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

***TP-020273***

**Agenda Item:** 5.2.3

**Source:** T2

**Title:** "MMS" Change Requests

**Document for:** Approval

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| Spec | CR | Rev | Rel | Subject | Cat | Vers-Current | Vers-New | T2 doc | Workitem |
|---|---|---|---|---|---|---|---|---|---|
| 23.140 | 094 | - | Rel-5 | MMS message size definition and its support on the MMS UA. | F | 5.4.0 | 5.5.0 | T2-020943 | MESS5-MMS |
| 23.140 | 095 | - | Rel-5 | MMS UA behaviour regarding the MMS parameters on the (U)SIM | F | 5.4.0 | 5.5.0 | T2-020946 | MESS5-MMS |
| 23.140 | 096 | - | Rel-5 | Further corrections towards the MM7 XML Schema and MM7 examples | F | 5.4.0 | 5.5.0 | T2-020952 | MESS5-MMS |
| 23.140 | 097 | - | Rel-6 | Version Handling on MM4 | C | 5.4.0 | 6.0.0 | T2-020955 | MMS6 |
| 23.140 | 098 | - | Rel-6 | Addition of support for “Bcc” field in the MM4 reference point | F | 5.4.0 | 6.0.0 | T2-020957 | MMS6 |

**3GPP TSG-T2 #19**
**Bundang, Korea**
**18 -22 November 2002**

*T2-020943*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **094** ⌘ **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:*** UICC apps⌘ [ ] ME [X] Radio Access Network [ ] Core Network [X]

| | | |
|---|---|---|
| ***Title:*** | ⌘ | MMS message size definition and its support on the MMS UA. |
| ***Source:*** | ⌘ | T2 |
| ***Work item code:*** | ⌘ | MESS5-MMS |
| ***Date:*** | ⌘ | 12/11/2002 |
| ***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:*** | ⌘ | Align the T2 definition of MMS message size with the SA5 definition, approved at SA #17 plenary. One suitable definition of message size is needed, for example for charging purposes.<br>For reasons of clarity towards the end-user, and as requested by GSMA BARG, the MMS UA should provide the originating end-user with an indication of the message size, prior to message submission. |
| ***Summary of change:*** | ⌘ | The size of a message is defined as the total length, in octets, of the Subject information element and of all the Media Objects, including the Presentation media object (e.g. SMIL). |
| ***Consequences if not approved:*** | ⌘ | Misalignment would remain between the definitions of message size specified in different MMS-related specifications (32.235 and 23.140). Moreover, the current T2 definition of message size would remain, which does not satisfy operators requirements expressed by GSMA/BARG. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 4.4; 5.1.1 |

| ***Other specs Affected:*** | ⌘ | Y | N | | ⌘ | |
|---|---|---|---|---|---|---|
| | | X | | Other core specifications | | 32.235 |
| | | | | Test specifications | | |
| | | | | O&M Specifications | | |

| | | |
|---|---|---|
| ***Other comments:*** | ⌘ | The proposed change is recommended also by the GSMA. |

**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.

## 4.4 Message Size Measurement

~~Message size is calculated as if the MM were transmitted over MM1 assuming MM1 Submission or Retrieval of the MM.~~

~~The Message size is defined as the number of octets of the entire MM, i.e., in an MM1 implementation the Message size includes the size of all headers and the MM content.~~

~~The Message size of the same MM can be considerably different for Submission or Retrieval in case of content adaptation in the Retrieval case.~~

~~The Message size is dependent on the actual MM1 specific technical realization. For example the Message size for the WAP MMS realisation [56] is defined as the full size of the associated M-Send-req PDU in octets in case of Submission or M-Retrieve.conf PDU in octets in case of Retrieval.~~

The Message size is defined as the sum of the Subject information element size and the size of all the MM element(s), including the Presentation object (e.g. SMIL). Other information elements of a MM shall be excluded from the message size calculation.

### 4.4.1 Size of Subject information element

The size of the Subject information element shall be calculated as the length of the subject field in octets excluding the "Subject: " token.

### 4.4.2 Size of an MM element

The size of an MM element shall be calculated as the total number of octets of the media object, i.e. raw data without any boundaries or additional headers which are due to MIME-based encodings of the MM.

In case of an MM element being a multipart/mixed or multipart/related MIME message, the total number of octets contained in the body of that MIME message (i.e. that MM element) shall be counted including only the boundaries and additional headers which are part of the MIME message (i.e. that MM element).

NOTE 1: It is understood that due to the different encoding used in the MM4 reference point for the Subject field, there can be a slight discrepancy in the message size calculated over the MM1 and MM4 reference points.

NOTE 2: The message size of a submitted MM might differ from the message size of a retrieved MM if content adaptation is performed prior to its retrieval.

# 5 Functional Description of Involved MMS Elements

## 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 presentation of an approximate MM Size prior to MM submission;

- 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;
- 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.

**3GPP TSG-T2 #19**
**Bundang, Korea**
**18-22 November 2002**

*T2-020946*

*CR-Form-v5*

# CHANGE REQUEST

⌘ **23.140** **CR** **095** ⌘ **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:*** | ⌘ | T2 |
| ***Work item code:*** | ⌘ | MESS5-MMS |
| ***Date:*** | ⌘ | November 18, 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:*** | ⌘ | TSG-SA agreed that Rel-5 MMS parameter capability is mandatory for the (U)SIM and mandatory for the ME.<br><br>This CR introduces the use of MMS information on the (U)SIM as mandatory by the MMS User Agent, as requested by SA#17 and T3 in the LS T2-020844<br><br>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<br>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<br>[ ] Test specifications<br>[ ] 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

[18] void

[19] void

[20] void

[21] void

[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: "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

~~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] 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~~ 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.

~~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-T2 #19**
**Bundang, Korea**
**18 -22 November 2002**

*T2-020952*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **096** ⌘ **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:*** UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Further corrections towards the MM7 XML Schema and MM7 examples |
| ***Source:*** | ⌘ | T2 |
| ***Work item code:*** | ⌘ | MESS5-MMS |
| ***Date:*** | ⌘ | 20/11/2002 |
| ***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:*** | ⌘ | The MM7 XML Schema and examples still have serious bugs |
| ***Summary of change:*** | ⌘ | More bugs have been identified from the MM7 XML Schema. Also some clarifications have been made to Chapter 8.7 to prevent some possible IOP problems. Further corrections to MM7 examples are also included. |
| ***Consequences if not approved:*** | ⌘ | The MM7 XML Schema as it is now defined, does not pass an XML validator and is thus incorrect. The incorrect examples lead application developers to develop applications that do not work. |

| | | | | | |
|---|---|---|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.7.8.3, 8.7.9.1, 8.7.9.2, 8.7.9.4, 8.7.9.6, 8.7.9.7, Annex L | | | |
| ***Other specs affected:*** | ⌘ | **Y** | **N** | Other core specifications | ⌘ |
| | | ☐ | ☐ | Test specifications | |
| | | ☐ | ☐ | 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.

### 8.7.8.3 Status Reporting

The MM7 response messages shall be carried within a HTTP Response. The response may carry status at three levels:

– network errors shall be indicated by the HTTP level, e.g. as an HTTP 403 “Server not found” and shall be carried in the HTTP response back to the originating application.

– request processing errors (status codes in the range 2xxx-9xxx)- shall be reported as a SOAP Fault as defined in [68]. The SOAP fault shall include the *faultcode* [68], *faultstring*[68], and *detail*[68] elements. The *detail* element shall include the status elements described below and in Table 67. The SOAP detail element shall include VASPErrorRsp or RSErrorRsp element as direct child elements. VASPErrorRsp element shall be included if the SOAP Fault is generated by the VASP and RSErrorRsp element shall be sent if the SOAP Fault is generated by the MMS Relay/Server. Errors relating to the TransactionID shall be reported as a SOAP Fault. The *faultcode* shall be “Client.TransactionID” and the *faultstring* shall be used to indicate the human-readable description of the error. No *detail* element shall appear.

– success or partial success (status codes from the Success class, i.e. with format 1xxx) shall be reported in a MM7 response message that will include the following status elements, contained in the Status element of the response messages.

All status responses shall be reported with three XML elements in the response, i.e. the details of the SOAP Fault and the status of the MM7 response message –

- StatusCode shall indicate a numerical code that identifies different classes of error or successful completion of the operation. The StatusCode is a four-digit number of which the two high-order digits are defined in section 8.7.8.3.1, the two low-order digits are implementation specific.

- StatusText shall contain a predefined human readable description of the numerical code that indicates the general type of the error.

Details, optionally, gives particular details of the error or partial success, e.g. indicates the address that cannot be resolved or message-id that is not recognized. The format of the details element is implementation specific.

…

### 8.7.9.1 MM7_submit.REQ mapping

| Information Element | Location | ElementName | Comments |
|---|---|---|---|
| Transaction ID | SOAP Header | TransactionID | |
| Message-Type | SOAP Body | MessageType | Defined as Root element of SOAP Body |
| MM7 Version | SOAP Body | MM7Version | Value is number of this specification, e.g. 5.2.0 |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| Sender Address | SOAP Body | SenderAddress | |
| Recipient Address | SOAP Body | Recipients | Different address format will be specified as part of element value |
| Service code | SOAP Body | ServiceCode | Information supplied for billing purposes – exact format is implementation dependent |
| Linked ID | SOAP Body | LinkedID | Message-ID of linked message |
| Message class | SOAP Body | MessageClass | Enumeration – possible values: Informational, Advertisement, Auto |
| Date and time | SOAP Body | TimeStamp | |
| Time of Expiry | SOAP Body | ExpiryDate | |
| Earliest delivery time | SOAP Body | EarliestDeliveryTime | |
| Delivery report | SOAP Body | DeliveryReport | Boolean – true or false~~Boolean: True or False~~ |
| Read reply | SOAP Body | ReadReply | Boolean – true or false~~Boolean: True or False~~ |
| Reply-Charging | SOAP Body | ReplyCharging | No value – presence implies ~~True~~true! |
| Reply-Deadline | SOAP Body | replyDeadline | Attribute of *ReplyCharging* element Date format – absolute or relative |
| Reply-Charging-Size | SOAP Body | replyChargingSize | Attribute of *ReplyCharging* element |
| Priority | SOAP Body | Priority | Enumeration – possible values: High, Normal, Low |
| Subject | SOAP Body | Subject | |
| Adaptations | SOAP Body | allowAdaptations | Attribute of *Content* element Boolean – true or false~~Boolean: True or False~~ |
| Charged Party | SOAP Body | ChargedParty | Enumeration – possible values: Sender, Recipient, Both, Neither |
| Message Distribution Indicator | SOAP Body | DistributionIndicator | Boolean – true or false~~Boolean: True or False~~ |
| Content type | MIME header – Attachment | Content-Type | |
| Content | SOAP Body | Content | href:cid attribute links to attachment |

### 8.7.9.2 MM7_submit.RES mapping

| Information Element | Location | ElementName | Comments |
|---|---|---|---|
| Transaction ID | SOAP Header | TransactionID | |
| Message-Type | SOAP Body | MessageType | Defined as Root element of SOAP Body |
| MM7 Version | SOAP Body | MM7Version | Value is number of this specification, e.g. 5.2.0 |
| Message ID | SOAP Body | MessageID | |
| Request Status | SOAP Body | StatusCode | See section 8.7.8.4 |
| Request Status Text | SOAP Body | StatusText & Details | See section 8.7.8.4 |

Sample message submission

```
POST /mms-rs/mm7 HTTP/1.1
Host: mms.omms.com
Content-Type: multipart/related; boundary="NextPart_000_0028_01C19839.84698430"; type=text/xml;
    start="</tnn-200102/mm7-submit>"
Content-Length: nnnn
SOAPAction: ""

--NextPart_000_0028_01C19839.84698430
Content-Type:text/xml; charset="utf-8"
Content-ID: </tnn-200102/mm7-submit>

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <mm7:SubmitReq xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-
5-MM7-1-01-2">
            <MM7Version>5.3.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>News</VASID>
            </SenderIdentification>
            <Recipients>
                <To>
                    <Number>7255441234</Number>
                    <RFC2822Address displayOnly="Ttrue">7255442222@OMMS.com</RFC2822Address>
                </To>
                <Cc>
                    <Number>7255443333</Number>
                </Cc>
                <Bcc>
                    <RFC2822Address>7255444444@OMMS.com</RFC2822Address>
                </Bcc>
            </Recipients>
            <ServiceCode>gold-sp33-im42</ServiceCode>
            <LinkedID>mms00016666</LinkedID>
            <MessageClass>Informational</MessageClass>
            <TimeStamp>2002-01-02T09:30:47-05:00</TimeStamp>
            <EarliestDeliveryTime>2002-01-02T09:30:47-05:00</EarliestDeliveryTime>
            <ExpiryDate>P90D</ExpiryDate>
            <DeliveryReport>Truetrue</DeliveryReport>
            <Priority>Normal</Priority>
            <Subject>News for today</Subject>
            <ChargedParty>Sender</ChargedParty>
            <DistributionIndicator>Truetrue</DistributionIndicator>
            <Subject>News for today</Subject>
            <Content href="cid:SaturnPics-01020930@news.tnn.com", allowAdaptations="tTrue"/>
        </mm7:SubmitReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0028_01C19839.84698430
Content-Type: multipart/mixed; boundary="StoryParts 74526 8432 2002-77645"
```

```
Content-ID:<—SaturnPics-01020930@news.tnn.com>

--StoryParts 74526 8432 2002-77645
Content-Type: text/plain; charset="us-ascii"

Science news, new Saturn pictures...

--StoryParts 74526 8432 2002-77645
Content-Type: image/gif;
Content-ID:<saturn.gif>
Content-Transfer-Encoding: base64

R0lGODdhZAAwAOMAAAAAAIGJjGltcDE0OOfWo6Ochbi1n1pmcbGojpKbnP/lpW54fBMTE1RYXEFO
…

--StoryParts 74526 8432 2002-77645--
--NextPart_000_0028_01C19839.84698430--
```

Note: The different encoding mechanisms, as defined by RFC2045 [44], can be utilized for content encoding.

The response message is sent by the MMS Relay/Server back to the VASP for the VAS application in a HTTP Response message.

```
HTTP/1.1  200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<?xml  version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/—envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1">
            vas00001-sub
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <mm7:SubmitRsp xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-
5-MM7-1-01-2">
            <MM7Version>5.3.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>—Success</StatusText>
            </Status>
            <MessageID>041502073667</MessageID>
        </mm7:SubmitRsp>
    </env:Body>
</env:Envelope>
…
```

### 8.7.9.4 MM7_deliver.RES

| Information Element | Location | ElementName | Comments |
|---|---|---|---|
| Transaction ID | SOAP Header | TransactionID | |
| Message-Type | SOAP Body | MessageType | Defined as Root element of SOAP Body |
| MM7 Version | SOAP Body | MM7Version | Value is number of this specification, e.g. 5.2.0 |
| Service code | SOAP Body | ServiceCode | |
| Request status | SOAP Body | StatusCode | See section 8.7.8.4 |
| Request status text | SOAP Body | StatusText & Details | See section 8.7.8.4 |

Sample Deliver request and response

```
POST /mms/weather.xml HTTP/1.1
Host: www.yahoo.com
Content-Type: multipart/related; boundary="NextPart_000_0125_01C19839.7237929064"; type=text/xml;
    start="</cmvt256/mm7-deliver>"
Content-Length: nnnn
SOAPAction: ""
```

```
--NextPart_000_0125_01C19839.7237929064
Content-Type:text/xml; charset="utf-8"
Content-ID: </cmvt256/mm7-submit>

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1" />
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <!-- Example of MM7_deliverReq -->
        <mm7:DeliverReq xmlns
:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2">
            <MM7Version>5.3.0</MM7Version>
            <MMSRelayServerID>240.110.75.34</MMSRelayServerID>
            <LinkedID>wthr8391</LinkedID>
            <Sender>
                <RFC2822Address>97254265781@OMMS.com</RFC2822Address>
            </Sender>
            <LinkedID>wthr8391</LinkedID>
            <TimeStamp>2002-04-15T14:35:21-05:00</TimeStamp>
            <Priority>Normal</Priority>
            <Subject>Weather Forecast</Subject>
            <Content href="cid:forecast-location200102-86453"/>
        </mm7:DeliverReq>
    </env:Body>
</env:Envelope>

--NextPart_000_0125_01C19839.7237929064
Content-Type:text/plain;charset="utf-8"
Content-ID:<forecast-location2000102-86453>

Los Angeles, Calif, USA
--NextPart_000_0125_01C19839.7237929064--
```

The deliver response message might look like this (with an application error code):

```
HTTP/1.1  200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<?xml version="1.00" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1">
            vas00324-dlvr
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
       <env:Fault>
            <faultcode>env:Client</faultcode>
            <faultstring>Client error</faultstring>
            <detail>
                <mm7:VASPErrorRspDeliverRsp xmlns
:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-
2http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-0">
                    <MM7Version>5.3.0</MM7Version>
                    <ServiceCode>wthr-badl-6521</ServiceCode>
                    <Status>
                        <StatusCode>4006</StatusCode>
                        <StatusText>Service Unavailable</StatusServiceText>
                        <Details>Location not covered in service </Details>
                    </Status>
                </mm7:/VASPErrorRspDeliverRsp>
            </detail>
       </env:Fault>
    </env:Body>
</env:Envelope>
```

…

### 8.7.9.6 MM7_cancel.RES mapping

| Information Element | Location | ElementName | Comments |
|---|---|---|---|
| Transaction ID | SOAP Header | TransactionID | |
| Message-Type | SOAP Body | MessageType | Defined as Root element of SOAP Body |
| MM7 Version | SOAP Body | MM7Version | Value is number of this specification, e.g. 5.2.0 |
| Request status | SOAP Body | StatusCode | See section 8.7.8.4 |
| Request status text | SOAP Body | StatusText & Details | See section 8.7.8.4 |

The following shows an interchange of a MM7_cancel.REQ and MM7_cancel.RES to illustrate a SOAP message that does not include a multimedia content part.

```
POST /mms-rs/mm7 HTTP/1.1
Host: mms.omms.com
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn
SOAPAction: ""

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID
xmlns:mm7="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1">
                vas0000-can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <mm7:CancelReq xmlns:mm7="
http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2">
            <MM7Version>5.3.0</MM7Version>
            <SenderIdentification>
                <VASPID>TNN</VASPID>
                <VASID>Reminder</VASID>
            </SenderIdentification>
            <MessageID>mms000222222</MessageID>
        </mm7:CancelReq>
    </env:Body>
</env:Envelope>

HTTP/1.1  200 OK
Content-Type: text/xml; charset="utf-8"
Content-Length: nnnn

<?xml version="1.0" ?>
<env:Envelope xmlns:env="http://schemas.xmlsoap.org/soap/envelope/">
      <env:Header>
        <mm7:TransactionID xmlns:mm7="
http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2"
env:mustUnderstand="1">
                vas0000-can
        </mm7:TransactionID>
    </env:Header>
    <env:Body>
        <mm7:CancelRsp xmlns:mm7="
http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-01-2">
            <MM7Version>5.3.0</MM7Version>
            <Status>
                <StatusCode>1000</StatusCode>
                <StatusText>Success</StatusText>
            </Status>
        </mm7:CancelRsp>
    </env:Body>
</env:Envelope>
```

…

### 8.7.9.7 MM7_replace.REQ mapping

| Information Element | Location | ElementName | Comments |
|---|---|---|---|
| Transaction ID | SOAP Header | TransactionID | |
| Message-Type | SOAP Body | MessageType | Defined as Root element of SOAP Body |
| MM7 Version | SOAP Body | MM7Version | Value is number of this specification, e.g. 5.2.0 |
| VASP ID | SOAP Body | VASPID | |
| VAS ID | SOAP Body | VASID | |
| Sender address | SOAP Body | SenderAddress | |
| Message ID | SOAP Body | MessageID | |
| Service code | SOAP Body | ServiceCode | Information supplied for billing purposes – exact format is implementation dependent |
| Date and time | SOAP Body | TimeStamp | |
| Earliest delivery time | SOAP Body | EarliestDeliveryTime | Date format – absolute or relative |
| Read reply | SOAP Body | ReadReply | Boolean – true or false |
| Adaptations | SOAP Body | allowAdaptations | Attribute of *Content* element<br>Boolean – true or false |
| Content type | MIME part Header | Content-Type | |
| Content | SOAP Body | Content | href:cid attribute links to attachment |
| Message Distribution Indicator | SOAP Body | DistributionIndicator | Boolean – true or false~~Boolean: True or False~~ |

# Annex L (normative): MM7 XML Schema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema targetNamespace="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-2~~http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-1~~"
xmlns:soap="http://schemas.xmlsoap.org/soap/envelope/" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:tns="http://www.3gpp.org/ftp/Specs/archive/23_series/23.140/schema/REL-5-MM7-1-~~1~~2"
elementFormDefault="qualified" attributeFormDefault="unqualified">

<xs:import namespace="http://schemas.xmlsoap.org/soap/envelope/"
schemaLocation="http://schemas.xmlsoap.org/soap/envelope/"/>

    <xs:element name="TransactionID"~~ type="xs:NMTOKEN"~~>
        <xs:annotation>
            <xs:documentation>The transaction ID that shall be included in the SOAP
Header</xs:documentation>
        </xs:annotation>
        <xs:complexType>
            <xs:simpleContent>
                <xs:extension base="xs:string">
                    <xs:attribute ref="soap:mustUnderstand"/>
                     <xs:attribute ref="soap:encodingStyle"/>
                    <xs:attribute ref="soap:actor"/>
                </xs:extension>
            </xs:simpleContent>
        </xs:complexType>
    </xs:element>
    <xs:element name="SubmitReq" type="tns:submitReqType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Sending MM from the VASP to one or more
recipients</xs:documentation>
```

```
        </xs:annotation>
    </xs:element>
    <xs:element name="SubmitRsp" type="tns:submitRspType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM submission
request</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverReq" type="tns:deliverReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery of MM from the MMS Relay/Server to the VASP
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliverRsp" type="tns:deliverRspType">
        <xs:annotation>
            <xs:documentation>VASP to MMS : Response to a message delivered to the VASP from the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelReq" type="tns:cancelReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: Request to cancel a message submission
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="CancelRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM cancellation request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceReq" type="tns:replaceReqType">
        <xs:annotation>
            <xs:documentation>VASP  to MMS: Request to replace a message which was submitted
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReplaceRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS  to VASP: Response to a VASP after MM replace request
</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportReq" type="tns:deliveryReportReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="DeliveryReportRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a delivery report delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyReq" type="tns:readReplyReqType">
        <xs:annotation>
            <xs:documentation>MMS to VASP : Delivery Report from one of the MM
recipients</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="ReadReplyRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Response to a read reply delivered to the
VASP</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="RSErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>MMS to VASP: Error response to a any bad request sent to the MMS
Relay/Server</xs:documentation>
        </xs:annotation>
    </xs:element>
    <xs:element name="VASPErrorRsp" type="tns:genericResponseType">
        <xs:annotation>
            <xs:documentation>VASP to MMS: Error response to a any bad request sent to the
VASP</xs:documentation>
```

```
        </xs:annotation>
    </xs:element>
    <xs:complexType name="senderIDType">
        <xs:sequence>
            <xs:element name="VASPID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="VASID" type="tns:entityIDType" minOccurs="0"/>
            <xs:element name="SenderAddress" type="tns:addressType~~xs:string~~" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="submitReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
                <xs:sequence>
                    <xs:element name="Recipients" type="tns:recipientsType"/>
                    <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                    <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                    <xs:element name="MessageClass" type="tns:messageClassType"
default="Informational" minOccurs="0"/>
                    <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                    <xs:element name="ReplyCharging" minOccurs="0">
                        <xs:complexType>
                            <xs:attribute name="replyChargingSize" type="xs:positiveInteger"
use="optional"/>
                            <xs:attribute name="replyDeadline" type="tns:relativeOrAbsoluteDateType"
use="optional"/>
                        </xs:complexType>
                    </xs:element>
                    <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                    <xs:element name="ExpiryDate" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                    <xs:element name="DeliveryReport" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                    <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                    <xs:element name="ChargedParty" type="tns:chargedPartyType" minOccurs="0"/>
                    <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="submitRspType">
        <xs:complexContent>
            <xs:extension base="tns:genericResponseType">
                <xs:sequence>
                    <xs:element name="MessageID" type="tns:messageIDType"/>
                </xs:sequence>
            </xs:extension>     </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="deliverReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericRSReqType">
                <xs:sequence>
                    <xs:element name="LinkedID" type="tns:messageIDType" minOccurs="0"/>
                    <xs:element name="Sender" type="tns:addressType"/>
                    <xs:element name="Recipients" type="tns:recipientsType" minOccurs="0"/>
                    <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                    <xs:element name="ReplyChargingID" type="tns:messageIDType" minOccurs="0"/>
                    <xs:element name="Priority" type="tns:priorityType" minOccurs="0"/>
                    <xs:element name="Subject" type="xs:string" minOccurs="0"/>
                    <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="deliverRspType">
        <xs:complexContent>
            <xs:extension base="tns:genericResponseType">
                <xs:sequence>
                    <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="cancelReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
```

```
                <xs:sequence>
                    <xs:element name="MessageID" type="tns:messageIDType"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="replaceReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericVASPRequestType">
                <xs:sequence>
                    <xs:element name="MessageID" type="tns:messageIDType"/>
                    <xs:element name="ServiceCode" type="tns:serviceCodeType" minOccurs="0"/>
                    <xs:element name="TimeStamp" type="xs:dateTime" minOccurs="0"/>
                    <xs:element name="ReadReply" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="EarliestDeliveryTime" type="tns:relativeOrAbsoluteDateType"
minOccurs="0"/>
                    <xs:element name="DistributionIndicator" type="xs:boolean" minOccurs="0"/>
                    <xs:element name="Content" type="tns:contentReferenceType" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="deliveryReportReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericRSReqType">
                <xs:sequence>
                    <xs:element name="MessageID" type="tns:messageIDType"/>
                    <xs:element name="Recipient" type="tns:addressType"/>
                    <xs:element name="Sender" type="tns:addressType"/>
                    <xs:element name="Date" type="xs:dateTime"/>
                    <xs:element name="MMStatus" type="tns:mmDeliveryStatusType"/>
                    <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="readReplyReqType">
        <xs:complexContent>
            <xs:extension base="tns:genericRSReqType">
                <xs:sequence>
                    <xs:element name="MessageID" type="tns:messageIDType"/>
                    <xs:element name="Recipient" type="tns:addressType"/>
                    <xs:element name="Sender" type="tns:addressType"/>
                    <xs:element name="TimeStamp" type="xs:dateTime"/>
                    <xs:element name="MMStatus" type="tns:mmReadStatusType"/>
                    <xs:element name="StatusText" type="xs:string" minOccurs="0"/>
                </xs:sequence>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
    <xs:complexType name="genericRSReqType">
        <xs:annotation>
            <xs:documentation>base for all request messages from R/S to VASP</xs:documentation>
        </xs:annotation>
        <xs:sequence>
            <xs:element name="MM7Version" type="tns:versionType"/>
            <xs:element name="MMSRelayServerID" type="tns:entityIDType" minOccurs="0"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="genericVASPRequestType">
        <xs:annotation>
            <xs:documentation>Base type for all requests from VASP to R/S</xs:documentation>
        </xs:annotation>
        <xs:sequence>
            <xs:element name="MM7Version" type="tns:versionType"/>
            <xs:element name="SenderIdentification" type="tns:senderIDType"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="genericResponseType">
        <xs:annotation>
            <xs:documentation>Any simple response sent </xs:documentation>
        </xs:annotation>
        <xs:sequence>
            <xs:element name="MM7Version" type="tns:versionType"/>
            <xs:element name="Status" type="tns:responseStatusType"/>
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="responseStatusType">
```

```
        <xs:annotation>
            <xs:documentation>Status information conveyed in responses</xs:documentation>
        </xs:annotation>
        <xs:all>
            <xs:element name="StatusCode">
                <xs:simpleType>
                    <xs:restriction base="tns:statusCodeType"/>
                </xs:simpleType>
            </xs:element>
            <xs:element name="StatusText" type="tns:statusTextType"/>
            <xs:element name="Details" type="tns:anyDataType" minOccurs="0"/>
        </xs:all>
    </xs:complexType>
    <xs:simpleType name="mmDeliveryStatusType">
        <xs:annotation>
            <xs:documentation>Statuses for MM7_delivery_report</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Expired"/>
            <xs:enumeration value="Retrieved"/>
            <xs:enumeration value="Rejected"/>
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Forwarded"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="mmReadStatusType">
        <xs:annotation>
            <xs:documentation>Statuses for MM7_read_reply</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Indeterminate"/>
            <xs:enumeration value="Read"/>
            <xs:enumeration value="Deleted"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="messageIDType">
        <xs:annotation>
            <xs:documentation>Message ID</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string~~xs:NMTOKEN~~"/>
    </xs:simpleType>
    <xs:group name="AddressGroup">
        <xs:choice>
            <xs:element name="RFC2822Address">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="~~False~~false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="Number">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="~~xs:NMTOKEN~~xs:string">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="~~False~~false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
            <xs:element name="ShortCode">
                <xs:complexType>
                    <xs:simpleContent>
                        <xs:extension base="xs:string~~xs:NMTOKEN~~">
                            <xs:attribute name="displayOnly" type="xs:boolean" use="optional"
default="~~False~~false"/>
                        </xs:extension>
                    </xs:simpleContent>
                </xs:complexType>
            </xs:element>
        </xs:choice>
    </xs:group>
    <xs:complexType name="multiAddressType">
        <xs:sequence maxOccurs="unbounded">
            <xs:group ref="tns:AddressGroup"/>
```

```
        </xs:sequence>
    </xs:complexType>
    <xs:complexType name="addressType">
        <xs:group ref="tns:AddressGroup"/>
    </xs:complexType>
    <xs:complexType name="serviceCodeType">
        <xs:annotation>
            <xs:documentation>Used to identify the specific service given for billing
purposes</xs:documentation>
        </xs:annotation>
        <xs:simpleContent>
            <xs:extension base="xs:string">
                <xs:anyAttribute namespace="##other" processContents="lax"/>
            </xs:extension>
        </xs:simpleContent>
    </xs:complexType>
    <xs:simpleType name="entityIDType">
        <xs:annotation>
            <xs:documentation>String used to identify the VAS, VASP and MMSC</xs:documentation>
        </xs:annotation>
        <xs:restriction base="~~xs:NMTOKEN~~xs:string"/>
    </xs:simpleType>
    <xs:complexType name="recipientsType">
        <xs:annotation>
            <xs:documentation>At least one of To,CC,Bcc</xs:documentation>
        </xs:annotation>
        <xs:sequence maxOccurs="unbounded">
            <xs:choice>
                <xs:element name="To" type="tns:multiAddressType"/>
                <xs:element name="Cc" type="tns:multiAddressType"/>
                <xs:element name="Bcc" type="tns:multiAddressType"/>
            </xs:choice>
        </xs:sequence>
    </xs:complexType>
    <xs:simpleType name="messageClassType">
        <xs:annotation>
            <xs:documentation>Message class</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Personal"/>
            <xs:enumeration value="Informational"/>
            <xs:enumeration value="Advertisement"/>
            <xs:enumeration value="Auto"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="priorityType">
        <xs:annotation>
            <xs:documentation>Priority of MM</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Normal"/>
            <xs:enumeration value="High"/>
            <xs:enumeration value="Low"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="relativeOrAbsoluteDateType">
        <xs:annotation>
            <xs:documentation>Date which can be relative or absolute</xs:documentation>
        </xs:annotation>
        <xs:union memberTypes="xs:dateTime xs:duration"/>
    </xs:simpleType>
    <xs:simpleType name="chargedPartyType">
        <xs:annotation>
            <xs:documentation>Allows specification of which party - Sender or Reciever pays for
transmission</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
            <xs:enumeration value="Sender"/>
            <xs:enumeration value="Recipient"/>
            <xs:enumeration value="Both"/>
            <xs:enumeration value="Neither"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="versionType">
        <xs:annotation>
            <xs:documentation>Version number in the format of x.y.z </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string">
```

```
            <xs:enumeration value="5.3.0"/>
        </xs:restriction>
    </xs:simpleType>
    <xs:simpleType name="statusCodeType">
        <xs:annotation>
            <xs:documentation>request status resonse codes in RES </xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:positiveInteger"/>
    </xs:simpleType>
    <xs:complexType name="contentReferenceType">
        <xs:annotation>
            <xs:documentation>content element including only href</xs:documentation>
        </xs:annotation>
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
        <xs:attribute name="allowAdaptations" type="xs:boolean" use="optional"/>
    </xs:complexType>
    <xs:complexType name="anyDataType">
        <xs:annotation>
            <xs:documentation>Any element and attribute </xs:documentation>
        </xs:annotation>
        <xs:complexContent>
            <xs:restriction base="xs:anyType">
                <xs:sequence>
                    <xs:any processContents="lax" minOccurs="0" maxOccurs="unbounded"/>
                </xs:sequence>
            </xs:restriction>
        </xs:complexContent>
    </xs:complexType>
    <xs:simpleType name="statusTextType">
        <xs:annotation>
            <xs:documentation>list of standard human-readable status descriptions</xs:documentation>
        </xs:annotation>
        <xs:restriction base="xs:string"/>
    </xs:simpleType>
</xs:schema>
```

**3GPP TSG-T2 #19**
**Bundang, Korea**
**18 -22 November 2002**

*T2-020955*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **097** ⌘ **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:*** UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Version Handling on MM4 |
| ***Source:*** | ⌘ | T2 |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 4/11/2002 |
| ***Category:*** | ⌘ | **C** |
| ***Release:*** | ⌘ | REL-6 |

*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:*** | ⌘ | No Clear definition of version handling over the MM4 Interface. |
| ***Summary of change:*** | ⌘ | Originating MMS Relay/Servers will not need to know in advance the version of the recipient MMS Relay/Server. Recipient MMS Relay/Servers should respond with their own version number in the MM4 reponse message. |
| ***Consequences if not approved:*** | ⌘ | Many Interoperability problems will exist and operators will not be able to exchnage messages using MM4. |

| | | |
|---|---|---|
| ***Clauses affected:*** | ⌘ | 8.4.X |

| ***Other specs affected:*** ⌘ | Y | N | | ⌘ |
|---|---|---|---|---|
| | | | Other core specifications | |
| | | | Test specifications | |
| | | | 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.

## 8.4.X Version Handling on MM4

The following rules shall apply when different 3GPP MMS versions are supported on the MM4 Interface.

The MMS Relay/Server shall use the 3GPP MMS version number it supports in the MM4 abstract messages.

All unrecognized header fields and values received in an MM4 Request or MM4 Response shall be ignored by the MMS Relay/Server that receives the MM4 abstract message.

The MMS Relay/Server should be able to handle an MM4 Request or an MM4 Response with header fields and values of earlier 3GPP MMS versions if it is supporting a later 3GPP MMS version.

NOTE: When sending an MM4 Request message an originator MMS Relay/Server is not expected to know in advance the 3GPP MMS version of the recipient MMS Relay/Server.

**3GPP TSG-T2 #19**
**Bundang, Korea**
**18 -22 November 2002**

*T2-020957*

*CR-Form-v7*

# CHANGE REQUEST

⌘ **23.140** **CR** **098** ⌘ **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:*** UICC apps⌘ ☐ ME ☐ Radio Access Network ☐ Core Network ☒

| | | |
|---|---|---|
| ***Title:*** | ⌘ | Addition of support for "Bcc" field in the MM4 reference point |
| ***Source:*** | ⌘ | T2 |
| ***Work item code:*** | ⌘ | MMS6 |
| ***Date:*** | ⌘ | 21/11/2002 |
| ***Category:*** | ⌘ | **F** |
| ***Release:*** | ⌘ | REL-6 |

*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:*** | ⌘ | "Bcc:" field (blind carbon-copy) is currently supported by the existing MM1 reference point Stage 3 (OMA) implementations. However, the current version of TS23.140 does not define how "Bcc:" fields are handled by the MMS Relay/Server and prevents sending "Bcc" fields over the MM4 reference point. This CR tries to rectify the situation by adding support for "Bcc" field. |
| ***Summary of change:*** | ⌘ | The "Bcc:" header is added to the list of allowed recipient headers. Also, some normative guidance on its usage is included to prevent potential IOP problems. |
| ***Consequences if not approved:*** | ⌘ | MM4 reference point would not support the usage of blind carbon-copy recipients.<br>Potential IOP problems due to inconsistent MMS Relay/Server implementations for mapping of "Bcc:" recipients to the MM4 reference point. |
| ***Clauses affected:*** | ⌘ | 8.4.4.2, 8.4.4.10, 8.4.5.1, Annex I |

| ***Other specs affected:*** ⌘ | **Y** | **N** | | ⌘ |
|---|---|---|---|---|
| | | | Other core specifications | |
| | | | Test specifications | |
| | | | 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.

### 8.4.4.2 MM4_Forward.REQ Header Mappings

The MM4 Forward request header mappings are detailed below.

**Table 40: MM4_Forward.REQ Information Elements to STD 11 Header Mappings**

| Information element | STD 11 Headers |
|---|---|
| 3GPP MMS Version | X-Mms-3GPP-MMS-Version: |
| Message Type | X-Mms-Message-Type: |
| Transaction ID | X-Mms-Transaction-ID: |
| Message ID | X-Mms-Message-ID: |
| Recipient(s) address | To:, Cc~~C~~:, Bcc: |
| Sender address | From: |
| Content type | Content-Type: |
| Message class | X-Mms-Message-Class: |
| Date and time | Date: |
| Time of Expiry | X-Mms-Expiry: |
| Delivery report | X-Mms-Delivery-Report: |
| Priority | X-Mms-Priority: |
| Sender visibility | X-Mms-Sender-Visibility: |
| Read reply | X-Mms-Read-Reply: |
| Subject | Subject: |
| Acknowledgement Request | X-Mms-Ack-Request: |
| Forward counter | X-Mms-Forward-Counter: |
| Previously-sent-by | X-Mms-Previously-sent-by: |
| Previously-sent-date and-time | X-Mms-Previously-sent-date-and-time: |
| Content | *<message body>* |
| - | Sender: |
| - | X-Mms-Originator-System: |
| - | Message-ID: |

The table above indicates the mappings from MM4_Forward.REQ information elements to the corresponding STD 11 [5] headers.

The MM4 information element Message ID is not directly mapped to a corresponding STD 11 "Message-ID:" header. Each STD 11 message must have a unique message id, which is carried in the "Message-ID:" header.

Content-type maps directly since both are defined as being MIME content types as specified in RFC 2046 [6].

The STD 11 "From:" header is determined by the mail user agent, or, in this case, the MMS User Agent. This corresponds to the MM4 information element Sender address, as set by the MMS User Agent or MMS Relay/Server.

STD 11 messages are required to have a "Sender:" header that indicates the originator address (as determined by the SMTP "MAIL From" command).

The STD 11 “X-Mms-Originator-System:” header shall be used to indicate the address that the recipient MMS Relay/Server shall use as the recipient address with MM4_Forward.RES.

In case there are only blind carbon-copy recipient(s) (“Bcc:”), the behaviour shall be as recommended by RFC2821 [22], Appendix B, i.e. the originating MMS Relay/Server shall only insert an empty “Bcc:” header and no “To:” or “Cc:” headers. The recipient(s) shall then only be indicated in the SMTP command layer (RCPT TO:).

In case there are both “To:” / “Cc:” and “Bcc:” recipients, the “Bcc:” headers shall be removed by the originating MMS Relay/Server and the “Bcc:” recipients shall only be indicated in the SMTP command level (RCPT TO:). This is in accordance with the functionality recommended by RFC2821 [22], Appendix B.

…

### 8.4.4.10 Request Status Codes Clarification

The table below dictates how the originator MMS Relay/Server should interpret the possible values of the X-Mms-Request-Status-Code header field.

**Table 46: Clarification of the Request Status Codes**

| X-Mms-Request-Status-Code | Meaning |
|---|---|
| Ok | The corresponding request and some or all of its contents were accepted without errors. |
| Error-unspecified | An unspecified error occurred during the processing or reception of the corresponding request. |
| Error-service-denied | The corresponding request was rejected due to failure of authentication or authorisation of the originating MMS Relay/Server. |
| Error-message-format-corrupt | An inconsistency with the message format was detected when the corresponding request was parsed. |
| Error-sending-address-unresolved | There were no MMS address (From:, To:, Cc:, Bcc:) in its proper format or none of the addresses belong to the recipient MMS Relay/Server. |
| Error-message-not-found | This status code is obsolete |
| Error-network-problem | The recipient MMS Relay/Server was not able to accept the corresponding request due to capacity overload. |
| Error-content-not-accepted | The MM content was not accepted due to size, media type, copyrights or some other reason. |
| Error-unsupported-message | The recipient MMS Relay/Server does not support the corresponding request abstract message. |

…

### 8.4.5.1 Address Encoding

In the case where E.164 addressing is used and the address resolution returns an RFC 2822 recipient address (ENUM based resolution), this address shall become the ‘forward-path’ argument to the ‘RCPT TO:’ SMTP command as it is described in [22]. The ‘Reverse-Path’ argument to the ‘MAIL FROM:’ SMTP command shall be determined by the originator MMS Relay/Server as it is described in [22].

In the case where E.164 addressing is used and the address resolution returns only the domain of the recipient MMSE, the addresses shall be encoded in the following way:

**SMTP protocol level:**

```
SMTP-address = "<" MMS-address "@" domain ">"

MMS-address = "+" E.164 "/TYPE=PLMN"

E.164 = 1*DIGIT

domain = dom-fragment *( "." dom-fragment )

dom-fragment = ( ALPHA | DIGIT ) *( ALPHA | DIGIT | "-" )
```

**Example:**

If the originator's address was an E.164 address, the address fields used in RCPT shall be converted to the following format by the sender's MMS Relay/Server:

+E.164/TYPE=PLMN@recipient-mmse

where recipient-mmse is a FQDN of the recipient's MMS Relay/Server, e.g.

+358401234567/TYPE=PLMN@mmse.sonera.net

**SMTP commands:**

SMTP commands should be then used in the following way:

```
MAIL FROM: SMTP-address
RCPT TO: SMTP-address
DATA
X-MMS-3GPP-MMS-version: 4.2.0
X-MMS-Message-Type: MM4_forward.REQ
X-MMS-Transaction-ID: "ABCDEFGHIJ0123456789"
X-MMS-Message-ID: "originator-mmse/originator-username/123456789"
Date: Wed, 16 May 2001 10:35:00 +0800
From: MMS-address
To: MMS-address
Subject: Greetings from Greece
Content-Type: text/plain

Hi, …
.
```

NOTE 1: In the example above the "X-MMS-3GPP-MMS-version" header may not refer to the current version of the present document.

NOTE 2: In the case where "Bcc:" (blind carbon-copy) recipients are used, what is specified in 8.4.4.2 takes precedence.

…

# Annex I (normative): MM1 <-> MM4 header mapping

This annex maps the information elements found on MM1 onto the STD 11 header fields of MM4.

The tables below are provided to give a normative end-to-end description of MMS. There is a table for each MM1 abstract message with all its information elements in the left column, the right column shows how the MM1 information elements are mapped onto the STD 11 headers of MM4.

In many cases there is no mapping between MM1 information elements and MM4 STD 11 header fields, this is according to specifications. These information elements are included in the tables below in order to give a complete picture of how the MM1 information elements are handled.

**Table I.1: Mapping MM1_submit.REQ -> MM4_forward.REQ**

| Information elements in MM1_submit.REQ | STD11 Header fields in Egress MM4_forward.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Recipient address | To:, Cc:, Bcc: (NOTE 1, NOTE 2) |
| Content type | Content-Type: |
| Sender address | From: |
| Message class | X-Mms-Message-Class: |
| Date and time | Date: |
| Time of Expiry | X-Mms-Expiry: |
| Earliest Delivery Time | - |
| Delivery report | X-Mms-Delivery-Report: |
| Reply-Charging | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Priority | X-Mms-Priority: |
| Sender visibility | X-Mms-Sender-Visibility: |
| Store | - |
| MM State | - |
| MM Flags | - |
| Read reply | X-Mms-Read-Reply: |
| Subject | Subject: |
| Reply-Charging-ID | - |
| Content | <*message body*> |

NOTE 1: A "Bcc:" field is created on MM4 only when the original MM on MM1 contains only blind-carbon-copy recipient(s). In this case the "Bcc:" field is left blank, see clause 8.4.4.2.

NOTE 2: Recipient addresses for blind-carbon-copy recipient(s) on MM1 are mapped onto <RCPT TO:> commands on SMTP level on MM4.

**Table I.2: Mapping MM1_submit.RES -> MM4_forward.REQ**

| Information elements in MM1_submit.RES | STD11 Header fields in Egress MM4_forward.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Request Status | - |
| Request Status Text | - |
| Message ID | X-Mms-Message-ID: |
| Store Status | - |
| Store Status Text | - |
| Stored Message Reference | - |

**Table I.3: Mapping MM1_notification.REQ <- MM4_forward.REQ**

| Information elements in MM1_notification.REQ | STD11 Header fields in Ingress MM4_forward.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Message class | X-Mms-Message-Class: |
| Message size | - |
| Time of expiry | X-Mms-Expiry: |
| Message Reference | - |
| Subject | Subject: |
| Priority | X-Mms-Priority: |
| Sender address | From: |
| Stored | - |
| Delivery report | X-Mms-Delivery-Report: |
| Reply-Charging | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Reply-Charging-ID | - |
| Element-Descriptor | - |

**Table I.4: Information elements in the MM1_notification.RES.**

| Information elements in MM1_notification.RES | MM4 STD 11 Header fields |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| MM Status | - |
| Report allowed | - |

**Table I.5: Information elements in the MM1_retrieve.REQ**

| Information elements in MM1_retrieve.REQ | MM4 STD 11 Header fields |
|---|---|
| Message Reference | - |

**Table I.6: Mapping MM1_retrieve.RES <- MM4_forward.REQ**

| Information elements in MM1_retrieve.RES | STD11 Header fields in Ingress MM4_Forward.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Message ID | X-Mms-Message-ID: |
| Sender address | From: |
| Content type | Content-type: |
| Recipient address | To: |
| Message class | X-Mms-Message-Class: |
| Date and time | Date: |
| Delivery report | X-Mms-Delivery-Report: |
| Priority | X-Mms-Priority: |
| Read reply | X-Mms-Read-Reply: |
| Subject | Subject: |
| Request Status | - |
| MM State | - |
| MM Flags | - |
| Request Status Text | - |
| Reply-Charging | - |
| Reply-Charging-ID | - |
| Reply-Deadline | - |
| Reply-Charging-Size | - |
| Previously-Sent-By | X-Mms-Previously-Sent-By |
| Previously-Sent-Date | X-Mms-Previously-Sent-Date |
| Content | *<message body>* |

**Table I.7: Information elements in the MM1_acknowledgement.REQ**

| Information elements in MM1_acknowledgement.REQ | MM4 STD 11 Header fields |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Report allowed | - |

**Table I.8: Mapping MM1_forward.REQ -> MM4_forward.REQ**

| Information elements in MM1_forward.REQ | STD11 Header fields in Egress MM4_Forward.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Recipient address | To:, Cc:, Bcc: (NOTE 1, NOTE 2) |
| Forwarding address | From: |
| Date and time | Date: |
| Time of Expiry | X-Mms-Expiry: |
| Earliest delivery time | - |
| Store | - |
| MM State | - |
| MM Flags | - |
| Delivery report | X-Mms-Delivery-Report: |
| Read reply | X-Mms-Read-Reply: |
| Message Reference | - |

NOTE 1: A "Bcc:" field is created on MM4 only when the original MM on MM1 contains only blind-carbon-copy recipient(s). In this case the "Bcc:" field is left blank, see clause 8.4.4.2.

NOTE 2: Recipient addresses for blind-carbon-copy recipient(s) on MM1 are mapped onto <RCPT TO:> commands on SMTP level on MM4.

**Table I.9: Information elements in the MM1_forward.RES.**

| Information elements in MM1_forward.RES | MM4 STD 11 Header fields |
|---|---|
| Message Type | - |
| MMS Version | - |
| Transaction ID | - |
| Request Status | - |
| Request Status Text | - |
| Message ID | - |
| Store Status | - |
| Store Status Text | - |
| Stored Message Reference | - |

**Table I.10: Mapping MM1_delivery_report.REQ <- MM4_delivery_report.REQ**

| Information elements in MM1_delivery_report.REQ | STD11 Header fields in Ingress MM4_delivery_report.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Message ID | X-Mms-Message-ID |
| Recipient address | From: |
| Date and Time | Date: |
| MM Status | X-Mms-MM-Status-Code |

**Table I.11: Mapping MM1_read_reply_recipient.REQ -> MM4_read_reply_report.REQ**

| Information elements in MM1_read_reply_recipient.REQ | STD11 Header fields in Egress MM4_read_reply_report.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Recipient address | From: |
| Originator address | To: |
| Message ID | X-Mms-Message-ID: |
| Date and Time | Date: |
| Read Status | X-Mms-Read-Status: |

**Table I.12: Mapping MM1_ read_reply_originator.REQ <- MM4_ read_reply_report.REQ**

| Information elements in MM1_read_reply_originator.REQ | Ingress STD11 Header fields in MM4_read_reply_report.REQ |
|---|---|
| Message Type | - |
| MMS Version | - |
| Recipient address | From: |
| Originator address | To: |
| Message ID | X-Mms-Message-ID: |
| Date and Time | Date: |
| Read Status | X-Mms-Read-Status: |