

# TS 101 204-1 V1.1.1 (1997-07)

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*Technical Specification*

**Identification card systems;  
Telecommunications IC cards and terminals;  
Test methods and conformance testing for EN 726-4;  
Part 1: Implementation Conformance Statement (ICS)  
proforma specification**

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*European Telecommunications Standards Institute*

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# Intellectual Property Rights

ETSI has not been informed of the existence of any Intellectual Property Right (IPR) which could be, or could become essential to the present document. However, pursuant to the ETSI Interim IPR Policy, no investigation, including IPR searches, has been carried out. No guarantee can be given as to the existence of any IPRs which are, or may be, or may become, essential to the present document.

## Foreword

This Technical Specification (TS) has been produced by the ETSI Project Pay Terminal and Systems (PTS). The present document was handed over to the CEN Secretariat in order to become an EN through the CEN approval process. ETSI has produced a set of TSs which are not a copy of any CEN published EN. The TSs are complete and consistent documents with references among themselves. It has been made clear in these TSs that they are contributions to the CEN work for publication as EN (after re-editing the references). Once published by CEN as EN, ETSI will withdraw its TS.

The present document is part 1 of a multi-part document covering Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-4, as identified below:

- Part 1: "Implementation Conformance Statement (ICS) proforma specification";**
- Part 2: "Test Suite Structure and Test Purposes (TSS&TP)";
- Part 3: "Abstract Test Suite (ATS) and Implementation eXtra Information for Testing (IXIT)".

### Overview of ETSI deliverables on EN 726 family

TS 101 200-1	"EN 726-1: Identification card systems; Telecommunications IC cards and terminals; Part 1: System overview".
TS 101 200-2	"EN 726-2: Identification card systems; Telecommunications IC cards and terminals; Part 2: Security framework".
TS 101 200-3	"EN 726-3: Identification card systems; Telecommunications IC cards and terminals; Part 3: Application independent card requirements".
TS 101 200-4	"EN 726-4: Identification card systems; Telecommunications IC cards and terminals; Part 4: Application independent card related terminal requirements".
TS 101 200-5	"EN 726-5: Identification card systems; Telecommunications IC cards and terminals; Part 5: Payment methods".
TS 101 200-6	"EN 726-6: Identification card systems; Telecommunications IC cards and terminals; Part 6: Telecommunications features".
TS 101 200-7	"EN 726-7: Identification card systems; Telecommunications IC cards and terminals; Part 7: Security module".

### Overview of ETSI deliverables on EN 726 conformance testing family

TS 101 203-1	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-3; Part 1: Implementation Conformance Statement (ICS) proforma specification".
TS 101 203-2	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-3; Part 2: Test Suite Structure and Test Purposes (TSS&TP)".
TS 101 203-3	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-3; Part 3: Abstract Test Suite (ATS) and Implementation eXtra Information for Testing (IXIT) proforma specification".
<b>TS 101 204-1</b>	<b>"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-4; Part 1: Implementation Conformance Statement (ICS) proforma specification".</b>
TS 101 204-2	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-4; Part 2: Test Suite Structure and Test Purposes (TSS&TP)".
TS 101 204-3	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-4; Part 3: Abstract Test Suite (ATS) and Implementation eXtra Information for Testing (IXIT) proforma specification".
TS 101 207-1	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-7; Part 1: Implementation Conformance Statement (ICS) proforma specification".
TS 101 207-2	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-7; Part 2: Test Suite Structure and Test Purposes (TSS&TP)".
TS 101 207-3	"Identification card systems; Telecommunications IC cards and terminals; Test methods and conformance testing for EN 726-7; Part 3: Abstract Test Suite (ATS) and Implementation eXtra Information for Testing (IXIT) proforma specification".

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# 1 Scope

To evaluate conformance of a particular implementation, it is necessary to have a statement of which capabilities and options have been implemented for a telecommunication specification. Such a statement is called an Implementation Conformance Statement (ICS).

The present document provides the ICS proforma for *Application independent card related terminal requirements*, as defined in TS 101 200-4 [1] in compliance with the relevant requirements, and in accordance with the relevant guidance given in ISO/IEC 9646-7 [11] and ETS 300 406 [9].

The supplier of an implementation which is claimed to conform to TS 101 200-4 [1] is required to complete a copy of the ICS proforma provided in annex A of the present document and is required to provide the information necessary to identify both the supplier and the implementation.

The present document imposes requirements only on implementations of TS 101 200-4 [1]. Implementations of standards other than TS 101 200-4 [1] may reside in the same system. The present document does not impose requirements on those implementations.

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# 2 Normative references

References may be made to:

- a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or
- b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or
- c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or
- d) publications without mention of a specific version, in which case the latest version applies.

A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] TS 101 200-4 version 1.2.1: "EN 726-4: Identification card systems; Telecommunications IC cards and terminals: Part 4: Application independent card related terminal requirements".
- [2] TS 101 200-3 version 1.2.1: "EN 726-3: Identification card systems; Telecommunications IC cards and terminals; Part 3: Application independent card requirements".
- [3] EN 27816-1 (1989): "Identification cards - Integrated circuit(s) cards with contacts - Part 1: Physical characteristics".
- [4] EN 27816-2 (1989): "Identification cards - Integrated circuit(s) cards with contacts - Part 2: Dimensions and locations of the contacts".
- [5] EN 27816-3 (1989): "Identification cards - Integrated circuit(s) cards with contacts - Part 3: Electronic signals and transmission protocols".
- [6] EN 27816-3:1992/A1 (1993): "Identification cards - Integrated circuit(s) cards with contacts - Part 3: Electronic signals and transmission protocols. Amendment 1: Protocol type T=1, asynchronous half duplex block transmission protocol".
- [7] EN 27816-3:1992/A2 (1995): "Identification cards - Integrated circuit(s) cards with contacts - Part 3: Electronic signals and transmission protocols. Amendment 2: Revision of protocol type selection".
- [8] ISO/IEC 7816-4 (1995): "Information technology - Identification cards - Integrated circuit(s) cards with contacts - Part 4: Interindustry commands for interchange".

- [9] ETS 300 406 (1995): "Methods for Testing and Specification (MTS); Protocol and profile conformance testing specifications; Standardization methodology".
- [10] ISO/IEC 9646-1 (1994): "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 1: General concepts".
- [11] ISO/IEC 9646-7 (1995): "Information technology - Open systems interconnection - Conformance testing methodology and framework - Part 7: Implementation Conformance Statements".
- [12] CCITT Recommendation No. 5 V.3 / ISO 646 (1983): "Information processing - ISO 7-bits coded characters set for information exchange".

## 3 Definitions and abbreviations

### 3.1 Definitions

For the purposes of the present document, the following definitions apply:

- terms defined in EN 27816 parts 1 to 3; [3] to [7];
- terms defined in ISO/IEC 7816-4 [8];
- terms defined in ISO/IEC 9646-1 [10] and in ISO/IEC 9646-7 [11].

In particular, the following terms defined in ISO/IEC 9646-1 [10] apply:

**Implementation Conformance Statement (ICS):** A statement made by the supplier of an implementation or system claimed to conform to a given specification, stating which capabilities have been implemented. The ICS can take several forms: protocol ICS, profile ICS, profile specific ICS, information object ICS, etc.

**ICS proforma:** A document, in the form of a questionnaire, which when completed for an implementation or system becomes an ICS.

### 3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

AC	Access Condition(s)
ATC	Abstract Test Case
ATR	Answer To Reset
ATS	Abstract Test Suite
BCD	Binary Code Decimal
CAD	Card Accepting Device (this includes only the mechanics)
CHV	Card Holder Verification
CLA	CLAss
CS	Cyclic Structure
DF	Dedicated Files
EF	Elementary Files
GR	GRaphical form (TTCN)
IC	Integrated Circuit
ICS	Implementation Conformance Statement
ID	IDentifier
IFD	InterFace Device, used as short form for a terminal including CAD
INS	INstruction
IUT	Implementation Under Test
IXIT	Implementation eXtra Information for Testing
LFS	Linear Fixed Structure
LM	Logical Model
LVS	Linear Variable Structure

MAC	Message Authentication Code
MF	Master File
MP	Machine Processable form (TTCN)
PC	Physical Characteristics
PDU	Protocol Data Unit
RC	Return Code
SCS	System Conformance Statement
SM	Security Module
SP	Signals and Protocols
SUT	System Under Test
TC	Test Case
TP	Test Purposes
TR	TRansparent
TSS	Test Suite Structure
TTCN	Tree and Tabular Combined Notation
UC	User Card

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## 4 Conformance to this ICS proforma specification

If it claims to conform to the present document, the actual ICS proforma to be filled in by a supplier shall be technically equivalent to the text of the ICS proforma given in annex A, and shall preserve the numbering/naming and ordering of the proforma items.

An ICS which conforms to this ICS proforma specification shall:

- 1) describe an implementation which claims to conform to TS 101 200-4 [1];
- 2) be a conforming ICS proforma completed in accordance with the instructions for completion given in clause A.1;
- 3) include the information necessary to uniquely identify both the supplier and the implementation.



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## Annex A (normative): ICS proforma for "Application independent card related terminal requirements" (TS 101 200-4)

Notwithstanding the provisions of the copyright clause related to the text of the present document, ETSI grants that users of the present document may freely reproduce the ICS proforma in this annex so that it can be used for its intended purposes and may further publish the completed ICS.
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### A.1 Guidance for completing the ICS proforma

#### A.1.1 Purposes and structure

The purpose of this ICS proforma is to provide a mechanism whereby a supplier of an implementation of the application independent card related terminal requirements defined in reference specification TS 101 200-4 [1] may provide information about the implementation in a standardized manner.

The ICS proforma is subdivided into subclauses for the following categories of information:

- A.1 Guidance for completing the ICS proforma
- A.2 Identification of the implementation
- A.3 Identification of the standard
- A.4 Global statement of conformance
- A.5 Capabilities for the terminal
  - A.5.1 General terminal characteristics
  - A.5.2 Physical characteristics
    - A.5.2.1 Mechanical interface between the IFD and the IC card
    - A.5.2.2 Contacting of the IC card
    - A.5.2.3 User/terminal interface
    - A.5.2.4 Card holder verification module
    - A.5.2.5 Acceptance of memory cards
  - A.5.3 Electronic signals and transmission protocols
    - A.5.3.1 Supported transmission types
    - A.5.3.2 Supply voltage  $V_{CC}$
    - A.5.3.3 Supply current
    - A.5.3.4 Programming voltage
    - A.5.3.5 Duty cycle
    - A.5.3.6 Guard time
  - A.5.4 Security facilities
    - A.5.4.1 Security Module (SM)
  - A.5.5 Supported commands
  - A.5.6 Commands
  - A.5.7 Error handling
  - A.5.8 Functional requirements of the card terminal
    - A.5.8.1 Language for display messages
    - A.5.8.2 Display messages
    - A.5.8.3 Display of user data
    - A.5.8.4 Basic operations
      - A.5.8.4.1 Removal of the IC card
      - A.5.8.4.2 Escape possibility
      - A.5.8.4.3 CHV-entry
      - A.5.8.4.4 CHV-change
      - A.5.8.4.5 Language choice/change
      - A.5.8.4.6 Selection of an application
    - A.5.8.5 Audio messages

## A.1.2 Abbreviations and conventions

The ICS proforma contained in this annex comprises information in tabular form in accordance with the guidelines presented in ISO/IEC 9646-7 [11].

### Item column

The item column contains a number which identifies the item in the table.

### Item description column

The item description column describes in free text each respective item (e.g. parameters, timers, etc.). It implicitly means "is <item description> supported by the implementation?".

### Status column

The following notations, defined in ISO/IEC 9646-7 [11], are used for the status column:

m	mandatory - the capability is required to be supported.
o	optional - the capability may be supported or not.
n/a	not applicable - in the given context, it is impossible to use the capability.
x	prohibited (excluded) - there is a requirement not to use this capability in the given context.
o.i	qualified optional - for mutually exclusive or selectable options from a set. "i" is an integer which identifies an unique group of related optional items and the logic of their selection which is defined immediately following the table.
ci_j	conditional - the requirement on the capability ("m", "o", "x" or "n/a") depends on the support of other optional or conditional items stated in table "i" item "j". The unique conditional status expression which is defined immediately following the table.
c:	conditional relative to higher level - the requirement on the capability ("m", "o", "x" or "c") depends on the support of a higher level item. For example, item 2.1 with status c:m means that the item shall be supported if item 2 is supported. The notation does not apply following a mandatory requirement, although an index may be used to define a dependency. For example item 3 is mandatory, 3.1 is optional, indicated by an "o", although not fulfilling 3 makes 3.1 "n/a".

### Support column

The support column shall be filled in by the supplier of the implementation. The following common notations, defined in ISO/IEC 9646-7 [11], are used for the support column:

Y or y	supported by the implementation.
N or n	not supported by the implementation.
N/A, n/a or -	no answer required (allowed only if the status is n/a, directly or after evaluation of a conditional status).

If this ICS proforma is completed in order to describe a multiple-profile support in a system, it is necessary to be able to answer that a capability is supported for one profile and not supported for another. In that case, the supplier shall enter the unique reference to a conditional expression, preceded by "?" (e.g. ?3). This expression shall be given in the space for comments provided at the bottom of the table. It uses predicates defined in the SCS, each of which refers to a single profile and which takes the value TRUE if and only if that profile is to be used.

EXAMPLE 1: ?3: IF prof1 THEN Y ELSE N

It is also possible to provide a comment to an answer in the space provided at the bottom of the table.

## References to items

For each possible item answer (answer in the support column) within the ICS proforma exists a unique reference, used, for example, in the conditional expressions. It is defined as the table identifier, followed by a solidus character "/", followed by the item number in the table. If there is more than one support column in a table, the columns shall be discriminated by letters (a, b, etc.), respectively.

EXAMPLE 2: A.5/4 is the reference to the answer of item 4 in table 5 of annex A.

EXAMPLE 3: A.6/3b is the reference to the second answer (i.e. in the second support column) of item 3 in table 6 of annex A.

## Prerequisite line

A prerequisite line takes the form: Prerequisite: <predicate>.

A prerequisite line after a clause or table title indicates that the whole clause or the whole table is not required to be completed if the predicate is FALSE.

## A.1.3 Instructions for completing the ICS proforma

The supplier of the implementation shall complete the ICS proforma in each of the spaces provided. In particular, an explicit answer shall be entered, in each of the support boxes provided, using the notation described in subclause A.1.2.

If necessary, the supplier may provide additional comments in space at the bottom of the tables, or separately on sheets of paper.

More detailed instructions are given at the beginning of the different subclauses of the ICS proforma.

---

## A.2 Identification of the implementation

Identification of the Implementation Under Test (IUT) and the system in which it resides (the System Under Test (SUT)) should be filled in so as to provide as much detail as possible regarding version numbers and configuration options.

The product supplier information and client information should both be filled in if they are different.

A person who can answer queries regarding information supplied in the ICS should be named as the contact person.

### A.2.1 Date of the statement

.....

### A.2.2 Implementation Under Test (IUT) identification

IUT name:

.....

.....

IUT version:

.....

### A.2.3 System Under Test (SUT) identification

SUT name:

.....  
.....

Hardware configuration:

.....  
.....  
.....

Operating system:

.....

### A.2.4 Product supplier

Name:

.....

Address:

.....  
.....  
.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....  
.....  
.....

## A.2.5 Client (if different from product supplier)

Name:

.....

Address:

.....

.....

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

## A.2.6 ICS contact person

(A person to contact if there are any queries concerning the content of the ICS)

Name:

.....

Telephone number:

.....

Facsimile number:

.....

E-mail address:

.....

Additional information:

.....

---

## A.3 Identification of the standard

This ICS proforma applies to the following standard:

**TS 101 200-4 [1]:** "Identification card systems - Telecommunications integrated circuit(s) cards and terminals - Part 4: Application independent card related terminal requirements".

---

## A.4 Global statement of conformance

Are all mandatory capabilities implemented? (Yes/No) .....

NOTE: Answering "No" to this question indicates non-conformance to the standard specifications. Non-supported mandatory capabilities are to be identified in the ICS, with an explanation of why the implementation is non-conforming, on pages attached to the ICS proforma.

---

## A.5 Capabilities for the terminal

### A.5.1 General terminal characteristics

**Table A.1: General terminal characteristics**

Item	General terminal characteristics	Reference	Status	Support
1	Terminal a mobile equipment	5.2, 5.4, 5.5, 5.6	o	
2	Terminal for public use	4.3, 4.5	o	

Comments:

### A.5.2 Physical characteristics

#### A.5.2.1 Mechanical interface between the IFD and the IC card

**Table A.2: Mechanical interface**

Item	Mechanical interface	Reference	Status	Support
1	Physical characteristics in accordance with EN 27816-1, 2 [3], [4]	4.1	m	
2	Accepts ID-1 card with embossing	4.1	o	
2.1	Embossing on same side as contacts		c:m	
3	Accepts IC card with magnetic stripe	4.1, 4.4	o	
3.1	Magnetic track on opposite side of contacts	4.1	c:m	

Comments:

### A.5.2.2 Contacting of the IC card

**Table A.3: Contacting the IC card**

Item	Contacting the IC card	Reference	Status	Support
1	No IC card contacts short circuited during insertion of the IC card	4.2	m	
2	No terminal contacts short circuited during insertion of the IC card	4.2	m	
3	IC card not damaged when inserted into terminal	4.2	m	
4	Terminal not damaged by insertion of the IC card	4.2	m	
5	No IC card contacts short circuited when the IC card is pulled out at < 1 m/s	4.2	m	
6	No terminal contacts short circuited when the IC card is pulled out at < 1 m/s	4.2	m	
7	IC card not damaged when pulled out at < 1 m/s	4.2	m	
8	Terminal not damaged when the IC card is pulled out at < 1 m/s	4.2	m	
9	Activation and deactivation of the contacts in accordance with EN 27816-3 [5] and EN 27816-3/A1 [6]	4.2	m	
10	Terminal operates normal after removal of short circuits between any contacting elements	4.2	m	
11	Shape and material of contacting elements do not damage the IC card	4.2	m	
12	Contact force is large enough to ensure contact even in extreme environmental conditions (ed. 1)	4.2	m	
13	The contact force is not greater than 0,5 N per contact.	4.2	m	
14	Shape of contacts and way of contacting ensures proper contact even for polluted cards	4.2	m	
NOTE: The service environment is application dependent. Supplier shall define the environment.				

Comments:

### A.5.2.3 User/terminal interface

**Table A.4: User/terminal interface**

Item	User/terminal interface	Reference	Status	Support
1	IC card accepted when inserted with short side first, where contacts are situated	4.3	m	
2	IC card accepted when inserted with contacts upwards	4.3	o (note)	
3	Terminal for public use	4.3	o	
3.1	Indications for correct orientation of the IC card given to user	4.3	c:m	
4	Card always accessible to user	4.3	m	
5	Removal of the IC card at any time does not leave terminal in an invalid or unknown logical state	4.3	m	
NOTE: TS 101 200-4 [1] states preference for this option.				

Comments:

### A.5.2.4 Card holder verification module

**Table A.5: CHV module**

Item	CHV module	Reference	Status	Support
1	CHV-entry	4.5	o	
1.1	CHV-entry numeric	4.5	c:o.1	
1.2	CHV-entry alphanumeric	4.5	c:o.1	
1.3	Provisions taken to avoid easy observation of CHV-entry	4.5	c:c5_1	
1.4	Plain text CHV does never leave the terminal except when presented to the IC card	4.5	c:m	
2	Biometric information used	4.5	o	

o.1: It is mandatory to support at least one of the options.

c5\_1: IF A.1/2 THEN m ELSE o -- Terminal for public use

Comments:

### A.5.2.5 Acceptance of memory cards

**Table A.6: Acceptance of memory cards**

Item	Acceptance of memory cards	Reference	Status	Support
1	Memory cards accepted	4.6	o	

Comments:

### A.5.3 Electronic signals and transmission protocols

**Table A.7: Electronic signals and transmission protocols**

Item	Electronic signals and transmission protocols	Reference	Status	Support
1	Electronic signals and asynchronous transmission protocols in accordance with EN 27816-3 [5] and ISO/IEC 7816-3/A1 [6]	5	m	
2	IC card conforming to EN 27816-3 [5] not damaged when used in terminal	5	m	

Comments:



### A.5.3.1 Supported transmission types

**Table A.8: Supported transmission types**

Item	Supported transmission types	Reference	Status	Support
1	Asynchronous transmission	5.1	m	
1.1	Card with internal clock	5.1	o.2	
1.2	Cards with external clock	5.1	o.2	
1.3	Reset behaviour of the IC card in accordance with EN 27816-3 [5] clause 5 and subclause 6.1	5.1	m	
2	Synchronous transmission	5.1	o	
2.1	Reset behaviour of the IC card in accordance with EN 27816-3 [5] clause 5 and subclause 6.2	5.1	c:o	
2.2	Conditions for asynchronous IC card supplied first	5.1	c:m	

o.2: It is mandatory to support at least one of the options.

Comments:

### A.5.3.2 Supply voltage $V_{CC}$

**Table A.9: Supply voltage  $V_{CC}$**

Item	Supply voltage $V_{CC}$	Reference	Status	Support
1	$V_{CC}$ according to EN 27816-3 [5] and EN27816-3/A1 [6]	5.2	c9_1	
2	$V_{CC} = 5\text{ V} \pm 10\%$	5.2	c9_2	

Comments:

c9\_1: IF NOT A.1/1 THEN m -- Terminal NOT a mobile equipment

c9\_2: IF A.1/1 THEN m -- Terminal a mobile equipment

### A.5.3.3 Supply current

**Table A.10: Supply current**

Item	Supply current	Reference	Status	Support
1	Terminal is a portable battery or line operated equipment	5.3	o.3	
1.1	Capable of supplying at least 10 mA to the IC card	5.3	c:m	
2	Terminal not a portable battery operated equipment	5.3	o.3	
2.1	Capable of supplying at least 20 mA to the IC card	5.3	c:m	
3	Power supply able to counteract spikes generated by the IC card having a charge of up to 40 nAs with a duration of up to 400 ns and an amplitude of up to 200 mA.	5.3	m	

o.3: It is mandatory to support at least one of the options.

Comments:

### A.5.3.4 Programming voltage

**Table A.11: Programming voltage**

Item	Programming voltage	Reference	Status	Support
1	$V_{PP}$ contact supply same voltage as $V_{CC}$ contact for European telecommunication cards	5.4	c11_1	
2	$V_{PP}$ contact supply voltages in accordance with EN 27816-3 [5] and ISO/IEC 7816-3/A1 [6]	5.4	c11_1	

c11\_1: IF A.6/1 THEN m -- Memory cards accepted

Comments:

### A.5.3.5 Duty cycle

**Table A.12: Duty cycle**

Item	Duty cycle	Reference	Status	Support
1	Duty cycle in accordance with EN 27816-3 [5] and ISO/IEC 7816-3/A1 [6]	5.5	c9_1	
2	Duty cycle for asynchronous transmissions in range from 40 % to 60 %	5.5	c9_2	

Comments:

### A.5.3.6 Guard time

**Table A.13: Guard time**

Item	Guard time	Reference	Status	Support
1	Guardtime in accordance with EN 27816-3 [5] and ISO/IEC 7816-3/A1 [6]	5.6	c9_1	
2	Guardtime in accordance with TS 101 200-3 [2] subclause 5.5	5.6	c9_2	

Comments:

## A.5.4 Security facilities

### A.5.4.1 Security Module (SM)

**Table A.14: Security Module**

Item	Security module	Reference	Status	Support
1	Application requires a SM to handle at least some functions/commands	6	o	
1.1	SM resides in terminal	6.1	c:o.4	
2	SM - Interface not part of the terminal	6.1.2	o	
2.2	SM resides elsewhere	6.1	c:o.4	

o.4: It is mandatory to support at least one of the options.

Comments:

## A.5.5 Supported commands

For card profile 99 (mono-application cards) the actual profile shall be stated in table A.15 in terms of a list of supported commands.

The following table contains all commands. Supporting any of these automatically implies a support of the relevant application procedures and constraints as defined in clause 8 of TS 101 200-3 [2].

**Table A.15: Supported commands**

Item	Commands	Reference subclause of TS 101 200-3 [2]	Status	Support
1	SELECT	9.2.1	o	
2	STATUS	9.2.2	o	
3	CREATE FILE	9.2.3	o	
4	DELETE FILE	9.2.4	o	
5	EXTEND	9.2.5	o	
6	EXECUTE	9.2.6	o	
7	UPDATE BINARY	9.2.7	o	
8	UPDATE RECORD	9.2.8	o	
9	CREATE RECORD	9.2.9	o	
10	READ BINARY	9.2.10	o	
11	READ BINARY STAMPED	9.2.11	o	
12	READ RECORD	9.2.12	o	
13	READ RECORD STAMPED	9.2.13	o	
14	SEEK	9.2.14	o	
15	VERIFY CHV	9.2.15	o	
16	CHANGE CHV	9.2.16	o	
17	DISABLE CHV	9.2.17	o	
18	ENABLE CHV	9.2.18	o	
19	UNBLOCK CHV	9.2.19	o	
20	INVALIDATE	9.2.20	o	
21	REHABILITATE	9.2.21	o	
22	INTERNAL AUTHENTICATION	9.2.22	o	
23	ASK RANDOM	9.2.23	o	
24	GIVE RANDOM	9.2.24	o	
25	EXTERNAL AUTHENTICATION	9.2.25	o	
26	CLOSE APPLICATION	9.2.26	o	
27	WRITE BINARY	9.2.27	o	
28	WRITE RECORD	9.2.28	o	
29	LOCK	9.2.29	o	
30	DECREASE	9.2.30	o	
31	DECREASE STAMPED	9.2.31	o	
32	INCREASE	9.2.32	o	
33	INCREASE STAMPED	9.2.33	o	
34	LOAD KEYFILE	9.2.34	o	
35	GET RESPONSE	9.2.35	o	
36	ENVELOPE PUT	9.2.36	o	

Comments:

## A.5.6 Commands

**Table A.16: Commands**

Item	Commands	Reference	Status	Support
1	Mapping principles in accordance with TS 101 200-3 [2] subclause 9.1	8	m	
2	Coding of commands for Byte protocol (T=0) in accordance with TS 101 200-3 [2] subclause 9.1.3	8	o.5	
3	Coding of commands for block protocol (T=1) in accordance with TS 101 200-3 [2] subclause 9.1.3	8	o.5	
4	Access condition coding in accordance with TS 101 200-3 [2] subclause 9.5	8	m	
5	Terminal expects IC card coding of EF <sub>CHV</sub> and EF <sub>CHV</sub> contents to be in accordance with TS 101 200-3 [2] subclauses 10.1, 10.6 and 10.7	8	m	
6	Terminal shall not enter an invalid or unknown logical state when an error condition is returned by the IC card.	8	m	

o.5: It is mandatory to support at least one of the options.

Comments:

## A.5.7 Error handling

**Table A.17: Error handling**

Item	Error handling	Reference	Status	Support
1	Error recovery procedures at the transport level in accordance with EN 27816-3:1992 [5] and ISO/IEC 7816-3:1989/A1:1992 [6]	9	m	
2	Unrecoverable errors signalled to the user	9	o	
2.1	Error cause displayed in plain text	9	c:o (note)	
2.1.1	Text displayed for SW = 98 08: Card blocked, contact application provider	9	c:m	
2.1.2	Text displayed for SW = 98 04: Wrong CHV	9	c: c17_1	
3	Status of remaining CHV attempts requested from the corresponding EF <sub>CHV</sub>	9	c17_1	
4	Remaining CHV attempts displayed	9	c17_2	

NOTE 1: Terminals having an alphanumeric display should display error causes in plain text.

c17\_1: IF A.5/1 THEN m -- CHV-entry supported

c17\_2: IF A.5/1 THEN o -- CHV-entry supported

Comments:

NOTE 2: Terminals having an alphanumeric display should display error causes in plain text.

## A.5.8 Functional requirements of the card terminal

### A.5.8.1 Language for display messages

Prerequisite: A.1/2 -- Terminal for public use

**Table A.18: Language for display messages**

Item	Language for display messages	Reference	Status	Support
1	Two possible languages	10.1	m	
2	English language	10.1	o	

Comments:

### A.5.8.2 Display messages

Prerequisite: A.1/2 -- Terminal for public use

**Table A.19: Display texts**

Item	Display texts similar to	Reference	Status	Support
1	"Insert your card"	10.2	o	
2	"Remove your card"	10.2	o	
3	"Card refused" (i.e. invalid, locked)	10.2	o	
4	"Re-insert the card" (i.e. after a recovered malfunction)	10.2	o	
5	"Enter your Card Holder Verification number (CHV)"	10.2	c17_2	
6	"Wrong Card Holder Verification number (CHV)"	10.2	c17_2	
7	"Enter your old Card Holder Verification number (CHV)"	10.2	c17_2	
8	"Re-enter Card Holder Verification number (CHV)"	10.2	c17_2	
9	"Service locked"	10.2	o	
10	"Service not available"	10.2	o	
11	"Terminal out of service"	10.2	o	

Comments:

### A.5.8.3 Display of user data

Prerequisite: A.1/2 -- Terminal for public use

**Table A.20: Display of user data**

Item	Display of user data	Reference	Status	Support
1	User able to suppress displaying of user related data	10.2	m	

Comments:

## A.5.8.4 Basic operations

### A.5.8.4.1 Removal of the IC card

**Table A.21: Removal of IC card**

Item	Removal of the card	Reference	Status	Support
1	All data related to the IC card, except for relevant transaction data, erased when the IC card is removed (ed. 1)	10.3.1	m	

Comments:

### A.5.8.4.2 Escape possibility

**Table A.22: Escape possibility**

Item	Escape possibility	Reference	Status	Support
1	User can abort current operation	10.3.2	m	
1.1	Abortion causes IC card to be rejected	10.3.2	m	
1.2	Abortion causes terminal to return to idle state	10.3.2	m	

Comments:

### A.5.8.4.3 CHV-entry

Prerequisite: A.5/1 -- CHV-entry supported

**Table A.23: CHV-entry**

Item	CHV-entry	Reference	Status	Support
1	CHV is in the range of 4 to 8 characters	10.3.3	m	
2	Number of characters entered visualized	10.3.3	o	
3	Values of entered CHV not displayed in plain text	10.3.3	m	
4	Values of entered CHV not disclosed by audible feedback	10.3.3	m	
5	End-of-CHV character	10.3.3	m	

Comments:

**Table A.24: CHV presentation to IC card**

Item	CHV presentation	Reference	Status	Support
1	8-Bytes long	10.3.3	m	
2	Left aligned	10.3.3	m	
3	Padded at the right with binary 1	10.3.3	m	
4	Encipherment of CHV	10.3.3	o	
4.1	Padding before encipherment	10.3.3	c:m	
5	Telecommunication applications	4.5, 10.3.3	o	
5.1	CHV-data coded in accordance with CCITT Recommendation No. 5 V.3 / ISO 646 [12]	4.5, 10.3.3	c:m	
6	1 Byte per CHV-character	10.3.3	o.6	
7	1 nibble per digit	10.3.3	o.6	

o.6: It is mandatory to support at least one of the options.

Comments:

#### A.5.8.4.4 CHV-change

Prerequisite: A.5/1 -- CHV-entry supported

**Table A.25: CHV-change**

Item	CHV-change	Reference	Status	Support
1	CHV-change	10.3.4	o	
1.1	Old CHV required	10.3.4	c:m	
1.2	New CHV entered twice	10.3.4	c:m	
1.3	CHV-change activated only after match of the two entries of the new CHV	10.3.4	c:m	
1.4	Operation aborted when two entries of new CHV differ	10.3.4	c:m	
1.5	User notified that CHV-change operation was unsuccessful when two entries of new CHV differ	10.3.4	c:m	
1.6	Old CHV valid after unsuccessful CHV-change operation	10.3.4	c:m	
2	Escape possible during CHV-entry	10.3.4	o	
3	Editing possible during CHV-entry	10.3.4	o	

Comments:

#### A.5.8.4.5 Language choice/change

**Table A.26: Language choice and change**

Item	Language choice/change	Reference	Status	Support
1	List of language preference read in EF <sub>LANG</sub> of the IC card	10.3.5	m	
1.1	Highest preference available both in the IC card and in the terminal chosen	10.3.5	m	
1.2	Highest preference of terminal chosen when no conformity is found	10.3.5	m	
2	User is able to change the language at least in the beginning of the card session	10.3.5	o	

Comments:

## A.5.8.4.6 Selection of an application

Table A.27: Application selection

Item	Selection of an application	Reference	Status	Support
1	Mono-application	10.3.6	o.7	
1.1	Automatic selection of the application	10.3.6	c:m	
2	Multi-application	10.3.6	o.7	
2.1	Only the subset of applications supported by both the terminal and the card, and not invalidated in the IC card, shown to the user	10.3.6	c:o.8 (note)	
2.2	Complete directory shown to the user	10.3.6	c:o.8 (note)	
3	Only the verbal description of the relevant application(s), as read out of EF <sub>DIR</sub> on the MF level of the IC card, displayed	10.3.6	c29_1	
4	Card expiry date, given in EF <sub>ID</sub> at MF level of IC card checked against real time clock in terminal/host	10.3.6	o	

NOTE: TS 101 200-4 [1] states preference for showing the complete directory.

o.7: It is mandatory to support exactly one of these items.

o.8: It is mandatory to support exactly one of these items.

c29\_1: EF<sub>DIR</sub> exists

Comments:

## A.5.8.5 Audio messages

Table A.28: Audio messages

Item	Audio messages	Reference	Status	Support
1	User is guided by means of audio messages	10.4	o	
1.1	An audio message is given at the end of the card session to remind the user to remove the card	10.4	c:o	



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## History

<b>Document history</b>		
V1.1.1	July 1997	Publication