INTERNATIONAL STANDARD

**ISO/IEC 7816-6**

Fourth edition
2023-04

# 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*

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# Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of document should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents) or the IEC list of patent declarations received (see http://patents.iec.ch).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

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

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

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

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

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# Introduction

ISO/IEC 7816 is a series of International Standards specifying integrated circuit cards and the use of such cards for interchange. These cards are identification cards intended for information exchange negotiated between the outside world and the integrated circuit in the card. As a result of an information exchange, the card delivers information (computation result, stored data), and/or modifies its content (data storage, event memorization).

— Five parts are specific to cards with galvanic contacts and three of them specify electrical interfaces.

  — ISO/IEC 7816-1 specifies physical characteristics for cards with contacts.

  — ISO/IEC 7816-2 specifies dimensions and location of the contacts.

  — ISO/IEC 7816-3 specifies electrical interface and transmission protocols for asynchronous cards.

  — ISO/IEC 7816-10 specifies electrical interface and answer to reset for synchronous cards.

  — ISO/IEC 7816-12 specifies electrical interface and operating procedures for USB cards.

— All the other parts are independent from the physical interface technology. They apply to cards accessed by contacts and/or by radio frequency.

  — ISO/IEC 7816-4 specifies organization, security and commands for interchange.

  — ISO/IEC 7816-5 specifies registration of application providers.

  — ISO/IEC 7816-6 specifies interindustry data elements for interchange.

  — ISO/IEC 7816-7 specifies commands for structured card query language.

  — ISO/IEC 7816-8 specifies commands for security operations.

  — ISO/IEC 7816-9 specifies commands for card management.

  — ISO/IEC 7816-11 specifies personal verification through biometric methods.

  — ISO/IEC 7816-13 specifies commands for handling the life cycle of applications.

  — ISO/IEC 7816-15 specifies cryptographic information application.

The ISO/IEC 10536 series specifies access by close coupling. The ISO/IEC 14443 series and the ISO/IEC 15693 series specify access by radio frequency. Such cards are also known as contactless cards.

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# Identification cards — Integrated circuit cards —

# Part 6: Interindustry data elements for interchange

## 1 Scope

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

It identifies the following characteristics of each data element:

— identifier;

— name;

— description and reference;

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

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

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

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

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

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## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

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

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

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

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

## 3 Terms and definitions

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

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

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

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

**3.1**
**cardholder**
end user of the security device

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

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

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

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

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

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

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

## 4 Abbreviated terms and notation

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

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

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

EXAMPLE

— a3 means three alphabetic characters;

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

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— n2..4 means two, three or four numeric 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 bit-string representing the data element is right-padded with bits set to '1' until the length of the padded bit-string is a multiple of eight.

| | |
|---|---|
| YDDD | last digit of year concatenated with day of year on three digits |
| YDDDHHMMSS | YDDD concatenated with hour of day, minute and second each on two digits |
| YYMM | last two digits of year concatenated month on two digits |
| YYMMDD | YYMM concatenated with day of month on two digits |
| YYYYMMDD | four digits of year concatenated with month and day of month each on two digits |

NOTE 2 The former 3-period notation being equivalent to 2-period notation is deprecated.

# 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 the ISO/IEC 7816 series** — Following the publication of any part of the ISO/IEC 7816 series that introduces new data objects, 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 a successful ballot, the data objects will be incorporated into this document.

— **Allocation authority** — Once an application class tag is allocated to a norm as described above, this norm becomes the allocation authority for all context-specific data objects it endorses and encapsulates under the aforementioned tag.

# 6 Specific interindustry data elements

## 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. 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.

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

## 6.2 Proprietary login data

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

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## 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 in accordance with ISO/IEC 7813 and ISO/IEC 4909;

— 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/IEC 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 (hex) | 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/SC 17 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) 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.

— **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

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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) 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 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<br>If not first, requirement for a delay (two seconds) before continuing |
| 'F' | | Reserved for padding |

**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 JTC 1/SC 17. |
| — | — | 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 the following:

— 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 a 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, 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 unless otherwise specified and/or requested by an authority.

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 ISO/IEC 7816-4) 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.

### 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 General

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.

### 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/INFO) on a proprietary basis.

NOTE Tag '5F4B' for referencing identifiers is deprecated in the ISO/IEC 7816 series, because two different definitions existed within that series.

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The identifier consists of one or more byte. The identifier shall be coded according to Table 4 and Table 5.

**Table 4 — First identifier byte**

| Value | Meaning |
|---|---|
| '00' | No information given |
| '01' .. '7E' | Reserved for the register of one byte identifier |
| '7F', '80' | Reserved for future use by ISO/IEC JTC 1/SC 17 |
| '81' .. 'FE' | Proprietary |
| 'FF' | Reserved for register of identifiers with more than one byte, at least one subsequent identifier byte follows, see Table 5 |

**Table 5 — Subsequent identifier bytes**

| Value | Meaning |
|---|---|
| 'xx' | If bit b8 equals 1: Another identifier byte follows.<br>If bit b8 equals 0: Last byte of identifier.<br>Bits b7 to b1 contain arbitrary values.<br>The integrated circuit manufacturer identifier is represented by the sequence of bytes starting with 'FF' up to and including the last byte of the sequence. |

## 7.3 Rules for assignment

The name and contact information of the maintenance agency for this integrated circuit manufacturer identifiers can be found at www.iso.org/maintenance_agencies. Such identifiers will be assigned 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;

d) the last assigned number shall be incremented by one to build the newly assigned number (i.e. only if all available n-byte values have been assigned, the assignment of (n+1)-byte identifier shall start);

NOTE 1 'FF00' is the first two byte identifier. 'FF7F' is the last two byte identifier. 'FF8000' is the first three byte identifier. 'FFFF7F' is the last three byte identifier. Incrementing the identifier value 'FF807F' by one leads to the value 'FF8100'.

NOTE 2 Between 2007 and 2018 an average of approximately six identifiers have been assigned per year. Keeping up that rate it follows that the first two byte identifier is expected soon, in 2040 the first three byte IC manufacturer is expected and 2700 years later the first four byte identifier is expected. If the rate of assigning increases from six per year to one per day then the first four byte identifier is expected in approximately the year 2060.

**WARNING — As pointed out by NOTE 2 it is expected that the length of assigned integrated circuit manufacturer identifier possibly increases from one byte to two bytes soon.**

# 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 the ISO/IEC 7816 series. Table 6 shows interindustry data objects reserved for interchange profile.

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**Table 6 — 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 |

## 9 Interindustry data elements in alphabetic order

Table 7 lists interindustry data elements in alphabetic order, with description, reference, tag, length and format where appropriate.

NOTE 1 Whenever widely used, for example, in published specifications, Data element acronyms are indicated and their first character is in capital letter.

NOTE 2 The encoding format is out of scope unless a standard is referenced or a definition is given. This applies especially for combinations of abbreviations as in 'an' or 'ans'.

**Table 7 — Interindustry data elements in alphabetic order**

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| Account type | Indicates the type of account selected by the cardholder for the transaction (see EMV for coding) | 5F57 | n2 | 6E |
| Address | Address of an individual | 5F42 | variable | 65 |
| Answer-to-reset (ATR) | Indicates operating characteristics of the card (defined in ISO/IEC 7816-3) | 5F51 | 1..32 bytes | — |
| Application capability description template (ACD) | Template for description of each card-application including alpha card-application (see ISO/IEC 24727-2) | 7F63 | variable | — |
| Application effective date | Date from which the application can be used, under the responsibility of the application provider | 5F25 | n6/YYMMDD | 6E |
| Application expiration date | Date after which an application expires, under the responsibility of the application provider | 5F24 | n6/YYMMDD | 6E |
| Application family identifier (AFI) | Designation of several application areas to enable global interoperability (see ISO/IEC 14443-3) | 49 | 1 byte '00'..'FF' | — |
| Application identifier (AID) | 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) | 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 | Template nesting parameters of an application | 6E | variable | — |

[a] This data element should be encoded as unpacked BCD.

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| Application template | Template identifying an application in the card (defined in ISO/IEC 7816-4) | 61 | variable | — |
| Authentication data template | Template nesting authentication data and parameters | 67 | variable | 66 |
| Business identifier code (BIS) | A universal business identifier code (former bank identifier code) for use in automated processing in banking and related financial environments (see ISO 9362) | 5F54 | an8 or an11 | 6E |
| Biometric information template (BIT) | 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 capability description template (CCD) | Template describing card capability, may be present in EF.ATR or in alpha card-application (see ISO/IEC 24727-2) | 7F62 | variable | — |
| Card data template | 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 | n6/YYMMDD | 66 |
| Card expiration date | Date after which the card expires | 59 | n4/YYMM | 66 |
| Card issuer's data | Proprietary (see ISO/IEC 7816-4) | 45 | variable | 66 |
| Card management service template | Template for card management data objects description, may be found in EF.ATR (see ISO/IEC 7816-13) | 7F64 | variable | — |
| Card sequence number | Number distinguishing between separate cards with the same primary account number | 5F34 | n2 | 66 |
| Card service data | Indication of methods available in the card for supporting services (defined in ISO/IEC 7816-4) | 43 | 1 byte | — |
| Cardholder biometric data | Biometric data related to the cardholder | 5F2E | variable | 65 |
| Cardholder certificate template | Template nesting the cardholder public key, further information, signature of certification authority | 7F21 | variable | 65 |
| Cardholder handwritten signature image | Image of the cardholder's handwritten signature (see ISO/IEC 11544) | 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 | ans2..26 | 65 |
| Cardholder nationality | Nationality of the cardholder (coding defined in ISO 3166-1) | 5F2C | n3 | 65 |
| Cardholder portrait image | Encoded image data, used for the cardholder portrait image (format defined in ISO/IEC 10918-1) | 5F40 | variable | 6C |

[a] This data element should be encoded as unpacked BCD.

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| 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 | Template nesting data related to the cardholder | 65 | variable | — |
| Cardholder requirements template, 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 for further information on coding of user requirements) | 7F23 | variable | 65 |
| Cardholder requirements template, 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 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 effective date (CED) | Date from which the certificate can be used | 5F25 | n6/YYMMDD[a] | 7F4E |
| Certificate expiration date (CXD) | Date after which a certificate expires | 5F24 | n6/YYMMDD[a] | 7F4E |
| Certificate holder authorization | Deprecated (see 7.2 and NOTE under Table 8) | 5F4B | variable | — |
| Certificate holder authorization (CHA) | A certificate holder authorization (e.g. a role identifier) may be contained in a data element or data object with tag '5F4C' | 5F4C | variable | — |
| Certificate holder authorization template (CHAT) | Template containing an object identifier specifying the format of the template and data object(s) encoding the certificate holder authorization (e.g. role and access rights) | 7F4C | variable | 7F4E |
| Coexistent tag allocation authority template | 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 | — |

[a] This data element should be encoded as unpacked BCD.

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| Control parameters (CP) template | Template for nesting file or data object control parameters | 62 | variable | — |
| Country code | Indication of a country (coding and registration defined in ISO 3166-1) | 5F28 | n3 | 66 |
| Country code (alpha 2 format) | Indication of a country (see ISO 3166-1) | 5F55 | a2 | 66 |
| Country code (alpha 3 format) | Indication of a country (see ISO 3166-1) | 5F56 | a3 | 66 |
| Country code and optional national data | Indication of a country followed by national data (coding and registration defined in ISO 3166-1) and optional national data | 41 | n3 and national data | 66 |
| Currency code | Code for the representation of currencies and funds (see ISO 4217) | 5F2A | a3 or n3 | 6E |
| Currency exponent | Number by which an amount of the currency indicated in the card shall be multiplied (see ISO 4217) | 5F36 | n1 | 6E |
| Date of birth | Date of birth of related individual | 5F2B | n8/YYYYMMDD | 65 |
| Digital signature | Data element containing a digital signature (asymmetric or symmetric algorithm) | 5F3D | variable | 7F3D |
| Digital signature block template | Template nesting digital signature related data objects | 7F3D | variable | — |
| Discretionary data | Data element not defined in ISO/IEC 7816 (all parts) | 53 | variable | Interindustry template |
| Discretionary data objects template | Concatenation of data objects not defined in ISO/IEC 7816 (all parts) | 73 | variable | Interindustry template |
| Display control template | 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 | variable | 67 |
| Dynamic internal authentication | Composite data element used for identifying the algorithm and the key to use in the INTERNAL AUTHENTICATE command | 5F3A | variable | 67 |
| Dynamic mutual authentication | Composite data element used for identifying the algorithm and the key to use in the mutual authentication process (see ISO/IEC 9798-2 and ISO/IEC 9798-3) | 5F3C | variable | 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 | — |
| Extended header list referencing a byte string | Extended header list for referencing a byte string with no stated structure and entitle skipping indication of primitive DOs | 5F60 | variable | — |
| Extended header list referencing one or several DOs | Extended header list (referencing one or several DOs); entitle skipping indication of primitive DOs | 5F61 | variable | — |

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| Extended length information template | Extended length information template (coding defined in ISO/IEC 7816-4:2020, 12.8.1) may be present in EF.ATR/INFO and/or in the FMD of any Application DF and it is denoted by the third software function table of the card capabilities | 7F66 | variable | — |
| FCI template | File Control Information Template for nesting file control parameters and file management data | 6F | variable | — |
| Features management template | Possibly extendable features on the card exposed to outside world in a generic way. May be located in EF.ATR/INFO and/or in the FCI of any application DF (see ISO/IEC 7816-4) | 7F74 | variable | — |
| File reference | Reference to a file, e.g. a path (coding defined in ISO/IEC 7816-4) | 51 | variable | 61 |
| Filter template | Template referencing a constructed data objects by its content | 7F71 | variable | 60 |
| File Management Data (FMD) template | File Management Data Template for nesting file management data | 64 | variable | — |
| General reference template | Template conveyed in a command data field or nested in object locator template '7F72' and indicating a DF, EF, DO, or DataString with possibly the application of a filter or a mask | 60 | 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 | Indicate operating characteristics of the card (see ISO/IEC 7816-4) | 5F52 | 0..15 bytes | — |
| 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/IEC 4909) | 5F27 | n1 | 66 |
| Interchange profile | Data element describing capabilities available in the card to perform an interchange transaction | 5F29 | variable | 67 |
| International Bank Account Number (IBAN) | A number used internationally to uniquely identify the account of a customer at a financial institution (see ISO 13616-1) | 5F53 | an..34 | 6E |
| Issuer Identification Number (IIN) and optional issuer data | Data element for identifying the card issuer (coding and registration defined in ISO/IEC 7812-1), 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 | a2..8 | 65 |
| List of supported INS codes | List of supported INS codes that may be located in EF.ATR/INFO and/or in the FMD of any application DF | 5F63 | variable | 64 |
| 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 |

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| 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 |
| Mask | References a DO by partial tag and allows recovery of a concatenation of all tags of the template matching the masked tag | 5F8400 | variable | 60 |
| Memory resource assignment template | Template describing the memory resource assignment data objects for persistent and volatile memory (see ISO/IEC 7816-13) | 7F65 | variable | — |
| 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) | 5B | a..39 | 65 |
| Non constructed filter | Binary filter providing a binary mask to be used in a logical AND operation onto the data to be compared before comparison command (see ISO/IEC 7816-4) | 5F71 | variable | — |
| Object identifier (OID) | Indication of a standard (coding defined in ISO/IEC 8825-1) | 06 | variable | — |
| Object locator template | Template comprised of a mandatory object reference DO (present on-card), followed by a conditional attribute reference DO (see ISO/IEC 7816-4) | 7F72 | variable | — |
| Offset data object | For use with commands using an odd INS code (see ISO/IEC 7816-4) | 54 | variable, binary | — |
| 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 7812-1 and coding in ISO 8583-1) | 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. | 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 | — |
| Service code | Identification of geographic/service availability [structure defined in ISO/IEC 7813 and coding in ISO 8583-1] | 5F30 | n3 | 6E |
| Sex | Gender of an individual (see ISO/IEC 5218) | 5F35 | 1 byte | 65 |
| Special user requirements template | 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 |

[a] This data element should be encoded as unpacked BCD.

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| 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 | variable | 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 | variable | 67 |
| Static internal authentication, second associated data | Data auxiliary to the public key certificate, tag '5F38', used to derive the notarised public key | 5F39 | variable | 67 |
| Status indicator | Information on card life cycle status and processing status (coded as COMPACT-TLV data object 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 (see compatible tag allocation scheme, ISO/IEC 7816-4) | 70..72, 74..77 | 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 and coding in ISO 8583-1, 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 and coding in ISO 8583-1, 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 and coding in ISO 8583-1, 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 and coding in ISO 8583-1, 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 |
| Track 3 (application) | Structure defined in ISO/IEC 4909 and coding in ISO 8583-1, 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/IEC 4909 and coding in ISO 8583-1, 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 |

[a] This data element should be encoded as unpacked BCD.

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**Table 7** *(continued)*

| Data element | Description and reference | Tag (hex) | Length/format | May be found within template |
|---|---|---|---|---|
| Transaction counter | Counter incremented under the control of the application in the card after each transaction | 5F32 | variable, binary | 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 | n4/YDDD or n10/YDDDHHMMSS | 6E |
| Verification data DO | Optional use to denote a Password/PIN in VERIFY or CHANGE REFERENCE DATA command with odd INS code (see ISO/IEC 7816-4) | 5F62 | variable | — |
| Uniform resource locator (URL) | Uniform resource locator (URL, as defined in RFC 1738 and RFC 2396) | 5F50 | variable | — |
| Virtual root DO template | virtual constructed DO made current by the selection of a file, a record or a DataString supporting DO handling (see ISO/IEC 7816-4) | 7F70 | variable | — |
| Wrapper or tagged wrapper template | Template for indirect referencing and retrieval of data elements | 63 | variable | — |
| [a] This data element should be encoded as unpacked BCD. | | | | |

## 10 Interindustry tags in numeric order

Table 8 lists interindustry 1-byte, 2-byte or 3-byte tags in numeric order. Table 9 lists interindustry 3-byte tags for ISO/IEC 24727 service access layer (SAL) application programming interface (API) marshalling/unmarshalling (see ISO/IEC 24727-3 and ISO/IEC 24727-4) in numeric order.

**Table 8 — Interindustry tags in numeric order**

| Tag | Name of data element |
|---|---|
| 06 | Object identifier (OID) |
| 41 | Country code and national data |
| 42 | Issuer identification number (IIN) |
| 43 | Card service data |
| 44 | Initial access data |
| 45 | Card issuer's data |
| 46 | Pre-issuing data |
| 47 | Card capabilities |
| 48 | Status indicator |
| 49 | Application family identifier (AFI) |
| 4D | Extended header list |
| 4F | Application identifier (AID) |
| 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 |

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**Table 8** *(continued)*

| Tag | Name of data element |
|---|---|
| 5A | Primary account number (PAN) |
| 5B | Name |
| 5C | Tag list |
| 5D | Header list |
| 5E | Login data (Proprietary) |
| 60 | General reference template |
| 61 | Application template |
| 62 | Control parameter (CP) template |
| 63 | Wrapper or tagged wrapper template |
| 64 | File management data (FMD) template |
| 65 | Template for cardholder related data |
| 66 | Card data template |
| 67 | Authentication data template |
| 68 | Template for special user requirements |
| 6A | Login template |
| 6B | Qualified name template |
| 6C | Cardholder image template |
| 6D | Application image template |
| 6E | Application related data template |
| 6F | File control information (FCI) template |
| 70..72, 74..77 | Templates nesting non interindustry data objects (see compatible tag allocation scheme, ISO/IEC 7816-4) |
| 73 | Template for discretionary data objects |
| 78 | Template for compatible tag allocation authority |
| 79 | Template for coexistent tag allocation authority |
| 7A | Security support template |
| 7B | Security environment template |
| 7C | Dynamic authentication template |
| 7D | Secure messaging template |
| 7E | Template nesting interindustry data objects |
| 5F20 | Cardholder name |
| 5F21 | Track 1 (card) |
| 5F22 | Track 2 (card) |
| 5F23 | Track 3 (card) |
| 5F24 | Application expiration date, or certificate expiration date |
| 5F25 | Application effective date, or certificate 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 |

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**Table 8** *(continued)*

| Tag | Name of data element |
|---|---|
| 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 |
| 5F3D | Digital signature |
| 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 (CHA) |
| 5F4D | Integrated circuit manufacturer identifier |
| 5F4E | Certificate content |
| 5F50 | Uniform resource locator (URL) |
| 5F51 | Answer-to-reset (ATR) |
| 5F52 | Historical bytes |
| 5F53 | International bank account number (IBAN) |
| 5F54 | Business identifier code (BIC) (see ISO 9362) |
| 5F55 | Country code (alpha 2 format) |
| 5F56 | Country code (alpha 3 format) |
| 5F57 | Account type |
| 5F60 | Extended header list (referencing a byte string) |
| 5F61 | Extended header list (referencing one or several DOs) |
| 5F63 | List of supported INS codes |
| 5F62 | Verification data DO |
| 5F71 | Non constructed filter |

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**Table 8** *(continued)*

| Tag | Name of data element |
|---|---|
| 7F20 | Display control template |
| 7F21 | Cardholder certificate template |
| 7F22 | Template for cardholder requirements, included features |
| 7F23 | Template for cardholder requirements, excluded features |
| 7F2E | Biometric data template |
| 7F3D | Digital signature block template |
| 7F48 | Cardholder private key template |
| 7F49 | Cardholder public key template |
| 7F4C | Certificate holder authorization template (CHAT) |
| 7F4E | Certificate content template |
| 7F60 | Biometric information template |
| 7F61 | Biometric information group template |
| 7F62 | Card capability description template |
| 7F63 | Application capability description template |
| 7F64 | Card management service template |
| 7F65 | Memory resource assignment template |
| 7F66 | Extended length information |
| 7F70 | Virtual root data object template |
| 7F71 | Filter template |
| 7F72 | Object locator template |
| 7F74 | General features management template |
| 5F8400 | Mask |

NOTE Tag '5F4B' for referencing identifiers is deprecated in the ISO/IEC 7816 series, because two different definitions existed within that series.

**Table 9 — Interindustry tags for ISO/IEC 24727 in numeric order**

| Tag | Name of data element for remote SAL API call | Description and reference |
|---|---|---|
| 7F8F51 | APIAccess interface service: InitializeCall | Marshalling of the always executable call initializing the ISO/IEC 24727-3 layer including connectivity to other components of ISO/IEC 24727 protocol stack (ISO/IEC 24727-3:2008, 6.2 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.1). |
| 7F8F52 | APIAccess interface service : InitializeReturn | Marshalling of the response to InitializeCall (ISO/IEC 24727-3:2008, 6.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.1). |
| 7F8F53 | APIAccess interface service : TerminateCall | Marshalling of the call terminating access to card-application-services (ISO/IEC 24727-3:2008, 6.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.2). |
| 7F8F54 | APIAccess interface service : TerminateReturn | Marshalling of the response to TerminateCall (ISO/IEC 24727-3:2008, 6.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.2). |
| 7F8F55 | APIAccess interface service : CardApplicationPathCall | Marshalling of the call determining card-application-paths from the client-application to a named card-application (ISO/IEC 24727-3:2008, 6.4 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.3). |
| 7F8F56 | APIAccess interface service : CardApplicationPathReturn | Marshalling of the response to CardApplicationPathCall (ISO/IEC 24727-3:2008, 6.4.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.2). |
| 7F8F57 | Connection interface service : CardApplicationConnectCall | Marshalling of the call establishing an unauthenticated connection between the client-application and a card-application (ISO/IEC 24727-3:2008, 7.2 and ISO/IEC 24727-3:2008/Cor 1:2010, 4.4). |
| 7F8F58 | Connection interface service : CardApplicationConnectReturn | Marshalling of the response to CardApplicationConnect-Call (ISO/IEC 24727-3:2008, 7.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.4). |

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**Table 9** *(continued)*

| Tag | Name of data element for remote SAL API call | Description and reference |
|---|---|---|
| 7F8F59 | Connection interface service : CardApplicationDisconnectCall | Marshalling of the call terminate a connection between the client-application and a card-application (ISO/IEC 24727-3:2008, 7.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.5). |
| 7F8F5A | Connection interface service : CardApplicationDisconnect Return | Marshalling of the response to CardApplication-DisconnectCall (ISO/IEC 24727-3:2008, 7.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.5). |
| 7F8F5B | Connection interface service : CardApplicationStartSessionCall | Marshalling of the call establishing a session between a client-application and a card-application (ISO/IEC 24727-3:2008, 7.4 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.6). |
| 7F8F5C | Connection interface service : CardApplicationStartSession Return | Marshalling of the response to CardApplicationStart-SessionCall (ISO/IEC 24727-3:2008, 7.4.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.6). |
| 7F8F5D | Connection interface service : CardApplicationEndSessionCall | Marshalling of the call ending a session between a client-application and a card-application (ISO/IEC 24727-3:2008, 7.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.7). |
| 7F8F5E | Connection interface service : CardApplicationEndSession Return | Marshalling of the response to CardApplicationEnd-SessionCall (ISO/IEC 24727-3:2008, 7.5.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.4.7). |
| 7F8F5F | Card-application interface service : CardApplicationListCall | Marshalling of the call returning the names of the card-applications listed in the alpha card-application, the access rule applicable to this action being in the access control list of the current card-application (ISO/IEC 24727-3:2008, 8.2 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.1). |
| 7F8F60 | Card-application interface service : CardApplicationListreturn | Marshalling of the response to CardApplicationListCall (ISO/IEC 24727-3:2008, 8.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.1). |
| 7F8F61 | Card-application interface service : CardApplicationCreateCall | Marshalling of the call creating a new card-application (ISO/IEC 24727-3:2008, 8.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.2). |
| 7F8F62 | Card-application interface service : CardApplicationCreateReturn | Marshalling of the response to CardApplicationCreateCall (ISO/IEC 24727-3:2008, 8.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.2). |
| 7F8F63 | Card-application interface service : CardApplicationDeleteCall | Marshalling of the call deleting the named card-application including all of its services, data-sets, and differential-identities (ISO/IEC 24727-3:2008, 8.4 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.3). |
| 7F8F64 | Card-application interface service : CardApplicationDeleteReturn | Marshalling of the response to CardApplicationDeleteCall (ISO/IEC 24727-3:2008, 8.4.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.3). |
| 7F8F65 | Card-application interface service : CardApplication ServiceListCall | Marshalling of the call listing the card-application-services in the current card-application (ISO/IEC 24727-3:2008, 8.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.4). |
| 7F8F66 | Card-application interface service : CardApplication ServiceListReturn | Marshalling of the response to CardApplicationService-ListCall (ISO/IEC 24727-3:2008, 8.5.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.4). |
| 7F8F67 | Card-application interface service : CardApplication ServiceCreateCall | Marshalling of the call creating a new card-application-service in the current card-application (ISO/IEC 24727-3:2008, 8.6 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.5). |
| 7F8F68 | Card-application interface service : CardApplication ServiceCreateReturn | Marshalling of the response to CardApplicationService-CreateCall (ISO/IEC 24727-3:2008, 8.6.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.5). |
| 7F8F69 | Card-application interface service : CardApplication ServiceLoadCall | Marshalling of the call loading executable code that implements a card-application-service into the current card-application (ISO/IEC 24727-3:2008, 8.7.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.6). |
| 7F8F6A | Card-application interface service : CardApplication ServiceLoadReturn | Marshalling of the response to CardApplicationService-LoadCall. |
| 7F8F6B | Card-application interface service : CardApplication ServiceDeleteCall | Marshalling of the call deleting the named card-application-service, including the code that implements it, from the current card-application (ISO/IEC 24727-3:2008, 8.8 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.7). |

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**Table 9** *(continued)*

| Tag | Name of data element for remote SAL API call | Description and reference |
|---|---|---|
| 7F8F6C | Card-application interface service : CardApplication ServiceDeleteReturn | Marshalling of the response to CardApplicationService-DeleteCall (ISO/IEC 24727-3:2008, 8.8.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.7). |
| 7F8F6D | Card-application interface service : CardApplication ServiceDescribeCall | Marshalling of the call returning a URL or full description of the named card-application-service, whereby allowing the client-application to discover functionality beyond the standardized set of card-application-services described in ISO/IEC 24727-3 (ISO/IEC 24727-3:2008, 8.9 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.8). |
| 7F8F6E | Card-application interface service : CardApplication ServiceDescribeReturn | Marshalling of the response to CardApplicationService-DescribeCall (ISO/IEC 24727-3:2008, 8.9.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.8). |
| 7F8F6F | Card-application interface service : ExecuteActionCall | Marshalling of the call requesting access to an action in a card-application-service that is not defined in ISO/IEC 24727-3 (ISO/IEC 24727-3:2008, 8.10 and ISO/IEC 24727-3:2008/Cor 1:2010, C.5.9). |
| 7F8F70 | Card-application interface service : ExecuteActionReturn | Marshalling of the response to ExecuteActionCall (ISO/IEC 24727-3:2008, 8.10.5 ISO/IEC 24727-3:2008/Cor 1:2010, C.5.9). |
| 7F8F71 | Named data interface service : DataSetListCall | Marshalling of the call listing the names of data-sets defined in the current card-application (ISO/IEC 24727-3:2008, 9.2 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.1). |
| 7F8F72 | Named data interface service : DataSetListReturn | Marshalling of the response to DataSetListCall (ISO/IEC 24727-3:2008, 9.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.1). |
| 7F8F73 | Named data interface service : DataSetCreateCall | Marshalling of the call creating a new data-set in the current card-application (ISO/IEC 24727-3:2008, 9.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.2). |
| 7F8F74 | Named data interface dervice : DataSetCreateReturn | Marshalling of the response to DataSetCreateCall (ISO/IEC 24727-3:2008, 9.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.2). |
| 7F8F75 | Named data interface service : DataSetSelectCall | Marshalling of the call selecting the named data-set in the current card-application (ISO/IEC 24727-3:2008, 9.4 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.3). |
| 7F8F76 | Named data interface service : DataSetSelectReturn | Marshalling of the response to DataSetSelectCall (ISO/IEC 24727-3:2008, 9.4.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.3). |
| 7F8F77 | Named data interface service : DataSetDeleteCall | Marshalling of the call deleting the named data-set within the current card-application including all of the DSIs within that data-set (ISO/IEC 24727-3:2008, 9.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.4). |
| 7F8F78 | Named data interface service : DataSetDeleteReturn | Marshalling of the response to DataSetDeleteCall (ISO/IEC 24727-3:2008, 9.5.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.4). |
| 7F8F79 | Named data interface service : DSIListCall | Marshalling of the call listing the names of DSIs in the current data-set (ISO/IEC 24727-3:2008, 9.6 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.5). |
| 7F8F7A | Named data interface service : DSIListReturn | Marshalling of the response to DSIListCall (ISO/IEC 24727-3:2008, 9.6.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.5). |
| 7F8F7B | Named data interface service : DSICreateCall | Marshalling of the call creating a new DSI in the current data-set (ISO/IEC 24727-3:2008, 9.7 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.6). |
| 7F8F7C | Named data interface service : DSICreateReturn | Marshalling of the response to DSICreateCall (ISO/IEC 24727-3:2008, 9.7.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.6). |
| 7F8F7D | Named data interface service : DSIDeleteCall | Marshalling of the call deleting the named DSI from the current data-set (ISO/IEC 24727-3:2008, 9.8 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.7). |
| 7F8F7E | Named data interface service : DSIDeleteReturn | Marshalling of the response to DSIDeleteCall (ISO/IEC 24727-3:2008, 9.8.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.7). |
| 7F8F7F | Named data interface service : DSIWriteCall | Marshalling of the call replacing the contents of the named DSI in the current data-set with the data provided (ISO/IEC 24727-3:2008, 9.9 and ISO/IEC 24727-3:2008/Cor, 1, C.6.8). |
| 7F9000 | Named data interface service : DSIWriteReturn | Marshalling of the response to DSIWriteCall (ISO/IEC 24727-3:2008, 9.9.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.8). |

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**Table 9** *(continued)*

| Tag | Name of data element for remote SAL API call | Description and reference |
|---|---|---|
| 7F9001 | Named data interface service : DSIReadCall | Marshalling of the call returning the contents of the named DSI in the current data-set (ISO/IEC 24727-3:2008, 9.10 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.9). |
| 7F9002 | Named sata interface service : DSIReadReturn | Marshalling of the response to DSIReadCall (ISO/IEC 24727-3:2008, 9.10.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.6.9). |
| 7F9003 | Cryptographic interface service : EncipherCall | Marshalling of the call enciphering the provided data according to the cryptographic operation specified in the authentication protocol in the named differential-identity (ISO/IEC 24727-3:2008, 10.2 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.1). |
| 7F9004 | Cryptographic interface service : EncipherReturn | Marshalling of the response to EncipherCall (ISO/IEC 24727-3:2008, 10.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.1). |
| 7F9005 | Cryptographic interface service : DecipherCall | Marshalling of the call deciphering the provided data according to the cryptographic operation of the protocol in the named differential-identity (ISO/IEC 24727-3:2008, 10.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.2). |
| 7F9006 | Cryptographic interface service : DecipherReturn | Marshalling of the response to DecipherCall (ISO/IEC 24727-3:2008, 10.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.2). |
| 7F9007 | Cryptographic interface service : GetRandomCall | Marshalling of the call returning a random value generated in accordance with the protocol of the named differential-identity (ISO/IEC 24727-3:2008, 10.4 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.3). |
| 7F9008 | Cryptographic interface service : GetRandomReturn | Marshalling of the response to GetRandomCall (ISO/IEC 24727-3:2008, 10.4.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.3). |
| 7F9009 | Cryptographic interface service : HashCall | Marshalling of the call to hash the provided message according to the authentication protocol and marker of the named differential-identity (ISO/IEC 24727-3:2008, 10.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.4). |
| 7F900A | Cryptographic interface service : Hashreturn | Marshalling of the response to HashCall (ISO/IEC 24727-3:2008, 10.5.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.4). |
| 7F900B | Cryptographic interface service : SignCall | Marshalling of the call to sign the provided message according to the authentication protocol and marker of the named differential-identity (ISO/IEC 24727-3:2008, 10.6 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.5). |
| 7F900C | Cryptographic interface service : SignReturn | Marshalling of the response to SignCall (ISO/IEC 24727-3:2008, 10.6.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.5). |
| 7F900D | Cryptographic interface service : VerifySignCall | Marshalling of the call performing the verification of a digital signature using the authentication protocol and marker of the named differential-identity (ISO/IEC 24727-3:2008, 10.7 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.6). |
| 7F900E | Cryptographic interface service : VerifySignReturn | Marshalling of the response to VerifySignCall (ISO/IEC 24727-3:2008, 10.7.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.6). |
| 7F900F | Cryptographic interface service : VerifyCertificateCall | Marshalling of the call performing the verification of a digital certificate using the authentication protocol and marker of the named differential-identity (ISO/IEC 24727-3:2008, 10.8 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.7). |
| 7F9010 | Cryptographic interface service : VerifyCertificateReturn | Marshalling of the response to VerifyCertificateCall (ISO/IEC 24727-3:2008, 10.8.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.7.7). |
| 7F9011 | Differential-identity interface Service : DIDListCall | Marshalling of the call listing the names of the differential-identities defined within the current card-application (ISO/IEC 24727-3:2008, 11.2 and ISO/IEC 24727-3:2008/Cor 1:2010, C.8.1). |
| 7F9012 | Differential-identity interface Service : DIDListReturn | Marshalling of the response to DIDListCall (ISO/IEC 24727-3:2008, 11.2.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.8.1). |
| 7F9013 | Differential-identity interface Service : DIDCreateCall | Marshalling of the call creating a new differential-identity within the current card-application (ISO/IEC 24727-3:2008, 11.3 and ISO/IEC 24727-3:2008/Cor 1:2010, C.8.2). |
| 7F9014 | Differential-identity interface Service : DIDCreateReturn | Marshalling of the response to DIDCreateCall (ISO/IEC 24727-3:2008, 11.3.5 and ISO/IEC 24727-3:2008/Cor 1:2010, C.8.2). |

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