



Smart Cards; Smart Card Platform Requirements Stage 1 (Release 13)

STANDARD PREVIEW
(standards.iteh.ai)
Full standard: <https://standards.iteh.ai/catalog/standards/sls/0c272d2-e714-49df-9797-1556bcb8635/etsi-ts-102-412-v13-0-2018-07>

ReferenceRTS/SCP-R00002vd00

Keywordssmart card

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://www.etsi.org/standards-search>

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the only prevailing document is the print of the Portable Document Format (PDF) version kept on a specific network drive within ETSI Secretariat.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommiteeSupportStaff.aspx>

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2018.

All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members.

3GPP™ and **LTE™** are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

oneM2M logo is protected for the benefit of its Members.

GSM® and the GSM logo are trademarks registered and owned by the GSM Association.

Contents

Intellectual Property Rights	10
Foreword.....	10
Modal verbs terminology.....	10
Introduction	11
1 Scope	12
2 References	12
2.1 Normative references	12
2.2 Informative references.....	13
3 Definitions and abbreviations.....	14
3.1 Definitions.....	14
3.2 Abbreviations	16
4 Requirements.....	19
4.0 General	19
4.1 Run time environment timing constraints	20
4.1.1 Abstract (informative).....	20
4.1.2 Background (informative).....	20
4.1.2.1 Use case - Network authentication.....	20
4.1.3 Requirements	20
4.1.4 Interaction with existing features (informative).....	20
4.2 Launch Application feature	20
4.2.1 Abstract (informative).....	20
4.2.2 Background (informative).....	20
4.2.3 Requirements	21
4.2.4 Interaction with existing features (informative).....	22
4.3 Mapped file support on the UICC	22
4.3.1 Abstract (informative).....	22
4.3.2 Background (informative).....	22
4.3.3 Requirements	22
4.3.4 Interaction with existing features (informative).....	23
4.4 Extension of logical channels.....	23
4.4.1 Abstract (informative).....	23
4.4.2 Background (informative).....	23
4.4.2.1 Typical problem situation	23
4.4.2.2 Possible problem solution	23
4.4.2.3 Use cases	23
4.4.2.3.1 Use case - JSR 177 applications	23
4.4.2.3.2 Use case - PC connection	23
4.4.3 Requirements	23
4.4.3.1 General requirements	23
4.4.3.2 Backward compatibility requirements.....	24
4.4.4 Interaction with existing features (informative).....	24
4.5 Secure channel to secure local terminal interfaces	24
4.5.1 Abstract (informative).....	24
4.5.2 Background (informative).....	24
4.5.2.0 General	24
4.5.2.1 Use case - User interface.....	25
4.5.2.2 Use case - UICC as a control point for device management	26
4.5.2.3 Use case - DRM and distributed applications	27
4.5.2.4 Use case - Toolkit commands protection	28
4.5.3 Requirements	29
4.5.3.0 General	29
4.5.3.1 End point requirements	29
4.5.3.2 Integrity requirements.....	29
4.5.3.3 Confidentiality requirements.....	29

4.5.3.4	Authentication requirements	30
4.5.3.5	Audit/Compliance requirements	30
4.5.3.6	Policy requirements.....	30
4.5.3.7	Transport Protocol requirements.....	30
4.5.4	Interaction with existing features (informative).....	30
4.5.4.1	Logical Channels.....	30
4.5.4.2	CAT access over a modem interface.....	30
4.6	Authenticate command longer than 255 bytes.....	30
4.6.1	Abstract (informative).....	30
4.6.2	Background (informative).....	31
4.6.2.1	Use case - EAP packet exchange	31
4.6.3	Requirements	31
4.6.3.1	General requirements	31
4.6.3.2	Backward compatibility requirements.....	31
4.6.4	Interaction with existing features (informative).....	31
4.7	CAT mechanisms to indicate the bearer connection status	31
4.7.1	Abstract (informative).....	31
4.7.2	Background (informative).....	31
4.7.2.1	Use case - Availability of network bearers	31
4.7.2.2	Use case - Network connection temporarily lost.....	32
4.7.2.3	Use case - Availability of local bearers.....	32
4.7.3	Requirements	32
4.7.3.1	Requirement 1 - Network bearer connection status	32
4.7.3.2	Requirement 2 - Local bearer connection status	32
4.7.4	Interaction with existing features (informative).....	32
4.8	New UICC-Terminal interface	32
4.8.1	Abstract (informative).....	32
4.8.2	Background (informative).....	33
4.8.2.0	General	33
4.8.2.1	Use case - multimedia file management	33
4.8.2.2	Use case - MMI on UICC	33
4.8.2.3	Use case - real-time multimedia data encryption/decryption	33
4.8.2.4	Use case - storage of terminal applications on the UICC.....	33
4.8.2.5	Use case - direct and indirect UICC connection to a PC.....	33
4.8.2.6	Use case - web server on Smart Card.....	34
4.8.2.7	Use case - antivirus on UICC.....	34
4.8.2.8	Use case - big phonebook management from the UICC	34
4.8.2.9	Use case - reduce personalization time	34
4.8.2.10	Use case - generic TCP/IP connectivity.....	34
4.8.3	Requirements	35
4.8.3.1	General requirements	35
4.8.3.2	Backward compatibility requirements.....	35
4.8.4	Interaction with existing features (informative).....	36
4.9	UICC based application acting as a server	36
4.9.1	Abstract (informative).....	36
4.9.2	Background (informative).....	36
4.9.3	Requirements	36
4.9.4	Interaction with existing features (informative).....	36
4.10	API for applications registered to a Smart Card Web Server	36
4.10.1	Abstract (informative).....	36
4.10.2	Background (informative).....	37
4.10.2.0	General	37
4.10.2.1	Registration of an application to the SCWS.....	37
4.10.2.2	Data exchange between SCWS and application.....	37
4.10.2.3	Issuing Proactive Commands	37
4.10.3	Requirements	37
4.10.4	Interaction with existing features (informative).....	38
4.11	Specific UICC environmental conditions.....	38
4.11.1	Abstract (informative).....	38
4.11.2	Background (informative).....	38
4.11.2.0	General	38
4.11.2.1	Use case - Automotive service	38

4.11.2.2	Use case - Remote monitoring camera.....	38
4.11.2.3	Use case - Remote stock monitoring for vending machines	38
4.11.2.4	Use case - Online electronic advertising board	38
4.11.3	Considerations (informative)	38
4.11.4	Requirements	39
4.11.4.1	Requirement 1: Temperature range	39
4.11.4.2	Requirement 2: Humidity	39
4.11.5	Interaction with existing features (informative).....	39
4.12	Introduction of high density memory technology in UICC	39
4.12.1	Abstract (informative).....	39
4.12.2	Background (informative).....	39
4.12.2.1	Use case - Enhanced UICC features.....	39
4.12.3	Requirements	40
4.12.4	Interaction with existing features (informative).....	40
4.13	Power supply indication mechanism	40
4.13.1	Abstract (informative).....	40
4.13.2	Background (informative).....	40
4.13.2.1	Use case - generic situation	40
4.13.2.2	Use case - USIM application with toolkit applications	41
4.13.3	Requirements	41
4.13.3.1	General Requirements	41
4.13.3.2	Backward compatibility requirements.....	41
4.13.4	Interaction with existing features (informative).....	41
4.14	Internet Connectivity up to UICC applications	42
4.14.1	Abstract (informative).....	42
4.14.2	Use Cases (informative).....	42
4.14.2.0	General	42
4.14.2.1	Use Case - Card OTA management	42
4.14.2.2	Use Case - User local access from the terminal to a card server	42
4.14.2.3	Use Case - Remote access to an identity server in the card	43
4.14.2.4	Use Case - User access from a locally connected device to a card service	43
4.14.3	Requirements	43
4.14.4	Interaction with existing features (informative).....	43
4.15	Contactless UICC services	43
4.15.1	Abstract (informative).....	43
4.15.2	Background (informative).....	44
4.15.2.0	General	44
4.15.2.1	Use case - Access	44
4.15.2.1.1	System aspects of use case	44
4.15.2.1.2	UICC role in use case	44
4.15.2.2	Use case - Tickets	45
4.15.2.2.0	General	45
4.15.2.2.1	System aspects of throughput ticketing scenario	46
4.15.2.2.2	System aspects of high priced ticketing scenario	46
4.15.2.2.3	UICC role in use case	46
4.15.2.3	Use case - Digital rights	48
4.15.2.3.1	System aspects of contactless digital rights	48
4.15.2.3.2	UICC role in use case	48
4.15.2.4	Use case - Payment application.....	48
4.15.2.5	Use case - Loyalty application	49
4.15.2.6	Use case - Health care application	50
4.15.2.7	Use case - Retail.....	50
4.15.2.7.1	System aspects of the use case	50
4.15.2.7.2	UICC role in the use case	50
4.15.2.8	Consideration about multiple applications in peer to peer mode	51
4.15.2.8.1	System aspects of multiple applications in peer to peer mode	51
4.15.2.8.2	Service discovery in peer to peer mode	51
4.15.2.8.3	Application connection in peer to peer mode	51
4.15.2.8.4	Customer care in peer to peer mode	51
4.15.2.9	Considerations about the P2P technology	51
4.15.2.10	Consideration about multiple HCI Hosts in card emulation mode.....	52
4.15.3	Requirements	53

4.15.3.1	Physical interface requirements	53
4.15.3.2	Multi-protocol concurrent operation requirements	53
4.15.3.3	Contactless communication modes requirements	53
4.15.3.4	Compatibility with existing contactless systems requirements	53
4.15.3.5	Parameters to be transported by the CLFIP requirements	53
4.15.3.6	Application integration requirements	54
4.15.3.7	Terminal and user interaction requirements	54
4.15.3.8	Interoperability requirements	54
4.15.3.9	RFID requirements	55
4.15.3.10	P2P mode requirements	55
4.15.3.10.1	General P2P requirements	55
4.15.3.10.2	P2P application management requirements	56
4.15.4	Interaction with existing features (informative)	57
4.16	Administration of the Smart Card Web Server	57
4.16.1	Abstract (informative)	57
4.16.2	Background (informative)	57
4.16.3	Requirements	57
4.16.4	Interaction with existing features (informative)	57
4.17	Confidential Application Services	57
4.17.1	Abstract (informative)	57
4.17.2	Background (informative)	58
4.17.2.1	Use case 1: Mobile TV services	58
4.17.2.2	Use case 2: Banking Services	59
4.17.2.3	Use case 3: Contactless Applications	60
4.17.2.4	Use case 4: Mobile Virtual Network Operator services	61
4.17.3	Requirements (normative)	62
4.17.3.0	General	62
4.17.3.1	Confidential application environment	62
4.17.3.2	Administration by Card issuer	63
4.17.3.2.1	Third party area environment administration	63
4.17.3.2.2	Third party area creation	63
4.17.3.2.3	Third party area policy definition	63
4.17.3.3	Administration by Third party	64
4.17.3.4	Service Operator specific requirements	64
4.17.4	Interaction with existing features (informative)	64
4.18	UICC for Machine-to-Machine (M2M) applications	64
4.18.1	Abstract (informative)	64
4.18.2	Use Cases (informative)	65
4.18.2.1	Use case - Track and Trace	65
4.18.2.1.0	General	65
4.18.2.1.1	Use case - Emergency Call	65
4.18.2.1.2	Use case - Fleet Management	66
4.18.2.1.3	Use case - Theft Tracking	66
4.18.2.2	Use case - Monitoring	67
4.18.2.2.0	General	67
4.18.2.2.1	Use case - Metering/Prepaid delivery of utilities (water, gas, electricity)	67
4.18.2.2.2	Use case - Person/Animal protection	68
4.18.2.2.3	Use case - Object protection	68
4.18.2.3	Use case - Transaction	69
4.18.2.3.1	Use case - PoS Terminals (Point of Sale Terminals)	69
4.18.2.4	Use case - Control	69
4.18.2.4.1	Use case - Controlling vending machines	69
4.18.2.4.2	Use case - Controlling production machines	70
4.18.3	Requirements	70
4.18.3.0	General	70
4.18.3.1	General M2M UICC Requirements	70
4.18.3.1.0	General	70
4.18.3.1.1	Specific requirements related to definition of classes	71
4.18.3.1.2	Example for a possible class system (informative)	71
4.18.3.2	MFF Requirements	71
4.18.4	Interaction with existing features (informative)	72
4.19	Location based services for broadcast technology	72

4.19.1	Abstract (informative).....	72
4.19.2	Use Cases (informative).....	72
4.19.3	Requirement for retrieving location information for broadcast technology.....	73
4.19.4	Interaction with existing features (informative).....	73
4.20	Terminals with reduced functionality.....	73
4.20.1	Abstract (informative).....	73
4.20.2	Use case (informative).....	73
4.20.2.1	Use case - Data card.....	73
4.20.3	Requirements.....	73
4.20.4	Interaction with existing features (informative).....	73
4.21	Digital Rights Management.....	74
4.21.1	Abstract (informative).....	74
4.21.2	Use cases (informative).....	74
4.21.2.0	General.....	74
4.21.2.1	Use case - Transfer of protected contents and rights by using a UICC.....	74
4.21.2.2	Use case - Provisioning of rights in the UICC.....	74
4.21.2.3	Use case - Direct rendering of DRM-protected content by using the UICC.....	74
4.21.2.4	Use case - Pre-loading of rights by using the UICC.....	75
4.21.3	Requirements.....	75
4.21.4	Interaction with existing features (informative).....	75
4.22	Multicast dataflow in UICC.....	75
4.22.1	Abstract (informative).....	75
4.22.2	Use cases (informative).....	75
4.22.2.1	Use case - Broadcast data services.....	75
4.22.2.2	Use case - Mobile TV related services.....	76
4.22.3	Requirement for multicast dataflow (subscription and dataflow reception).....	76
4.22.4	Interaction with existing features (informative).....	76
4.23	New type of data storage and access.....	76
4.23.1	Abstract (informative).....	76
4.23.2	Background (informative).....	76
4.23.2.0	General.....	76
4.23.2.1	Use case - Taking a picture from the terminal, storing it on the UICC and retrieving it.....	76
4.23.2.2	Use case - Storing and protecting data through operator portal.....	77
4.23.2.3	Use case - Storing a service description.....	77
4.23.2.4	Use case - Managing multimedia content via UICC to a remote server.....	77
4.23.2.5	Use case - Partitioning UICC memory.....	77
4.23.2.6	Use case - UICC content depending on user authentication.....	77
4.23.2.7	Use case - Migration to a USB UICC without ICCD class.....	77
4.23.3	Requirements.....	78
4.23.3.1	Data storage and structure requirements.....	78
4.23.3.2	Data protection requirements.....	78
4.23.3.3	Local and remote access requirements.....	78
4.23.4	Interaction with existing features (informative).....	79
4.24	CAT access over a modem interface.....	79
4.24.1	Abstract (informative).....	79
4.24.2	Background (informative).....	79
4.24.2.0	General.....	79
4.24.2.1	Use case - Extending CAT to the connected entity capabilities.....	79
4.24.2.2	Use case - Using CAT for data acquisition and control in an M2M device.....	80
4.24.2.3	Use case - Addition of CAT support by adding a CAT extender device.....	80
4.24.3	Requirements.....	80
4.24.3.1	General requirements.....	80
4.24.3.2	Connected device registration requirements.....	81
4.24.3.3	Legacy support requirements.....	81
4.24.3.4	Extended support requirements.....	83
4.24.3.5	CAT over modem-client interface requirements.....	83
4.24.3.6	Connected entity termination requirements.....	83
4.24.3.7	Security requirements.....	84
4.24.4	Interaction with existing features (informative).....	84
4.25	UICC-Terminal applications and services over USB.....	84
4.25.1	Abstract (informative).....	84
4.25.2	Background (informative).....	84

4.25.2.1	Use case - Migration of existing services over IP	84
4.25.2.2	Use case - End-user interaction.....	85
4.25.2.3	Use case - Integration of UICC services into terminal user interface	85
4.25.2.4	Use case - Access status of communication services	85
4.25.2.5	Use case - Access to specific terminal hardware.....	85
4.25.2.6	Use case - Interaction between terminal and UICC applications	86
4.25.3	Requirements	86
4.25.3.1	General framework requirements.....	86
4.25.3.2	Framework service discovery and management requirements.....	86
4.25.3.3	Interaction between UICC and terminal applications requirements.....	87
4.25.3.4	Framework security requirements	87
4.25.3.5	User Interface requirements	87
4.25.3.6	Device interaction requirements.....	88
4.25.3.7	Network related requirements	88
4.25.3.8	Specific Services requirements	88
4.25.3.9	Backwards compatibility requirements.....	88
4.25.4	Interaction with existing features (informative).....	88
4.26	Integration of a UICC in a Mobile Broadband Notebook	88
4.26.1	Abstract (informative).....	88
4.26.2	Background (informative).....	89
4.26.2.1	Architecture considerations.....	89
4.26.2.2	Use cases	89
4.26.2.2.1	Authentication	89
4.26.2.2.2	Mass storage for MNO content	90
4.26.2.2.3	Mass storage for user content	90
4.26.2.2.4	Cryptographic services	90
4.26.2.2.5	Web services.....	90
4.26.2.2.6	Secure execution environment.....	91
4.26.2.2.7	Device Management.....	91
4.26.2.3	Security considerations	91
4.26.3	Requirements	91
4.26.3.1	Generic requirements	91
4.26.3.2	Security requirements.....	92
4.26.3.3	Security policy related requirements.....	92
4.26.4	Interaction with existing features (informative).....	92
4.27	Fourth UICC Form Factor	92
4.27.1	Abstract (informative).....	92
4.27.2	Background (informative).....	92
4.27.2.0	General.....	92
4.27.2.1	Use Case - Introduction of new devices that can support UICC	92
4.27.2.2	Use Case - Slimmer mobile devices.....	92
4.27.2.3	Use Case - Enhanced end user experience	93
4.27.3	Technical Solution Selection Criteria	93
4.27.4	Requirements	93
4.28	Name resolution mechanism for the UICC	94
4.28.1	Abstract (informative).....	94
4.28.2	Use Cases (informative).....	94
4.28.2.0	General	94
4.28.2.1	Use Case - Card OTA management	94
4.28.2.2	Use Case - Access to a payment server.....	94
4.28.3	Requirements	95
4.28.4	Interaction with existing features (informative).....	95
4.29	UICC Access Optimization	95
4.29.1	Abstract (informative).....	95
4.29.2	Background (informative).....	95
4.29.3	Requirements	95
4.30	Mechanism for monitoring the wear of a UICC.....	95
4.30.1	Abstract (informative).....	95
4.30.2	Use cases (informative)	96
4.30.2.1	Use case – remote management of wear index information.....	96
4.30.2.2	Use case – new communication modules in cars	96
4.30.2.3	Use case – automatic detection of memory defects.....	96

4.30.3 Requirements96

Annex A (informative): Requirement numbering scheme.....97

Annex B (informative): Change history98

History100

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/e0c272d2-e714-49df-9797-1556bcb8635/etsi-ts-102-412-v13.0.0-2018-07>

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (<https://ipr.etsi.org/>).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

Foreword

This Technical Specification (TS) has been produced by ETSI Technical Committee Smart Card Platform (SCP).

The contents of the present document are subject to continuing work within TC SCP and may change following formal TC SCP approval. If TC SCP modifies the contents of the present document, it will then be republished by ETSI with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 0 early working draft;
 - 1 presented to TC SCP for information;
 - 2 presented to TC SCP for approval;
 - 3 or greater indicates TC SCP approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Introduction

The present document specifies the requirements for Release 7 onwards of the TC SCP.

iTeh STANDARD PREVIEW
(standards.iteh.ai)
Full standard:
<https://standards.iteh.ai/catalog/standards/sist/e0c272d2-e714-49df-9797-1556bcb8635/etsi-ts-102-412-v13.0.0-2018-07>

1 Scope

The present document specifies the additional requirements for Release 7 onwards of the TC SCP with respect to earlier releases.

The present document covers all the Stage 1 requirements which are not covered by other TC SCP stage 1 documents.

2 References

2.1 Normative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- In the case of a reference to a TC SCP document, a non specific reference implicitly refers to the latest version of that document in the same Release as the present document.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference/>.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are necessary for the application of the present document.

- [1] ETSI TS 102 221: "Smart Cards; UICC-Terminal interface; Physical and logical characteristics (Release 7)".
- [2] ETSI TS 102 223: "Smart cards; Card Application Toolkit (CAT) (Release 6)".
- [3] ETSI TS 122 038: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); USIM Application Toolkit (USAT/SAT); Service description; Stage 1 (3GPP TS 22.038 Release 7)".
- [4] ETSI TS 151 011: "Digital cellular telecommunications system (Phase 2+); Specification of the Subscriber Identity Module - Mobile Equipment (SIM-ME) interface (3GPP TS 51.011)".
- [5] ETSI TS 131 102: "Universal Mobile Telecommunications System (UMTS); LTE; Characteristics of the Universal Subscriber Identity Module (USIM) application (3GPP TS 31.102 Release 6)".
- [6] ISO/IEC 7816-4: "Identification cards -- Integrated circuit cards -- Part 4: Organization, security and commands for interchange".
- [7] Trusted Computing Group (2003): "TPM Main - Part 1 Design Principles - Specification version 1.2".
- [8] ISO/IEC 14443 (all parts): "Identification cards -- Contactless integrated circuit cards -- Proximity cards".
- [9] ISO/IEC 18092: "Information technology -- Telecommunications and information exchange between systems -- Near Field Communication -- Interface and Protocol (NFCIP-1)".
- [10] ISO/IEC 15693 (all parts): "Identification cards -- Contactless integrated circuit cards -- Vicinity cards".
- [11] ETSI EN 300 468: "Digital Video Broadcasting (DVB); Specification for Service Information (SI) in DVB systems".
- [12] ETSI EN 302 304: "Digital Video Broadcasting (DVB); Transmission System for Handheld Terminals (DVB-H)".

- [13] OMA-TS-SRM-V1-0-20090310-A: "OMA Secure Removable Media Specification".
- [14] OMA-AD-SRM-V1-0-0-20090310-A: "OMA Secure Removable Media Architecture".
- [15] OMA-RD-SRM-V1-0-20090310-A: "OMA Secure Removable Media Requirements".
- [16] ETSI TS 102 241: "Smart Cards; UICC Application Programming Interface (UICC API) for Java Card (TM) (Release 8)".
- [17] ETSI TS 127 007: "Digital cellular telecommunications system (Phase 2+); Universal Mobile Telecommunications System (UMTS); LTE; AT command set for User Equipment (UE) (3GPP TS 27.007 Release 9)".
- [18] ETSI TS 102 613: "Smart Cards; UICC - Contactless Front-end (CLF) Interface; Part 1: Physical and data link layer characteristics".
- [19] ETSI TS 102 622: "Smart Cards; UICC - Contactless Front-end (CLF) Interface; Host Controller Interface (HCI)".
- [20] ISO/IEC 18000: "Information technology -- Radio frequency identification for item management".
- [21] ETSI TS 102 483: "Smart cards; UICC-Terminal interface; Internet Protocol connectivity between UICC and terminal (Release 8)".
- [22] IETF RFC 2616: "Hypertext Transfer Protocol -- HTTP/1.1".
- [23] ETSI TS 102 484: "Smart Cards; Secure channel between a UICC and an end-point terminal".
- [24] ETSI TS 102 600: "Smart Cards; UICC-Terminal interface; Characteristics of the USB interface".
- [25] ETSI TS 102 671: "Smart Cards; Machine to Machine UICC; Physical and logical characteristics".
- [26] GlobalPlatform: "Requirements for NFC Mobile; Management of Multiple Contactless Secure Elements v2.0".
- [27] NFC Forum: "NFC Controller Interface (NCI) Technical Specification Version 1.1".

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

- In the case of a reference to a TC SCP document, a non specific reference implicitly refers to the latest version of that document in the same Release as the present document.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] GSMA Pay Buy Mobile, Business Opportunity Analysis, Public White Paper, version 1.0, November 2007.
- [i.2] ISO/IEC 16750-3: "Road vehicles - Environmental conditions and testing for electrical and electronic equipment -- Part 3: Mechanical loads".
- [i.3] AEC-Q100: "Stress Test Qualification for Integrated Circuits".
- [i.4] OMA-TS-BCAST-SvcCntProtection-V1.0: "Service and Content Protection for Mobile Broadcast Services".
- [i.5] Mobile Broadband in Notebooks Guidelines, version 4.0, December 2009.