction	Binary Variable	6E
5F33	Transaction date	Used to recognise the date and time of the last transaction. Length is 4 for YDDD; 10 for full field	n 4 or n10 YDDD(HHMM SS)	6E
63	Wrapper	Used for indirect referencing and retrieval (see 4.3)	variable	-

8.2 Data objects in numeric order

Table 9 gives the tags and names of DOs in numeric order.

Table 9 - IDOs in numerical order

Tag	Name of Data Element
06	Object Identifier
41	Country Authority
42	Issuer Authority
43	Card services data
44	Initial access data
45	Card issuer's data
46	Pre-issuing data
47	Card capabilities
48	Status information
4F	Application identifier
50	Application label
51	Path
52	Command to perform
53	Discretionary data
56	Track 1 (application)
57	Track 2 (application)
58	Track 3 (application)
59	Card expiration date
5A	Primary Account Number (PAN)
5B	Name
5C	Taglist
5D	Headerlist
5E	Log-in data (Proprietary)
5F20	Cardholder name
5F21	Track 1 (card)
5F22	Track 2 (card)
5F23	Track 3 (card)
5F24	Application expiration date
5F25	Application effective date
5F26	Card effective date
5F27	Interchange Control
5F28	Country code
5F29	Interchange profile
5F2A	Currency code
5F2B	Date of birth
5F2C	Cardholder nationality
5F2D	Language preferences
5F2E	Cardholder biometric data
5F2F	PIN usage policy
5F30	Service code
5F32	Transaction counter
5F33	Transaction date
5F34	Card sequence number
5F35	Sex
5F36	Currency exponent
5F37	Static internal authentication (one-step)
5F38	Static internal authentication - first associated data
5F39	Static internal authentication - second associated data
5F3A	Dynamic internal authentication
5F3B	Dynamic external authentication
5F3C	Dynamic mutual authentication
5F40	Cardholder portrait image
5F41	Element list
5F42	Address
5F43	Cardholder handwritten signature image
5F44	Application image
5F45	Display message
5F46	Timer
5F47	Message reference
5F48	Cardholder secret key
5F49	Cardholder public key
5F4A	Public key of certification authority
62	FCP template
63	Wrapper
64	FMD template
68	Special user requirements
6A	Log-in template
6B	Qualified name
6C	Cardholder image template
6D	Application image template
6F	FCI template
73	Discretionary DOs
78	Compatible Tag Allocation Authority
79	Coexistent Tag Allocation Authority
7D	Secure messaging template
7F20	Display control
7F21	Cardholder certificate

Annex A
(normative)
Interindustry templates

The following optional templates should be used when there is a need to group IDOs within templates. Compatible and coexistent tag allocation schemes may use further templates (see 4.4). The order of the templates and the order of the IDOs within the templates is not significant.

Table A.1 - Application Template - Tag '61'

TAG	Length / Format	Data Element
4F	variable	Application Identifier (AID)
50	variable	Application label
52	variable	Command to perform
53	variable	Discretionary data
73	variable	Discretionary DOs
51	variable	Path

Table A.2 - Cardholder Related Data - Tag '65'

TAG	Length / Format	Data Element
5F42	variable	Address
5F2E	variable	Cardholder biometric data
7F21	variable	Cardholder certificate
6C	variable	Cardholder images
5F20	variable	Cardholder name
5F2C	n 3	Cardholder nationality
5F40	variable	Cardholder portrait image
5F49	variable	Cardholder public key
5F48	variable	Cardholder secret key
5F2B	n 8 YYYYMMDD	Date of birth
53	variable	Discretionary data
73	variable	Discretionary DOs
5F2D	a 2..a 8	Language preferences
5B	variable	Name
5F4A	variable	Public key of certification authority
6B	variable	Qualified name
5F35	a 1	Sex
68	variable	Special user requirements

Table A.3 - Card Data - Tag '66'

TAG	Length / Format	Data Element
47	variable	Card capabilities
5F26	n 6 YYMMDD	Card effective date
59	n 4 YYMM	Card expiration date
45	variable	Card issuer's data
5F34	n 2	Card sequence number
5F28	n 3	Country code
53	variable	Discretionary data
73	variable	Discretionary DOs
7F20	variable	Display control
5F45	variable	Display message
44	variable	Initial access data
5F27	n 1	Interchange control
5F47	variable	Message reference
46	variable	Pre-issuing data
5F46	2 bytes, binary coded	Timer
5F21	ans..76	Track 1 (card)
5F22	n..37	Track 2 (card)
5F23	n..104	Track 3 (card)

Table A.4 - Authentication Data - Tag '67'

TAG	Length / Format	Data Element
53	variable	Discretionary data
73	variable	Discretionary DOs
5F3B	to be defined	Dynamic external authentication
5F3A	to be defined	Dynamic internal authentication
5F3C	to be defined	Dynamic mutual authentication
5F29	to be defined	Interchange Profile
5F37	to be defined	Static internal authentication (one-step)
5F38	to be defined	Static internal authentication - first associated data
5F39	to be defined	Static internal authentication - second associated data

Table A.5 - Application Related Data - Tag '6E'

TAG	Length / Format	Data Element
5F25	n 6 YYMMDD	Application effective date
5F24	n 6 YYMMDD	Application expiration date
4F	variable	Application identifier
6D	variable	Application image template
50	variable	Application label
5F2A	a 3 or n 3	Currency code
5F36	n 1	Currency exponent
53	variable	Discretionary data
73	variable	Discretionary DOs
5E	variable	Log-in data (proprietary)
6A	variable	Log-in template
5F2F	2 bytes	PIN usage policy
5A	n..19	Primary Account Number (PAN)
5F30	n 3	Service code
56	ans..76	Track 1 (application)
57	n..37	Track 2 (application)
58	n..104	Track 3 (application)
5F32	binary variable	Transaction counter
5F33	n 4 or n 10 YDDD(HHMMSS)	Transaction date

Annex B
(informative)
Examples of coding

The purpose of this annex is to provide examples of various codings, within various tag allocation schemes. The various DOs are numbered, thus DO1, DO2, DO3...

The bytes are coded in hexadecimal, space as separator. Parentheses enclose DOs within templates for clarity, and are not significant. Undefined bytes are represented by XX.

B.1 Object identifier denoting an ISO standard

This coding is defined in ISO/IEC 8825-1. The tag is '06'. The first byte of the value is '28', (40 decimal). This byte is followed by one or several series of bytes, identified by the fact that b8=0 in the last byte of a series, 1 in other bytes. Bits b7 to b1 of the bytes of a series code a binary number. The first number is the number of the standard, the second, if present, is the part in a multi-part standard.

For standard ISO 9992-2, the first series is obtained thus :

— 9992 is '2708'

— the binary value is 0010 0111 0000 1000

— the binary value is also 100 1110 000 1000

— After insertion of the appropriate value bit b8 in each byte, the binary coding of the first series is therefore 1100 1110 0000 1000, equal to 'CE08'

The second series is '02', because the part number is smaller than 128.

The DO is therefore 06 04 28 CE 08 02.

B.2 Default tag allocation scheme

DO1 = 59 02 95 02

DO2 = 5F 24 03 97 03 31

DO1 indicates a card expiry date of February 1995.

DO2 indicates an application expiry date of March 31st 1997.

B.3 Compatible tag allocation scheme defined in ISO 9992-2

DO1 = 78 06 (06 04 28 CE 08 02)

DO2 = 5F 24 03 97 03 31

DO3 = 70 04 (80 02 XX XX)

DO4 = 67 0A (5F 29 03 XX XX XX) (81 02 XX XX)

DO1 indicates a compatible tag allocation scheme, defined by ISO 9992-2, denoted by its object identifier. This IDO must appear in the initial data string, the ATR file or the FCI of a DF.

DO2 indicates an application expiry date of March 31st 1997.

DO3 contains a DO, tag '80', defined in ISO 9992-2 ; the meaning of tag '70' is also defined in ISO 9992-2.

DO4 contains the IDO interchange profile, tag '5F29' and a DO, tag '81', defined in ISO 9992-2 ; the meaning of tag '67' is defined in ISO/IEC 7816-6.

B.4 Other example of a compatible tag allocation scheme defined in ISO 9992-2

DO2 = 5F 24 03 97 03 31

DO3 = 70 0C (06 04 28 CE 08 02)(80 04 XX XX XX XX)

DO4 = 67 06 (5F 29 03 XX XX XX)

DO2 indicates an application expiry date of March 31st 1997.

DO3 contains a DO, tag '06' which specifies that the subsequent DO, tag '80', is defined in ISO 9992-2. The meaning of tag '70' is also defined in ISO 9992-2.

DO4 contains the IDO interchange profile, tag '5F29'. Note that it cannot contain DOs, defined in ISO 9992-2, because of the choice not to transmit the IDO with tag '78'.

B.5 Coexistent tag allocation scheme defined in an ISO standard

DO1 = 79 05 (06 03 28 XX XX)

DO2 = 7E 06 (5F 24 03 97 03 31)

DO3 = 70 06 XX XX XX XX XX XX

DO1 indicates a coexistent tag allocation scheme, defined in an ISO standard, denoted by an object identifier of value starting with '28'. DO1 is mandatory in this case. This IDO must appear either in the initial data string, the ATR file or the FCI of a DF.

DO2 indicates an application expiry date of March 31st 1997. Note that the IDO application expiration date, tag '5F24' is nested.

DO3 can only be interpreted according to the standard indicated in the object identifier.

ICS 35.240.40

Descriptors: data processing, information interchange, identification cards, IC cards, data elements, coding (data conversion), formats.

Price based on 16 pages