3GPP TSG-T (Terminals) Meeting #18
New Orleans, Louisiana, USA
4 - 6 December, 2002

Tdoc TP-020324

Title: **LS on MMS parameter storage on the SIM, and inter release ME behaviour**
Response to:
Release: Rel-4, Rel-5
Work Item: MMS

Source: 3GPP TSG T
To: 3GPP TSG SA
Cc: 3GPP TSG T2, 3GPP TSG T3

Contact Person:
Name: Nigel Barnes
Tel. Number: +44 1256 790169
E-mail Address: Nigel.Barnes@motorola.com

Attachments: TP-020321 (CR to TS 23.140, mandating SIM stored MMS parameter usage for Rel-5 ME if SIM is supported), TP-020322 (CR to TS 23.140, making SIM stored MMS parameter usage for Rel-5 ME if SIM is supported optional).

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1. Overall Description:

TSG T note the decision made at TSG SA#17 regarding the use of the SIM for MMS parameter storage: in particular, TSG T understand that it is mandatory for the Rel-4 SIM to support storage of MMS parameters, but that it is optional for Rel-4 MEs to support the use of these data on the SIM. However, TSG T understands that the issue of cross release support was not discussed at TSG SA. At TSG T the requirements related to Rel-5 ME with a Rel-4 SIM inserted was discussed. It is not clear to TSG T whether it is optional for Rel-5 MEs to support the use of these data on the SIM or it should be mandatory for the Rel-5 MEs to support this.

With this background TSG T drafted two different CRs to 23.140 for Rel-5, one making the Rel-5 ME support of the SIM MMS parameters mandatory, the other keeping it optional. TSG T agreed them as technically correct and conditionally approved them, pending a clarification from TSG SA if it is optional or mandatory for Rel-5 MEs to support the use of MMS parameters on the SIM.

For your information, in the past, TSG T made the decision that the SIM is frozen at Rel-4, i.e. there is to be no Rel-5 version of TS 51.011.

2. Actions:

To TSG SA:

ACTION: **TSG-T** asks TSG SA to decide if it is optional or mandatory for Rel-5 ME's to support the use of MMS parameters on the SIM (Rel-4) and thereby confirm the approval of one of the two CRs elaborated by TSG T.

3. Date of next TSG-T Meetings:

T#19	12 - 14 Mar 2003	Birmingham, UK
T#20	4 - 6 Jun 2003	Hämeenlinna, Finland

3GPP TSG-T Plenary
New Orleans, Louisiana
4-6 December 2002

TP-020321

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **095** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

*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 regarding the MMS parameters on the (U)SIM
Source:	⌘	T
Work item code:	⌘	MESS5-MMS
Date:	⌘	December 6, 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:	⌘	This CR introduces the use of MMS information on the (U)SIM as mandatory by the MMS User Agent. This CR improves user experience by suggesting the behaviour compatible to the subscriber's expectations regarding use of (U)SIM parameters as the (U)SIM is moved from one terminal to another.
Summary of change:	⌘	This CR reflects the use of the MMS related information by the MMS User Agent as mandatory if the parameters are present on the (U)SIM.
Consequences if not approved:	⌘	1) Consistency issues between the MMS specifications, 3GPP TS 23.140 and the (U)SIM specifications, 3GPP TS 31.102 and 3GPP TS 51.011 2) Interoperability issues when a user changes his/her terminal or when network parameters change

Clauses affected:	⌘	2 - 5.1.1 - 7.1.14 – Annex F		
Other specs Affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	3GPP TS 51.011 and 3GPP TS 31.102
Other comments:	⌘			

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] void

[13] void

[14] void

[15] void

[16] void

[17] void

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[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] void

[39] void

[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] IETF; RFC 1870: “SMTP Service Extension for Message Size Declaration”, URL: http://www.ietf.org/rfc/rfc1870.txt

[58] IETF; RFC 1652: “SMTP Service Extension for 8bit-MIME transport”, URL: http://www.ietf.org/rfc/rfc1652.txt

[59] 3GPP TS 32.235: "Charging Management; Charging Data Description for Application Services".

[60] IETF, RFC 2915: “The Naming Authority Pointer (NAPTR) DNS Resource Record”, URL: http://www.ietf.org/rfc/rfc2915.txt

[61] IETF, RFC 2916: “E.164 number and DNS”, URL: http://www.ietf.org/rfc/rfc2916.txt

[62] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[63] 3GPP TS 22.066: "Support of Mobile Number Portability (MNP); Service description. Stage 1".

[64] 3GPP TS 23.066: "Support of Mobile Number Portability (MNP); Technical realization. Stage 2".

[65] IETF; RFC 2617 "Access Authentication", URL:http://www.ietf.org/rfc/rfc2617.txt

[66] IETF; RFC 2246 "TLS protocol, version 1.0" , URL:http://www.ietf.org/rfc/rfc2246.txt

[67] 3GPP TS 31.102 "Characteristics of the USIM Application".

[68] W3C Note 08 May 2000 "Simple Object Access Protocol (SOAP) 1.1", URL: http://www.w3.org/TR/SOAP

[69] W3C Note 11 December 2000 "SOAP Messages with Attachments", URL: http://www.w3.org/TR/SOAP-attachments

[70] IETF; RFC 2376: "XML Media Type", URL: http://www.ietf.org/rfc/rfc2376.txt.

[71] IETF; RFC 2387: "The MIME Multipart/Related Content Type", URL: http://www.ietf.org/rfc/rfc2387.txt.

[72] IETF; RFC 2111: "Content-ID and Message-ID Uniform Resource Locators", URL: http://www.ietf.org/rfc/rfc2111.txt.

[73] IETF; RFC 2557: "MIME Encapsulation of Aggregate Documents, such as HTML (MHTML)", URL: http://www.ietf.org/rfc/rfc2557.txt.

[74] 3GPP TS 26.140: "Multimedia Messaging Service; Media formats and codecs".

[XX] 3GPP TS 51.011 ~~(v4~~ Rel-4): "Specification of the Subscriber Identity Module – Mobile Equipment (SIM-ME) interface".

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);
- terminal capability negotiation.

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 (U)SIM~~, if the USIM supports MMS~~;
- management and presentation of MMBox content;
- the handling of external devices;
- the user profile management.

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

7.1.14 Handling of MMS-related information on the (U)SIM

NOTE : This section does not apply when the MMS-UA is implemented within equipment which does not support a (U)SIM.

~~If the USIM according to [67] stores MMS related information, an~~An MMS User Agent shall use the MMS related information stored in the ~~(~~U~~)~~SIM [67] or SIM [XX], ~~-~~if present, according to the definitions in this subclause 7.1.14 - unless otherwise specified by the user.~~, may be able to handle that MMS-related information on the USIM which~~ This information comprises:

- MMS connectivity information, as defined in Annex F. This information is used to connect to the network for the purpose of accessing the MMS Relay/Server.~~,~~

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

MMS connectivity information, ~~which is stored on the (U)SIM, 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 (U)SIM ~~may~~ include[s] a number of sets of MMS connectivity parameters. ~~One~~ Some of these sets of MMS connectivity parameters ~~is~~ are preset by the issuer of the (U)SIM with the first set being the default. Such default preset MMS connectivity parameter~~s~~ set shall be selected unless otherwise specified by the user.

The MMS connectivity information on the (U)SIM ~~may~~ include[s] preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [67] or [XX]. If these are stored on the (U)SIM the MMS-capable UE ~~should~~ shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the (U)SIM 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 (U)SIM, ~~may~~ shall be used 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~~ should be stored on the (U)SIM 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 (U)SIM, the associated status shall be set to “Free space”
- When an MMS User Agent stores a notification on the (U)SIM, 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 (U)SIM (e.g. the details of the notification were not shown to the user), the associated status ~~should~~ shall be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the (U)SIM (e.g. the details of the notification have been shown to the user), the associated status ~~should~~ shall 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 (U)SIM, the associated status ~~should~~ shall be set to “MM not retrieved” – unless the recipient MMS User Agent has rejected or forwarded the MM,
- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the (U)SIM, the notification ~~should~~ shall be either deleted or the associated status ~~may~~ shall be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~may~~ shall be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~should~~ shall be set to “MM forwarded”,

Upon an attempt to store a notification on a (U)SIM, an MMS User Agent should ensure that the notification is not lost unless the (U)SIM 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 (U)SIM 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 (U)SIM 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 (U)SIM.

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 (U)SIM 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 8.1.3 (Submission of Multimedia Message) of this specification.

3GPP TSG-T Plenary
New Orleans, Louisiana
4-6 December 2002

TP-020322

CR-Form-v5

CHANGE REQUEST

⌘ **23.140** **CR** **099** ⌘ **rev** **-** ⌘ Current version: **5.4.0** ⌘

*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 regarding the MMS parameters on the (U)SIM
Source:	⌘	T
Work item code:	⌘	MESS5-MMS
Date:	⌘	December 6, 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),*
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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:	⌘	TSG-SA agreed that MMS parameter capability is mandatory for the USIM (Rel 4 and beyond) and for the SIM (Rel 4): Further for the case of a USIM being used it has been decided that is mandatory for the ME to use the MMS related information if the parameters are present on the USIM. For the case of a SIM being used it has been decided that it is optional for the ME to use the MMS related information if the parameters are present on the SIM This CR introduces the above requirtements for use of MMS information on the (U)SIM by the MMS User Agent
Summary of change:	⌘	This CR reflects the use of the MMS related information by the MMS User Agent as mandatory if the parameters are present on the USIM and as optional if the parameters are present on a SIM.
Consequences if not approved:	⌘	1) Consistency issues between the MMS specifications, 3GPP TS 23.140 and the (U)SIM specifications, 3GPP TS 31.102 and 3GPP TS 51.011 2) Interoperability issues when a user changes his/her terminal or when network parameters change

Clauses affected:	⌘	2 - 5.1.1 - 7.1.14 – Annex F		
Other specs Affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	3GPP TS 51.011 and 3GPP TS 31.102
Other comments:	⌘			

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[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.

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

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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);
- terminal capability negotiation.

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 (U)SIM~~, if the USIM supports MMS~~;
- management and presentation of MMBox content;
- the handling of external devices;
- the user profile management.

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

7.1.14 Handling of MMS-related information on the (U)SIM

NOTE : This section does not apply when the MMS-UA is implemented within equipment which does not support a (U)SIM.

~~If the USIM according to [67] stores MMS related information, an~~An MMS User Agent shall use the MMS related information stored in the USIM [67] , if present, according to the definitions in this subclause 7.1.14 - unless otherwise specified by the user. If the MMS related information is stored on a SIM [XX] it is optional for an MMS User Agent to use the parameters.~~ may be able to handle that MMS related information on the USIM which~~ This information comprises:

- MMS connectivity information, as defined in Annex F. This information is used to connect to the network for the purpose of accessing the MMS Relay/Server.~~,~~

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

MMS connectivity information, ~~which is stored on the (U)SIM, 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 (U)SIM ~~may~~ includes a number of sets of MMS connectivity parameters. ~~One~~ Some of these sets of MMS connectivity parameters ~~is~~ are preset by the issuer of the (U)SIM with the first set being the default. Such default preset MMS connectivity parameter~~s~~ set shall be selected unless otherwise specified by the user.

The MMS connectivity information on the (U)SIM ~~may~~ includes preferences for the selection of Interface to Core Network and Bearer parameters (cf. Annex F) as defined in [67] or [XX]. If these are stored on the ~~(~~U~~)~~SIM the MMS-capable UE ~~should~~ shall automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the (U)SIM unless otherwise specified by the user. If the MMS connectivity information are stored on the SIM the MMS-capable UE may automatically select the Interface to Core Network and Bearer parameters based on their order of precedence defined on the (U)SIM 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 (U)SIM, may~~ shall to be used 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~~ should be stored on the (U)SIM 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 (U)SIM, the associated status shall be set to “Free space”
- When an MMS User Agent stores a notification on the (U)SIM, 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 (U)SIM (e.g. the details of the notification were not shown to the user), the associated status ~~should~~ shall be set to “notification not read”,
- When a recipient MMS User Agent has handled the notification which is stored on the (U)SIM (e.g. the details of the notification have been shown to the user), the associated status ~~should~~ shall 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 (U)SIM, the associated status ~~should~~ shall be set to “MM not retrieved” – unless the recipient MMS User Agent has rejected or forwarded the MM,
- When a recipient MMS User Agent has retrieved an MM based on the notification which is stored on the (U)SIM, the notification ~~should~~ shall be either deleted or the associated status ~~may~~ shall be set to “MM retrieved”,
- When a recipient MMS User Agent has rejected an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~may~~ shall be set to “MM rejected”,
- When a recipient MMS User Agent has forwarded an MM based on the notification which is stored on the (U)SIM, the notification ~~may~~ shall either be deleted or the associated status ~~should~~ shall be set to “MM forwarded”,

Upon an attempt to store a notification on a (U)SIM, an MMS User Agent should ensure that the notification is not lost unless the (U)SIM 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 (U)SIM 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 (U)SIM 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 (U)SIM.

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 (U)SIM 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 8.1.3 (Submission of Multimedia Message) of this specification.