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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
ISO/IEC 7816-6:2004(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. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. 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 document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC 7816-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Identification cards*, Subcommittee SC 17, *Cards and personal identification*.

This second edition, together with the second editions of parts 4, 5, 8 and 9, after an in-depth reorganization of these five parts, cancels and replaces:

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

— ISO/IEC 7816-4:1995/Amd.1:1997, *Information technology — Identification cards — Integrated circuit(s) cards with contacts — Part 4: Interindustry commands for interchange — Amendment 1: Impact of secure messaging on the structure of APDU messages*

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

— ISO/IEC 7816-5:1994/Amd.1:1996, *Identification cards — Integrated circuit(s) cards with contacts — Part 5: Numbering system and registration procedure for application identifiers — Amendment 1*

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

— ISO/IEC 7816-6:1996/Cor.1:1998, *Identification cards — Integrated circuit(s) cards with contacts — Part 6: Interindustry data elements — Technical corrigendum 1*

— ISO/IEC 7816-6:1996/Amd.1:2000, *Identification cards — Integrated circuit(s) cards with contacts — Part 6: Interindustry data elements — Amendment 1: IC manufacturer registration*

— ISO/IEC 7816-8:1999, *Identification cards — Integrated circuit(s) cards with contacts — Part 8: Security-related interindustry commands*

— ISO/IEC 7816-9:2000, *Identification cards — Integrated circuit(s) cards with contacts — Part 9: Additional interindustry commands and security attributes*

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

— *Part 1: Cards with contacts — Physical characteristics*

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

— *Part 3: Cards with contacts — Electrical interface and transmission protocols*

— *Part 4: Organization, security and commands for interchange*

— *Part 5: Registration of application providers*

— *Part 6: Interindustry data elements for interchange*

— *Part 7: Interindustry Commands for Structured Card Query Language (SCQL)*

— *Part 8: Commands for security operations*

— *Part 9: Commands for card management*

— *Part 10: Cards with contacts — Electrical interface for synchronous cards*

— *Part 11: Personal verification through biometric methods*

— *Part 15: Cryptographic information application*

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Introduction

ISO/IEC 7816 is a series of 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 7816-15 specifies cryptographic information application.

ISO/IEC 10536[14] specifies access by close coupling. ISO/IEC 14443[17] and ISO/IEC 15693[18] 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 may be used in 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 International Standards or parts of ISO/IEC 7816).

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.

2 Normative references

The following referenced documents are indispensable for the application 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 7816 (all parts), *Identification cards — Integrated circuit cards*

3 Terms and definitions

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

3.1
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
[ISO/IEC 7816-4]

3.2
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
[ISO/IEC 7816-4]

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3.3
template
set of BER-TLV data objects forming the value field of a constructed BER-TLV data object
[ISO/IEC 7816-4]

4 Abbreviations and notation

For the purposes of this document, the following notation applies.

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

Any number following the notation denotes the number of digits or characters. For example,

— a3 means three alphabetic characters;

— n...3 means up to three binary-coded decimal digits;

— n2...4 means two, three or four binary-coded decimal digits.

If the number of bits representing a data element is not a multiple of eight, then the mapping into a byte string should be defined in the context of the respective data element. If not specified otherwise, the appropriate number of bits shall be set to one in the last byte starting from bit 1.

5 Maintenance of interindustry data objects

It is the intention that every interindustry data object, specified at the time of publication, should be listed in this document. To allow the introduction, deletion or amendment of any data object, the following procedures shall be adopted:

— **Interindustry data objects from ISO/IEC 7816 —** if any part of ISO/IEC 7816 introduces new data objects, then the normal ballot process shall approve them. Following publication of that part of ISO/IEC 7816, these data objects will be incorporated into this document at the next revision.

— **Interindustry data objects from other standards —** for such data objects, an amendment to this document will be required and this will be subject to the normal ISO/IEC JTC 1 voting procedures. Following successful ballot the data objects will be incorporated into this document.

6 Specific interindustry data elements

According to its needs, any application may use the following interindustry data elements and templates.

6.1 Name of an individual

Referenced by tag '5B', this interindustry data element consists of up to 39 bytes; each byte is a character as defined in ISO/IEC 7501-1[7]. The data element consists of surname, i.e., family name, given name(s), i.e., forename(s), name suffix, e.g., Jr., number, and filler(s), all coded according to ISO/IEC 8859-1[12].

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 qualified name template should be used.

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6.2 Proprietary login data

Referenced by tag '5E', this interindustry data element consists of login data with proprietary structures not specified in ISO/IEC 7816.

6.3 Magnetic stripe data

The coding of the magnetic stripe data is as follows:

— referenced respectively by tags '5F21', '5F22' and '5F23', these interindustry data elements shall code card tracks 1, 2 and 3. Such a tag shall be used when the data element is identical to the data coded on the corresponding track on the magnetic stripe of the card (see ISO/IEC 7813[9] and ISO 4909)[6];

— referenced respectively by tags '56', '57' and '58', these interindustry data elements shall code application tracks 1, 2 and 3. Such a tag shall be used when, while formatted according to ISO/IEC 7813 and ISO 4909, the data element may differ from the data coded on the corresponding track of the magnetic stripe of the card.

6.4 PIN usage policy

Referenced by tag '5F2F', this interindustry data element shall consist of two bytes. It lists the tests the terminal shall perform in order to determine whether a PIN (personal identification number) is applicable to the current transaction, and, therefore, whether the terminal should prompt for the PIN. If set to one, bit 8 of the first byte specifies that a PIN applies to this application and the terminal should prompt for the PIN. The meaning of the other fifteen bits is application-dependent. If all bits are set to zero, then the terminal should not prompt for the PIN. If bit 8 of the first byte is set to one or if any test implies a PIN, but the PIN cannot be presented, then the action to take is application-dependent.

6.5 Login template

Referenced by tag '6A', this interindustry template shall consist of one or more primitive data objects. Within the login template, the context-specific class (first byte in the range '80' to 'BF') is reserved for login data objects such as qualifiers, numbers, texts and delay indicators, as listed in Table 1 and specified hereafter.

Table 1 — Login data objects

Tag		Meaning
'6A'		Interindustry template for nesting login data objects with the following tags
	'80'	Qualifier
	'81'	Number
	'82'	Text
	'83', '84'	Delay indicators
In this context, ISO/IEC JTC 1/SC17 reserves any other data object of the context-specific class (first byte from '80' to 'BF')		

— **Qualifier —** Referenced by tag '80' in a login template, this data element shall consist of one to nine bytes: a mandatory first byte coding a rank, followed by up to eight optional bytes coding a mnemonic. It shall qualify the subsequent objects in the template, until the next qualifier, if any.

- The rank is a number from zero 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 up to eight bytes consisting of 7-bit characters (bit 8 set to 0, see ISO/IEC 646[2]) to display at the man-machine interface.

— **Number —** Referenced by tag '81' in a login template, this data element shall consist of an even number of quartets where each quartet codes one character for representing a telephone number according to Table 2.

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Table 2 — Telephone number

Quartet	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 to an international telephone number
'E'	-	If first, introduction of a number to use without prefix If not first, requirement for a delay (two seconds) before continuing
'F'		Reserved for padding

— **Text —** Referenced by tag '82' in a login template, this data element shall consist of one or more bytes where each byte codes one character. Bit 8 sets the difference between data characters (bit 8 set to zero) and control characters (bit 8 set to one). The byte string consists of one or more strings of data characters (7-bit character, see ISO/IEC 646[2]) 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.

— **Delay indicators —** Referenced by tag '83' or '84' in a login template, this data element shall consist of one byte as specified in Table 3.

- When present, a delay indicator data object with tag '83' fixes the time for detecting an end of message. The default value shall be two seconds.
- When present, a delay indicator data object with tag '84' fixes the time for detecting an absence of response. The default value shall be sixty seconds.

Table 3 — Delay indicator byte

b8	b7	b6	b5	b4	b3	B2	b1	Meaning
0	0							Any other value is reserved for future use by ISO/IEC JTC1/SC17.
-	-	x	x	-	-	-	-	The time unit is
-	-	0	0	-	-	-	-	— 100 milliseconds
-	-	0	1	-	-	-	-	— 1 second
-	-	1	0	-	-	-	-	— 10 seconds
-	-	1	1	-	-	-	-	— 100 seconds
				x	x	x	x	Number of time units from zero to fifteen

6.6 Qualified name template

Referenced by tag '6B', this interindustry template shall consist of

— one or more object identifiers (tag '06') referring to the standards defining the qualified name presentation;

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

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

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6.7 Cardholder image template

Referenced by tag '6C', this interindustry template shall contain at least one data object as defined hereafter, possibly preceded by an tag allocation authority indicator (see ISO/IEC 7816-4) for identifying the authority responsible for the data object format.

— **Cardholder biometric data** — referenced by tag '5F2E', this interindustry data element contains biometric data for verifying the claimed identity of the person presenting the card. Examples of biometric data are fingerprints, palm prints, voiceprints, dynamic signatures, etc.

— **Cardholder portrait image** — referenced by tag '5F40', this interindustry data element shall be formatted as defined in ISO/IEC 10918-1[15], unless otherwise specified and / or requested by an authority.

— **Cardholder handwritten signature image** — referenced by tag '5F43', this interindustry data element shall be formatted as defined in ISO/IEC 11544[16] unless otherwise specified and/or requested by an authority.

NOTE — The use of this interindustry data object should be associated with appropriate security measures.

Further information on personal verification through biometric methods may be found in ISO/IEC 7816-11.

6.8 Application image template

Referenced by tag '6D', this interindustry template shall contain at least an application image (tag '5F44'), i.e. an icon or a logo related to the application. It may also contain an authority indicator (see Table 11) identifying the authority responsible for the data format of the application image. In the absence of authority indicator, the format shall be as defined in ISO/IEC 10918-1[15].

6.9 Display control template

Referenced by tag '7F20', this interindustry template may contain one or more data objects, the value of which, either directly or indirectly through templates, is not intended to be displayed and should only be used, when relevant, for processing of transmission.

7 Identification of integrated circuit manufacturers

7.1 Scope

This clause specifies

— a numbering system for integrated circuit manufacturer identifiers and

— rules for registration of integrated circuit manufacturers and rules for assignment of identifiers

to identify manufacturers of integrated circuits to be embedded in contact and / or contactless integrated circuits cards. The assigned values of the integrated circuit manufacturer identifiers will form the register, published as SC17 Standing Document 5.

Applications for a number may be made using the form in Annex A.

7.2 Identifier

The identifier is referenced by tag '5F4D'. It may be present in pre-issuing data (compact header '6Y' in the historical bytes and interindustry tag '46' in EF.ATR) on a proprietary basis.

NOTE — In amendment 1 to the first edition of ISO/IEC 7816-6, tag '5F4B' references an integrated circuit manufacturer identifier (a data element of one byte). In the first edition of ISO/IEC 7816-9, tag '5F4B' references a certificate holder authorization (a data element of five or more bytes). Consequently, tag '5F4B' is now deprecated in ISO/IEC 7816.

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The identifier consists of one byte where the bits are not all set to one; the value 'FF' is reserved for future extension. Longer identifiers are reserved for future use by ISO/IEC JTC1/SC17.

The identifier byte shall be used according to Table 4.

Table 4 — Identifier byte

Value	Meaning
'00'	Reserved for future use by ISO/IEC JTC1/SC17
'01' – '7E'	Reserved for the register
'7F', '80'	Reserved for future use by ISO/IEC JTC1/SC17
'81' – 'FE'	Proprietary
'FF'	Reserved for future extension by ISO/IEC JTC1/SC17

7.3 Rules for assignment

The ISO/IEC JTC1/SC 17 Secretariat [1)] will assign and register the integrated circuit manufacturer identifiers (range '01' to '7E') according to the following rules:

a) the assignment is made upon request from any integrated circuit manufacturer or any interested party;
b) the form contained in Annex A should be used to request an assignment;
c) a single number shall be assigned to each manufacturer (next available number);
d) the assigned values shall form the register provided in SC17 Standing Document 5;
e) SC17 Standing Document 5 will be updated as required;
f) WG4 shall, at a periodicity of 12 months, check the content of SC17 Standing Document 5 for accuracy;
g) a copy of SC17 Standing Document 5 shall be available at the SC17 website - http://www.sc17.com/

8 Interchange profile

The specification of data objects associated with the interchange profile of the card (e.g. available authentication methods and security functions) may be further detailed in future parts of ISO/IEC 7816. Table 5 shows interindustry data objects reserved for interchange profile.

Table 5 — Interindustry data objects reserved for interchange profile

Tag	Value
'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

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9 Interindustry data elements in alphabetic order

Table 6 lists interindustry data elements in alphabetic order, with description, reference, tag, length and format where appropriate.

Table 6 — Interindustry data elements in alphabetic order

Data Element	Description & Reference	Tag	Length / Format	May be found within template
Address	Address of an individual	5F42	variable	65
Answer-to-reset	Indicates operating characteristics of the card (defined in ISO/IEC 7816-3)	5F51	Up to 32 bytes	-
Application effective date	Date from which the application can be used, under the responsibility of the application provider	5F25	n 6 / YYMMDD	6E
Application expiration date	Date after which an application expires, under the responsibility of the application provider	5F24	n 6 / YYMMDD	6E
Application identifier	Data element identifying an application in the card (coding defined in ISO/IEC 7816-4)	4F	variable	61, 6E
Application image	Icon or logo associated with an application (see ISO/IEC 10918-1[15])	5F44	variable	6D
Application image template	Template nesting at least an application image	6D	variable	6E
Application label	Data element for use at the man-machine interface	50	variable	61, 6E
Application related data	Template nesting parameters of an application	6E	variable	-
Application template	Template identifying an application in the card (defined in ISO/IEC 7816-4)	61	variable	-
Authentication data	Template nesting authentication data and parameters	67	variable	66
Biometric information template	Template nesting biometric information data objects (defined in ISO/IEC 7816-11)	7F60	variable	-
Biometric information group template	Template used for nesting biometric information templates (see ISO/IEC 7816-11)	7F61	variable	-
Biometric data template	Template nesting biometric reference data objects (defined in ISO/IEC 7816-11)	7F2E	variable	7F60
Card capabilities	Data element fixing card behaviours (defined in ISO/IEC 7816-4)	47	variable	66
Card data	Template nesting data related to the card	66	variable	-
Card effective date	Date from which the card can be used, under the responsibility of the card issuer	5F26	n 6 / YYMMDD	66
Card expiration date	Date after which the card expires	59	n 4 / YYMM	66
Card issuer's data	Proprietary, see ISO/IEC 7816-4	45	variable	66
Card sequence number	Number distinguishing between separate cards with the same primary account number	5F34	n 2	66
Card service data	Indication of methods available in the card for supporting services (defined in ISO/IEC 7816-4)	43	one byte	-
Cardholder biometric data	Biometric data related to the cardholder	5F2E	variable	65
Cardholder certificate	Template nesting the cardholder public key, further information, signature of certification authority	7F21	variable	65

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Data Element	Description & Reference	Tag	Length / Format	May be found within template
Cardholder handwritten signature image	Image of the cardholder's handwritten signature (see ISO/IEC 11544[16])	5F43	variable	6C
Cardholder image template	Cardholder related images stored within the card (defined in ISO/IEC 7816-4)	6C	variable	65
Cardholder name	Name of the cardholder (defined in ISO/IEC 7813)	5F20	n 2..26	65
Cardholder nationality	Nationality of the cardholder (coding defined in ISO 3166-1[3])	5F2C	n 3	65
Cardholder portrait image	Encoded image data, used for the cardholder portrait image (format defined in ISO/IEC 10918-1[15])	5F40	variable	6C
Cardholder private key	Data element containing the cardholder's private key for digital signature functionality using asymmetric mechanisms	5F48	variable	65
Cardholder private key template	Template nesting private key related data objects	7F48	variable	65
Cardholder public key	Data element containing the cardholder's public key data elements for digital signature functionality using asymmetric mechanisms	5F49	variable	65
Cardholder public key template	Template containing the cardholder's public key data objects for digital signature functionality using asymmetric mechanisms (defined in ISO/IEC 7816-8)	7F49	variable	65
Cardholder related data	Template nesting data related to the cardholder	65	variable	-
Cardholder requirements – excluded features	Data element containing cardholder's requirements for excluded features e.g. cardholder is not able to use fingerprint verification (see EN 1332-4[19] for further information on coding of user requirements)	7F23	variable	65
Cardholder requirements – included features	Data element containing a cardholder's requirements for included features e.g. cardholder requires audio assistance from an ATM (see EN 1332-4[19] for further information on coding of user requirements)	7F22	variable	65
Certificate content	Data element containing the content of a certificate	5F4E	variable	7F21
Certificate content template	Template for nesting certificate content data objects	7F4E	variable	
Certificate Holder Authorisation	a certificate holder authorization (e.g. a role identifier) may be contained in a data element or data object with tag '5F4C'.	5F4C	variable	-
Coexistent Tag Allocation Authority	Template used to identify a coexistent tag allocation scheme and the authority responsible for the scheme	79	variable	-
Command-to-perform	Command APDU (see ISO/IEC 7816-3)	52	variable	61
Compatible Tag Allocation Authority	Template used to identify a compatible tag allocation scheme and the authority responsible for the scheme	78	variable	-
Country code	Indication of a country (coding and registration defined in ISO 3166-1[3])	5F28	n 3	66

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Data Element	Description & Reference	Tag	Length / Format	May be found within template
Country code and optional national data	Indication of a country followed by national data (coding and registration defined in ISO 3166-1[3]) and optional national data	41	n 3 and national data	66
Currency code	Code for the representation of currencies and funds (see ISO 4217[4])	5F2A	a 3 or n 3	6E
Currency exponent	Number by which an amount of the currency indicated in the card shall be multiplied (see ISO 4217[4])	5F36	n 1	6E
Date of birth	Date of birth of related individual	5F2B	n 8 / YYYYMMDD	65
Digital signature	Data element containing a digital signature (asymmetric or symmetric algorithm)	5F3D	variable	7F3D
Digital signature block	Template nesting digital signature related data objects	7F3D	variable	
Discretionary data	Data element not defined in ISO/IEC 7816.	53	variable	Interindustry template
Discretionary data objects	Concatenation of data objects not defined in ISO/IEC 7816	73	variable	Interindustry template
Display control	Template used to control data displayed at the terminal	7F20	variable	66
Display message	Data element containing a message to display	5F45	variable	66
Dynamic authentication template	Template used in the command and response data fields of the GENERAL AUTHENTICATE command (defined in ISO/IEC 7816-4)	7C	variable	-
Dynamic external authentication	Composite data element used for identifying the algorithm and the key to use in the EXTERNAL AUTHENTICATE command	5F3B	to be defined	67
Dynamic internal authentication	Composite data element used for identifying the algorithm and the key to use in the INTERNAL AUTHENTICATE command	5F3A	to be defined	67
Dynamic mutual authentication	Composite data element used for identifying the algorithm and the key to use in the mutual authentication process (see parts 2 and 3 of ISO/IEC 9798[13])	5F3C	to be defined	67
Element list	Sequence of elements and related information, without identifiers (to be used only within a wrapper)	5F41	variable	-
Extended header list	Data element for indirectly referencing data elements (coding defined in ISO/IEC 7816-4)	4D	variable	-
FCI template	Template for nesting file control parameters and file management data	6F	variable	-
FCP template	Template for nesting file control parameters	62	variable	-
File reference	Reference to a file e.g. a path (coding defined in ISO/IEC 7816-4)	51	variable	61
FMD template	Template for nesting file management data	64	variable	-
Header list	Concatenation of pairs of tag fields and length fields without delimitation (as defined in ISO/IEC 7816-4)	5D	variable	-
Historical bytes	Used to indicate operating characteristics of the card (see ISO/IEC 7816-4)	5F52	Up to 15 bytes	-

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Data Element	Description & Reference	Tag	Length / Format	May be found within template
Integrated circuit manufacturer identifier	Indication of a manufacturer of integrated circuits	5F4D	1 byte	-
Initial access data	Indication of a command-to-perform for retrieving the initial data string (coding defined in ISO/IEC 7816-4)	44	variable	66
Interchange control	Indication to use in association with a country code to indicate whether international interchange is permitted on a card (see ISO 4909[6])	5F27	n 1	66
Interchange profile	Data element describing capabilities available in the card to perform an interchange transaction	5F29	to be defined	67
Issuer identification number (and optional issuer data)	Data element for identifying the card issuer (coding and registration defined in ISO/IEC 7812-1[8]), possibly followed by more data.	42	variable	-
Language preferences	Indication, in order of preference, of up to four languages for the cardholder (see ISO 639[1])	5F2D	a 2..a 8	65
Login data (Proprietary)	Proprietary information intended for connecting the interface device to a remote host, a remote server or an application within these devices	5E	variable	6E
Login template	Template conveying data intended for connecting the interface device to a remote server or an application within such devices (defined in ISO/IEC 7816-4)	6A	variable	6E
Message reference	Data element specifying the reference of a message	5F47	variable	66
Name	Name of an individual (structure and coding defined in ISO/IEC 7501-1[7])	5B	a … 39	65
Object Identifier	Indication of a standard (coding defined in ISO/IEC 8825-1[11])	06	variable	-
Offset Data Object	For use with commands using an odd INS code (see ISO/IEC 7816-4)	54	Binary, variable	-
PIN usage policy	Indication whether PIN entry is required and under what circumstances	5F2F	2 bytes	6E
Pre-issuing data	Proprietary, see ISO/IEC 7816-4	46	variable	66
Primary Account Number (PAN)	Number identifying a customer account or card (structure defined in ISO/IEC 7812 and coding in ISO 8583[10])	5A	n..19	6E
Public key of certification authority	Data element containing the certification authority's public key for digital signature functionality used to verify certificates	5F4A	variable	65
Qualified name	Template nesting the name of an individual and related information, e.g., sex, date of birth etc (defined in ISO/IEC 7816-4)	6B	variable	65
Secure messaging template	Template nesting secure messaging data objects (defined in ISO/IEC 7816-4)	7D	variable	-
Security environment template	Template nesting components of a security environment (defined in ISO/IEC 7816-4)	7B	variable	-
Security support template	Template for encapsulating counters and auxiliary data (defined in ISO/IEC 7816-4)	7A	variable	-

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Data Element	Description & Reference	Tag	Length / Format	May be found within template
Service code	Identification of geographic / service availability (structure defined in ISO/IEC 7813 and coding in ISO 8583[10])	5F30	n 3	6E
Sex	Gender of an individual (see ISO 5218)	5F35	1 byte	65
Special user requirements	Template containing at least a tag allocation authority (tag '06', '41', '42' or '4F') and a data object by which this authority indicates the user requirements, possibly related to a disability	68	variable	65
Static internal authentication (one-step)	Data element containing a digital signature value which may be used either alone or in conjunction with the tags '5F38' and '5F39'	5F37	to be defined	67
Static internal authentication - first associated data	Public key certificate data element to use either alone or in conjunction with the tag '5F39', to derive a public key value	5F38	to be defined	67
Static internal authentication - second associated data	Data auxiliary to the public key certificate, tag '5F38', used to derive the notarised public key	5F39	to be defined	67
Status information	Information on card life cycle status and processing status (coding defined in ISO/IEC 7816-4)	48	1..3 bytes	-
Tag list	Concatenation of tag fields without delimitation (defined in ISO/IEC 7816-4)	5C	variable	-
Templates for non interindustry data objects	Templates nesting non-interindustry data objects	70 to 77 (except 73)	variable	-
Template for interindustry data objects	Template nesting interindustry data objects	7E	variable	-
Timer	Data element specifying the maximal time, in tenths of a second, for performing or executing a process	5F46	2 bytes, binary coded most significant byte first	66
Track 1 (application)	Structure defined in ISO/IEC 7813[9] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein	56	ans..76	6E
Track 1 (card)	Structure defined in ISO/IEC 7813[9] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein. The data content is the same as track 1 of the magnetic stripe, including discretionary data.	5F21	ans..76	66
Track 2 (application)	Structure defined in ISO/IEC 7813[9] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein	57	n..37	6E
Track 2 (card)	Structure defined in ISO/IEC 7813[9] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein. The data content is the same as track 2 of the magnetic stripe, including discretionary data.	5F22	n..37	66

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Data Element	Description & Reference	Tag	Length / Format	May be found within template
Track 3 (application)	Structure defined in ISO 4909[6] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein.	58	n..104	6E
Track 3 (card)	Structure defined in ISO 4909[6] and coding in ISO 8583[10], including field separators but excluding start and end sentinels and longitudinal check characters as defined therein. The data content is the same as track 3 of the magnetic stripe, including discretionary data.	5F23	n..104	66
Transaction counter	Counter incremented under the control of the application in the card after each transaction	5F32	binary variable	6E
Transaction date	Used to recognise the date and time of the last transaction. Length is 4 for YDDD and 10 for full field	5F33	n 4 / YDDD or n10 / YDDDHHMMSS	6E
Uniform resource locator	Uniform resource locator (URL, as defined in RFC 1738[20] and 2396[21])	5F50	variable	-
Wrapper	Template for indirect referencing and retrieval of data elements	63	variable	-

10 Interindustry tags in numeric order

Table 7 lists interindustry tags in numeric order.

Table 7 — Interindustry tags in numeric order

Tag	Name of Data Element
06	Object Identifier
41	Country code and national data
42	Issuer identification number
43	Card service data
44	Initial access data
45	Card issuer's data
46	Pre-issuing data
47	Card capabilities
48	Status information
4D	Extended header list
4F	Application identifier
50	Application label
51	File reference
52	Command-to-perform
53	Discretionary data
54	Offset Data Object
56	Track 1 (application)
57	Track 2 (application)
58	Track 3 (application)
59	Card expiration date
5A	Primary Account Number (PAN)

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Tag	Name of Data Element
5B	Name
5C	Tag list
5D	Header list
5E	Login 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 private key
5F49	Cardholder public key
5F4A	Public key of certification authority
5F4B	Deprecated (see note below)
5F4C	Certificate holder authorization

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Tag	Name of Data Element
5F4D	Integrated circuit manufacturer identifier
5F4E	Certificate content
5F50	Uniform resource locator (URL)
5F51	Answer-to-reset
5F52	Historical bytes
5F3D	Digital signature
61	Application template
62	FCP template
63	Wrapper
64	FMD template
65	Cardholder related data
66	Card data
67	Authentication data
68	Special user requirements
6A	Login template
6B	Qualified name
6C	Cardholder image template
6D	Application image template
6E	Application related data
6F	FCI template
70…77 (except 73)	Templates for nesting non interindustry data objects
73	Discretionary data objects
78	Compatible Tag Allocation Authority
79	Coexistent Tag Allocation Authority
7A	Security support template
7B	Security environment template
7C	Dynamic authentication template
7D	Secure messaging template
7E	Template for nesting interindustry data objects
7F20	Display control
7F21	Cardholder certificate
7F22	Cardholder requirements – included features
7F23	Cardholder requirements – excluded features
7F2E	Biometric data template
7F3D	Digital signature block
7F48	Cardholder private key template
7F49	Cardholder public key template
7F4E	Certificate content template
7F60	Biometric information template
7F61	Biometric information group template

NOTE — In the first edition of ISO/IEC 7816-9, tag '5F4B' references a certificate holder authorization (a data element of five or more bytes). In Amendment 1 to the first edition of ISO/IEC 7816-6, tag '5F4B' references an integrated circuit manufacturer identifier (a data element of one byte). Consequently, tag '5F4B' is now deprecated in this edition of ISO/IEC 7816. A certificate holder authorization is now tag '5F4C' and an integrated circuit manufacturer identifier is now tag '5F4D'

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11 Interindustry templates

11.1 Interindustry data objects within interindustry templates

The following interindustry templates should be used when there is a need to nest interindustry data objects. Compatible and coexistent tag allocation schemes may use further templates (see ISO/IEC 7816-4). The order of the templates and the order of the data objects within the templates are not significant, unless otherwise specified.

Table 8 — Application template (tag '61')

Tag	Data Element
4F	Application Identifier (AID)
50	Application label
52	Command-to-perform
53	Discretionary data
73	Discretionary data objects
51	File reference
5F50	Universal resource locator

Table 9 — Cardholder related data (tag '65')

Tag	Data Element
5F42	Address
5F2E	Cardholder biometric data
7F21	Cardholder certificate
5F43	Cardholder handwritten signature image
6C	Cardholder image template
5F20	Cardholder name
5F2C	Cardholder nationality
5F40	Cardholder portrait image
5F49	Cardholder public key
7F49	Cardholder public key template
5F48	Cardholder private key
7F48	Cardholder private key template
7F23	Cardholder requirements – excluded features
7F22	Cardholder requirements – included features
5F2B	Date of birth
53	Discretionary data
73	Discretionary data objects
5F2D	Language preferences
5B	Name
5F4A	Public key of certification authority
6B	Qualified name
5F35	Sex
68	Special user requirements

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Table 10 — Card data (tag '66')

Tag	Data Element
47	Card capabilities
5F26	Card effective date
59	Card expiration date
45	Card issuer's data
5F34	Card sequence number
5F28	Country code
53	Discretionary data
73	Discretionary data objects
7F20	Display control
5F45	Display message
44	Initial access data
5F4D	Integrated circuit manufacturer identifier
5F27	Interchange control
5F47	Message reference
46	Pre-issuing data
5F46	Timer
5F21	Track 1 (card)
5F22	Track 2 (card)
5F23	Track 3 (card)

Table 11 — Authentication data (tag '67')

Tag	Data Element
53	Discretionary data
73	Discretionary data objects
5F3B	Dynamic external authentication
5F3A	Dynamic internal authentication
5F3C	Dynamic mutual authentication
5F29	Interchange Profile
5F37	Static internal authentication (one-step)
5F38	Static internal authentication - first associated data
5F39	Static internal authentication - second associated data

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Table 12 — Application related data (tag '6E')

Tag	Data Element
5F25	Application effective date
5F24	Application expiration date
4F	Application identifier
6D	Application image template
50	Application label
5F2A	Currency code
5F36	Currency exponent
53	Discretionary data
73	Discretionary data objects
5E	Login data (proprietary)
6A	Login template
5F2F	PIN usage policy
5A	Primary Account Number (PAN)
5F30	Service code
56	Track 1 (application)
57	Track 2 (application)
58	Track 3 (application)
5F32	Transaction counter
5F33	Transaction date

11.2 Interindustry templates defining a context

ISO/IEC 7816 reserves the context-specific class (first byte in the range '80' to 'BF') in the following interindustry templates.

Table 13 — Interindustry templates defining a context

Tag	Data Element	ISO/IEC 7816
62	FCP template	Part 4
6A	Login template	Part 6
6F	FCI template	Part 4
7A	Security support template	Part 4
7B	Security environment template	Part 4
7C	Security environment template	Part 4
7D	Dynamic authentication template	Part 4
7F2E	Biometric data template	Part 11
7F48	Cardholder private key template	Part 8
7F49	Cardholder public key template	Part 8
7F60	Biometric information template	Part 11

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Annex A
(normative)

Application for integrated circuit manufacturers number

This application is submitted in accordance with International Standard ISO/IEC 7816-6, *Identification cards — Integrated circuit cards — Part 6: Interindustry data elements for interchange*.

TO BE COMPLETED BY THE APPLICANT (IC Manufacturer) **Please type or print**

<table>
<tr><td colspan="3">Name of Organization as it will appear in the Register:</td></tr>
<tr><td colspan="3">Address to be registered:</td></tr>
<tr><td colspan="3">Principal contact in Organization</td></tr>
<tr><td>International Telephone Number:</td><td>International Fax Number:</td><td>E-Mail:</td></tr>
<tr><td colspan="3">Address for correspondence (if different to above):</td></tr>
<tr><td colspan="2">Signature:</td><td>Date:</td></tr>
<tr><td colspan="3">Registration number (to be completed by SC17 Secretariat):</td></tr>
</table>

Submit form to:

Mrs F. Bennett, APACS, Mercury House, Triton Court, 14 Finsbury Square, London EC2 1LQ, UK

email: freda.bennett@apacs.org.uk

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