3GPP TSG-T (Terminals) Meeting #17
Biarritz, France, 4 - 6 September, 2002

Tdoc TP-020196

3GPP TSG-T2 #18
Velen, Germany
12 -16 August 2002

T2-020811

Title:	LS on MMS UA Behaviour with Respect to Handling MMS Parameters on the USIM
Response to:	LS (T2-020611 / T3-020411) on MMS UA Behaviour with Respect to Handling MMS Parameters on the USIM from T3 LS (T2-020610 / T3-020352) from T3 on data inconsistency related to MMS support on the USIM
Work Item:	MMS
Source:	T2
To:	T3
Cc:	T

Contact Person:
Name: Miraj Mostafa
E-mail Address: miraj.mostafa@nokia.com

Attachments:
T2-020735 (CR for the TS 23.140) on MMS UA behaviour for handling number of MMS connectivity parameters sets on the USIM
T2-020773 (CR 23.140 REL-5 on mandatary UA behaviour wrt status of EF_MMSN)
T2-020799 (CR 23.140 REL-4 MMS parameters on the USIM including mandatary UA behaviour wrt status of EF_MMSN)

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1. Overall Description:

T2 acknowledges the work done by T3 to further develop the feature of storing different MMS-specific information on the USIM as required by both SA1 and T2. T2 also thanks T3 for providing the opportunity to understand and comment on the development made in T3 in this regard. Please find T2's response below on the actions provided by T3 in the LSs (T3-020411 and T3-020352).

Response to action # 1 in T3-020411:
T2 understands T3's suggestion to make it mandatory for the user agent to update the status byte of the MMS notification while performing corresponding actions on any notification stored on the USIM, so that status byte mirrors the fact. T2#18 has approved a CR (T2-020773, attached) for the TS 23.140 to mandate the user agent to update the status byte while storing/deleting any MMS notification on/from the USIM. Unfortunately, T2 could not conclude on a different suggestion made by T3 to mandate the use of different MMS parameters (connectivity information, user preferences and notifications) by the user agent, if those are present on the USIM. T2 intends to look into the issue during the future meetings.

Response to action # 2 in T3-020411:
T2 thinks that the work done by T3 for the separation of issuer and user configuration parameters (connectivity information) serves the requirement. T2 has already agreed a CR (T2-020735, attached) for the 23.140 to describe the corresponding MMS user agent behaviour.

Response to action # 3 in T3-020411:
T2 is also convinced about the work done by T3 on storing the interface to core network and bearer information of the MMS connectivity information on the USIM in a prioritised order. T2 thinks that present MMS user agent behaviour, described in the 23.140 version 5.3.0, already covers this prioritised order. And thus, concluded that it has no impact on the TS 23.140.

Response to T3-020352:
Please note that T2 has also approved all related changes to REL-4 of TS 23.140 (CR in T2-020799, attached).

2. Actions:

To T3 group.

ACTION: **T2** asks **T3** group to review above-mentioned responses of T2 and comment, if any.

3. Date of next T2 Meetings:

T2#19	18-22 Nov 2002	Korea
T2#20	20-24 Jan 2002	US

3GPP TSG-T2 Meeting #18 ***T2-020735***
Velen, Germany, 12-16 August 2002

CR-Form-v7

CHANGE REQUEST

⌘ **23.140** **CR** **CRNum** ⌘ **rev** **-** ⌘ Current version: **5.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: UICC apps⌘ [X] ME [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	MMS UA behaviour for handling number of MMS connectivity parameters sets on the USIM
Source:	⌘	Siemens AG
Work item code:	⌘	MESS5-MMS
Date:	⌘	11-07-2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	3GPP SA1/SA approved a new requirements w.r.t MMS configuration parameters for release 5 of the stage 1 specification of MMS (TS 22.140).
Summary of change:	⌘	Addition of MMS UA behaviour for handling number of MMS connectivity parameters sets on the USIM.
Consequences if not approved:	⌘	The new MMS Stage 1 (REL-5) requirement is not met.

Clauses affected:	⌘	7.1.14

	Y	N			
Other specs affected:	X		Other core specifications	⌘	TS 22.140, TS 31.102
		X	Test specifications		
		X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.1.14 Handling of MMS-related information on the USIM

If the USIM according to [67] stores MMS related information, an MMS User Agent may be able to handle that MMS-related information on the USIM which comprises:

- MMS connectivity information, as defined in Annex F,
- MMS user preferences, as defined in Annex F, and
- MMS notifications.

MMS connectivity information, which is stored on the USIM, should be used by an MMS User Agent to connect to the network for the purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM may include a number of sets of MMS connectivity parameters. One of these sets of MMS connectivity parameters is preset by the issuer of the USIM. Such preset MMS connectivity parameters set shall be selected unless otherwise specified by the user.

~~Such~~ The MMS connectivity information on the USIM may include preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [67]. If these are stored on the USIM the MMS-capable UE should automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

When conflicting MMS connectivity information is stored on both the USIM and outside the USIM, the MMS connectivity information stored on the USIM should be used by an MMS User Agent to connect to the network.

MMS user preferences information, which is stored on the USIM, may beused by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

MMS notifications, may be stored on the USIM together with an associated status by a recipient MMS User Agent.

- When an MMS User Agent has deleted a notification which was stored on the USIM, the associated status should be set to “Free space”
- When an MMS User Agent stores a notification on the USIM, the associated status should be set to “Used space”
- When a recipient MMS User Agent has not handled the notification which is stored on the USIM (e.g. the details of the notification were not shown to the user), the associated status should be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the USIM (e.g. the details of the notification have been shown to the user), the associated status should be set to “notification read”,
- When a recipient MMS User Agent has not retrieved an MM based on the notification which is stored on the USIM, the associated status should be set to “MM not retrieved”,
- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the USIM, the notification should be deleted or the associated status may be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status may be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status should be set to “MM forwarded”,

Upon an attempt to store a notification on a USIM, an MMS User Agent should ensure that the notification is not lost unless the USIM acknowledges the storage attempt to be successful.

3GPP TSG-T2 #18
Velen, Germany
12-16 August 2002

T2-020773

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **CRNum** ⌘ **rev** **-** ⌘ Current version: **5.3.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	MMS UA behaviour with respect to handling MMS notification parameters stored on the USIM
Source:	⌘	AT&T Wireless Services
Work item code:	⌘	MMS REL-5
Date:	⌘	August 15, 2002
Category:	⌘	**F**
Release:	⌘	REL-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	3GPP T3 suggests T2 that it be mandatory for the User Agent to perform the listed update actions so that the notification table accurately mirrors reality as well as the user's understanding of the current state of MM notification.
Summary of change:	⌘	This CR clarifies the handling of MMS notification related information on the USIM.
Consequences if not approved:	⌘	The MMS User Agent behaviour for MMS notification would not be defined and interoperability issues can occur when a user changes his/her terminal

Clauses affected:	⌘	7.1.14		
Other specs Affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	3GPP TS 31.102
Other comments:	⌘			

7 MMS Service Behaviour Description

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7.1.14 Handling of MMS-related information on the USIM

If the USIM according to [57] stores MMS related information, an MMS User Agent may be able to handle that MMS-related information on the USIM which comprises:

- MMS connectivity information, as defined in Annex F,
- MMS user preferences, as defined in Annex F, and
- MMS notifications.

MMS connectivity information, which is stored on the USIM, should be used by an MMS User Agent to connect to the network for the purpose of accessing the MMS Relay/Server. Such MMS connectivity information on the USIM may include preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [57]. If these are stored on the USIM the MMS-capable UE should automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

When conflicting MMS connectivity information is stored on both the USIM and outside the USIM, the MMS connectivity information stored on the USIM should be used by an MMS User Agent to connect to the network.

MMS user preferences information, which is stored on the USIM, may beused by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

MMS notifications may be stored on the USIM together with an associated status by a recipient MMS User Agent.

- When an MMS User Agent has deleted a notification which was stored on the USIM, the associated status ~~should~~ shall be set to “Free space”
- When an MMS User Agent stores a notification on the USIM, the associated status ~~should~~ shall be set to “Used space”
- When a recipient MMS User Agent has not handled the notification which is stored on the USIM (e.g. the details of the notification were not shown to the user), the associated status should be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the USIM (e.g. the details of the notification have been shown to the user), the associated status should be set to “notification read”,
- When a recipient MMS User Agent has not retrieved an MM based on the notification which is stored on the USIM, the associated status should be set to “MM not retrieved”,
- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the USIM, the notification should be deleted or the associated status may be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status may be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status should be set to “MM forwarded”,

Upon an attempt to store a notification on a USIM, an MMS User Agent should ensure that the notification is not lost unless the USIM acknowledges the storage attempt to be successful.

3GPP TSG-T2 #18
Velen, Germany
12-16 August 2002

T2-020799

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **CRNum** ⌘ **rev** **-** ⌘ Current version: **4.7.0** ⌘

*For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.*

Proposed change affects: ⌘ (U)SIM [X] ME/UE [X] Radio Access Network [ ] Core Network [ ]

Title:	⌘	Handling of MMS-related information on the USIM
Source:	⌘	GEMPLUS Card International
Work item code:	⌘	MMS REL-4
Date:	⌘	August 12, 2002
Category:	⌘	**B**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change: ⌘ 3GPP T has required T2 to incorporate in the MMS REL-4 specifications the relevant changes related to the MMS support on the USIM for REL-4.
This CR addresses the issues related to data inconsistency between the ME and the USIM.

Summary of change: ⌘ This CR reflects the support for MMS in the USIM specificatons, 3GPP TS 31.102, and clarifies the handling of MMS-related information on the USIM.

Consequences if not approved: ⌘
1) Consistency issues between the MMS specifications, 3GPP TS 23.140 and the USIM specifications, 3GPP TS 31.102
2) The MMS User Agent behaviour would not be defined
3) Interoperability issues when a user changes his/her terminal

Clauses affected: ⌘ 2, 5.1.1, 6.1.11 (new section), Annex F (new section)

Other specs Affected: ⌘
[X] Other core specifications ⌘ 3GPP TS 31.102
[ ] Test specifications
[ ] O&M Specifications

Other comments: ⌘ This CR copies the corresponding sections from 23.140 v5.3.0 into REL-4.
In addition the following (approved) ***category F*** REL-5 CRs are also incorporated in order not to create inconsistency between REL-4 and REL-5:
T2-020735, T2-020749, T2-020773

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

[1] 3GPP TS 22.140: "Multimedia Messaging Service; Stage 1".

[2] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[3] WAP Forum: "Wireless Application Environment Specification, Version 1.2", WAP-WAESpec-19991104, . URL: http://www.wapforum.org/.

[4] 3GPP TS 23.057: "Mobile Execution Environment (MExE); Functional description; Stage 2".

[5] IETF; STD 0011 (RFC 2822): "Internet Message Format", URL: http://www.ietf.org/rfc/rfc2822.txt.

[6] IETF; RFC 2046: "Multipurpose Internet Mail extension (MIME) Part Two: Media Types", URL: http://www.ietf.org/rfc/rfc2046.txt.

[7] The Unicode Consortium: "The Unicode Standard", Version 2.0, Addison-Wesley Developers Press, 1996.URL: http://www.unicode.org/.

[8] ANSI X3.4, 1986: "Information Systems; Coded Character Set 7 Bit; American National Standard Code for Information Interchange".

[9] ISO/IEC 8859-1:1998: "Information Processing; 8-bit Single-Byte Coded Graphic Character Sets; Part 1: Latin Alphabet No. 1".

[10] IETF; RFC 2279: "UTF-8, A Transformation format of ISO 10646", URL: http://www.ietf.org/rfc/rfc2279.txt.

[11] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[12] 3GPP TS 26.090: "Mandatory Speech Codec speech processing functions; AMR Speech Codec Transcoding Functions".

[13] 3GPP TS 26.093 (V3.1.0): "Mandatory Speech Codec speech processing functions; AMR Speech Codec; Source Controlled Rate Operation".

[14] ISO/IEC 11172-3:1993: "Information technology; Coding of moving pictures and associated audio for digital storage media at up to about 1,5 Mbit/s; Part 3: Audio" (MP3, MPEG1-Audio, MPEG2-Audio)

[15] MIDI Manufacturers Association Incorporated, Los Angeles, California: “MIDI Sample Dump Standard (SDS)”; URL: http://www.midi.org.

[16] ISO/IEC 14496-2:1999/FDAM4, ISO/IEC JTC1/SC 29/WG11 N3904, Pisa, January, 2001

[17] ITU-T Recommendation T.81 | ISO/IEC 10918-1:1994: "Information technology; Digital compression and coding of continuous-tone still images: Requirements and guidelines".

[18] Compuserve Incorporated, Columbus, Ohio (1990): "Graphics Interchange Format (Version 89a)".

[19] ISO/IEC 14496-2:1999: "Information technology; Coding of audio-visual objects; Part 2: Visual".

[20] ITU-T Recommendation H.263 (1998): "Video coding for low bit rate communication".

[21] ITU-T Recommendation H.263 (1998): "Video coding for low bit rate communication - Annex X, Profiles and Levels Definition"

[22] IETF; STD 0010 (RFC 2821): "Simple Mail Transfer Protocol", URL: http://www.ietf.org/rfc/rfc2821.txt.

[23] WAP Forum (November 1999): "WAP Wireless Session Protocol", WAP-WSP-19991105- , URL: http://www.wapforum.org/.

[24] WAP Forum (November 1999): "WAP Push Access Protocol", WAP-PAP-19991108, URL: http://www.wapforum.org/.

[25] WAP Forum (November 1999): "WAP User Agent Profile Specification", WAP-UAProf-19991110, URL: http://www.wapforum.org/.

[26] W3C Recommendation 22 February 1999 "Resource Description Framework (RDF) Model and Syntax Specification", URL: http://www.w3.org/TR/REC-rdf-syntax.

[27] WAP Forum (November 1999): "WAP Wireless Markup Language Specification, Version 1.2 ", WAP-WML-19991104, URL: http://www.wapforum.org/.

[28] W3C Recommendation 15-June-1998: "Synchronized Multimedia Integration Language (SMIL) 1.0 Specification" - http://www.w3.org/TR/REC-smil/.

[29] WAP Forum (November 1999): "WAP Wireless Transport Layer Security Specification", WAP-WTLS-19991105, URL: http://www.wapforum.org/.

[30] WAP Forum (November 1999): "WAP Identity Module Specification", WAP-WIM-19991105, URL: http://www.wapforum.org/.

[31] ITU-T Recommendation T.37 (06/98): "Procedures for the transfer of facsimile data via store-and-forward on the Internet".

[32] ITU-T Recommendation T.30 (1996): "Procedures for document facsimile transmission in the general switched telephone network".

[33] IETF; RFC 2421 (Sept. 1998): "Voice Profile for Internet Mail – version 2, VPIM" , URL: http://www.ietf.org/rfc/rfc2421.txt.

[34] IETF; STD 0053 (RFC 1939): "POP 3, Post Office Protocol - Version 3" , URL: http://www.ietf.org/rfc/rfc1939.txt.

[35] IETF; RFC 1730 (December 1994): "IMAP4, Internet Message Access Protocol - Version 4" , URL: http://www.ietf.org/rfc/rfc1730.txt..

[36] Adobe Systems: "Tag Image File Format (TIFF), Version 6", URL:, http://www.adobe.com.

[37] 3GPP TR 23.039: "Interface protocols for the connection of Short Message Service Centres (SMSCs) to Short Message Entities (SMEs)".

[38] ISO/IEC TR 13818-5:1997/Amd 1:1999 "Advanced Audio Coding (AAC)"

[39] IETF; Internet draft: "RTP payload format and file storage format for AMR and AMR-WB audio"; URL: http://search.ietf.org/internet-drafts/draft-ietf-avt-rtp-amr-10.txt..

NOTE: Reference [39] is work in progress in IETF/AVT working group and to be replaced by the appropriate RFC number once the Internet draft is approved within the IETF (IESG approval is scheduled to spring/summer 2001).

[40] 3GPP TS 26.233: "End-to-end transparent streaming Service (PSS); General Description".

[41] 3GPP TS 26.234: "End-to-end transparent streaming Service (PSS); Protocols and Codecs".

[42] IETF; Internet Draft: "TCP over 2.5G and 3G Wireless Networks"; URL: http://search.ietf.org/internet-drafts/draft-ietf-pilc-2.5g3g-03.txt

NOTE: Reference [42] has to be replaced by the appropriate RFC number once the Internet draft is approved within the IETF.

[43] WAP Forum: "Wireless profiled TCP", WAP-225-TCP-20010331-a, URL: http://www.wapforum.org

[44] IETF; RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies", URL: http://www.ietf.org/rfc/rfc2045.txt

[45] IETF; RFC 2047: "Multipurpose Internet Mail Extensions (MIME) Part Three: Message Header Extensions for Non-ASCII-Text", URL: http://www.ietf.org/rfc/rfc2047.txt.

[46] IETF; RFC 2048: "Multipurpose Internet Mail Extensions (MIME) Part Four: Registration Procedures", URL: http://www.ietf.org/rfc/rfc2048.txt.

[47] IETF; RFC 2049: "Multipurpose Internet Mail Extensions (MIME) Part Five: Conformance Criteria and Examples", URL: http://www.ietf.org/rfc/rfc2049.txt.

[48] IETF; RFC 2616: “Hypertext Transfer Protocol, HTTP/1.1”, URL: http://www.ietf.org/rfc/rfc2616.txt.

[49] IETF; STD 13 (RFC 1034, 1035): "Domain Names -- concepts and facilities", "Domain names – implementation and specification", URL: http://www.ietf.org/rfc/rfc1034.txt, http://www.ietf.org/rfc/rfc1035.txt.

[50] IETF; STD 14 (RFC 947): "Multi-network broadcasting within the Internet", URL: http://www.ietf.org/rfc/rfc947.txt.

[51] IETF; RFC 2076: "Common Internet Message Headers", URL: http://www.ietf.org/rfc/rfc2076.txt.

[52] IETF; RFC 1893: "Enhanced Mail System Status Codes", URL: http://www.ietf.org/rfc/rfc1893.txt.

[53] IETF; RFC 1327: "Mapping between X.400(1988)/ISO 10021 and RFC 822", URL: http://www.ietf.org/rfc/rfc1327.txt.

[54] 3GPP TS 29.061: "Interworking between the Public Land Mobile Network (PLMN) supporting Packet Based Services and Packet Data Networks (PDN)"

[55] WAP-183-ProvCont, Provisioning Content, URL: http://www.wapforum.org

[56] WAP-209-MMSEncapsulation, MMS Encapsulation Protocol, URL: http://www.wapforum.org

[57] 3GPP TS 31.102 "Characteristics of the USIM Application".

5.1 MMS User Agent

5.1.1 MMS User Agent operations

The MMS User Agent shall provide the following application layer functionalities:-

- the retrieval of MMs (initiate MM delivery to the MMS User Agent).

The MMS User Agent may provide additional application layer functionalities such as:-

- the MM composition
- the MM submission
- the MM presentation;

- the presentation of notifications to the user;
- the signing of an MM on an end-user to end-user basis;
- the decryption and encryption of an MM on an end-user to end-user basis;
- all aspects of storing MMs on the terminal;
- handling of MMS-related information on the USIM, if the USIM supports MMS;
- the handling of external devices;
- the user profile management.

This optional list of additional functionalities of the MMS User Agent is not exhaustive.

6 MMS Service Behaviour Description

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6.1.11 Handling of MMS-related information on the USIM

If the USIM according to [57] stores MMS related information, an MMS User Agent may be able to handle that MMS-related information on the USIM which comprises:

- MMS connectivity information, as defined in Annex F,
- MMS user preferences, as defined in Annex F, and
- MMS notifications.

MMS connectivity information, which is stored on the USIM, should be used by an MMS User Agent to connect to the network for the purpose of accessing the MMS Relay/Server.

The MMS connectivity information on the USIM may include a number of sets of MMS connectivity parameters. One of these sets of MMS connectivity parameters is preset by the issuer of the USIM. Such preset MMS connectivity parameters set shall be selected unless otherwise specified by the user.

The MMS connectivity information on the USIM may include preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [57]. If these are stored on the USIM the MMS-capable UE should automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the USIM unless otherwise specified by the user.

When conflicting MMS connectivity information is stored on both the USIM and outside the USIM, the MMS connectivity information stored on the USIM should be used by an MMS User Agent to connect to the network.

MMS user preferences information, which is stored on the USIM, may beused by an MMS User Agent for user assistance in preparation of terminal-originated MMs (e.g. default values for parameters that are often used).

MMS notifications, may be stored on the USIM together with an associated status by a recipient MMS User Agent.

- When an MMS User Agent has deleted a notification which was stored on the USIM, the associated status shall be set to “Free space”
- When an MMS User Agent stores a notification on the USIM, the associated status shall be set to “Used space”
- When a recipient MMS User Agent has not handled the notification which is stored on the USIM (e.g. the details of the notification were not shown to the user), the associated status should be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the USIM (e.g. the details of the notification have been shown to the user), the associated status should be set to “notification read”,

- When a recipient MMS User Agent has not retrieved an MM based on the notification which is stored on the USIM, the associated status should be set to “MM not retrieved”,
- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the USIM, the notification should be deleted or the associated status may be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status may be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the USIM, the notification may be deleted or the associated status should be set to “MM forwarded”,

Upon an attempt to store a notification on a USIM, an MMS User Agent should ensure that the notification is not lost unless the USIM acknowledges the storage attempt to be successful.

Annex F (normative): Configuration of MMS-capable UEs

An MMS-capable UE may be configured with information about MMS connectivity and user preferences. A configured MMS-capable UE requires minimum user interaction for different MMS-specific purposes, e.g. accessing network infrastructure, composing mobile-originated MMs. The information may be stored on USIM as part of terminal configuration. MMS connectivity information and user preferences are described below.

F.1 MMS Connectivity Information

MMS connectivity information consists of a set of information elements needed to access network infrastructure for the MMS purpose. This includes bearer, protocols, and addresses of related access points.

A list of information elements concerning MMS connectivity information is outlined below. Some of the connectivity information elements can also be used for purposes other than MMS. An MMS-capable UE can be configured with all or a subset of the listed elements depending on the provided service in terms of e.g. bearer, security, implementation protocol. Moreover, an MMS-capable UE can be configured with more than one sets of connectivity information for multiple access mechanisms, e.g. bearer, access type. Further information about the listed information elements for WAP MMS implementation can be found in [55] and [56].

MMS Relay/Server

- address: the address of the associated MMS Relay/Server as defined in [56]

WAP Gateway for WAP implementation of MMS (the terminology of the information elements as defined in chapter 5.6 in [55] is given in parenthesis)

- address: the address of the associated WAP Gateway. The address can be of different types, as indicated by the "type of address" (PXADDR)
- type of address: indicates the type (e.g. IPv4, IPv6) of the "address" of the WAP Gateway (PXADDRTYPE)
- port: indicates the port number specific to the address of the WAP Gateway (PORTNBR)
- service: specifies available service, e.g. connection-less, secured (SERVICE)
- authentication type: indicates the authentication method used by the WAP Gateway (PXAUTH-TYPE)
- authentication id: indicates the authentication identifier used for authentication by the WAP Gateway (PXAUTH-ID)
- authentication pw: indicates the authentication secret used for authentication by the WAP Gateway (PXAUTH-PW)

Interface to core network including access point for the core network (e.g. GGSN) and required bearer (the terminology of the information elements as defined in chapter 5.6 in [55] is given in parenthesis)

- bearer: indicates the type of network (e.g. CSD, GPRS) (BEARER)
- address: the address of the associated access point. The address could be of different types depending on the bearer, as indicated by the "type of address" (NAP-ADDRESS)
- type of address: indicates the type (e.g. MSISDN for CSD, APN for GPRS) of the "address" of the access point (NAP-ADDRTYPE)
- speed: indicates the speed of the connection for circuit switched bearers (LINKSPEED)
- call type: indicates type of call for specific bearer (e.g. analogue for CSD) (CALLTYPE)
- authentication type: indicates the authentication protocol used by the access point (AUTHTYPE)
- authentication id: indicates the authentication id used for authentication by the access point (AUTHNAME)
- authentication pw: indicates the authentication secret used for authentication by the access point (AUTHSECRET)

For the storage of WAP Gateway Information and Interface to Core Network and Bearer Information on the USIM only the binary encoding of information elements as defined in chapter 8 of [55] shall be taken into account, i.e. for each information element (“attribute name” according to [55]) and for each predefined attribute value according to [55] the equivalent tokens shall be used. Non-predefined attribute values shall be represented by ASCII string encoding with NULL character termination in order to indicate the end of the attribute value. The “connectivity document” structure as defined in previous chapters of [55] shall not be used for the storage of WAP Gateway Information and Interface to Core Network and Bearer Information on the USIM.

F.2 User Preferences

User preferences consist of a set of information elements with user-defined values. The set is a subset of information elements required for composing an MM. User preferences include following information elements.

For the WAP implementation of MMS the corresponding header field names and their equivalent binary tokens as defined in [56] are given in parenthesis. For the storage of MMS User Preferences on the USIM only these binary tokens shall be taken into account. The header field encoding according to [23] shall not be used for that purpose.

- Delivery report (*Delivery-Report*, encoded as 0x06)
- Read reply (*Read-Reply*, encoded as 0x10)
- Sender visibility (*Sender-Visibility*, encoded as 0x14)
- Priority (*Priority*, encoded as 0x0F)
- Time of expiry (*Expiry*, encoded as 0x08)
- Earliest delivery time (*Delivery-Time*, encoded as 0x07)

Further information about the information elements, listed here, can be found in section 8.1.1 (Submission of Multimedia Message) of this specification.