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

Tdoc TP-020236

3GPP TSG-T3 #24
Seattle, United States, 19 –22 August 2002

Tdoc T3-020701

Title:	LS on MMS Parameters on the USIM
Response to:	LS (T2-020811) on MMS UA Behaviour with Respect to Handling MMS Parameters on the USIM
Work Item:	MMS
Source:	T3
To:	T2
Cc:	T

Contact Person:
Name: Sonia Compans
E-mail Address: sonia.compans@gemplus.com

Attachments: Revised version of T2-020799 (CR 23.140 REL-4 MMS parameters on the USIM including mandatory UA behaviour wrt status of EF_MMSN)
T3-020702

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1. Overall Description:

T3 acknowledges the work done by T2.

When reviewing T2-020799, T3 pointed out the following:
- The description of the Connectivity Parameters does not reflect the current T3 specification.
- The goal of introducing the use of the USIM in TS 23.140 Release 4 was to make the use of the MMS information on the USIM mandatory.

As a consequence, T3 would like to provide T2 with a revised version of T2-020799 where:
- The section on the Connectivity Parameters has been modified to reflect T3 specification.
- The section 6.1.11 makes the use of the USIM information mandatory.

T3 would like T2 to take those proposed changes into consideration for their release 4 and release 5 version of TS 23.140.

Moreover, T3 has approved a CR included in T3-020702 which provides clarifications to the MMS information stored in the USIM. It has been clarified that a set of Connectivity Parameters shall contain only one MMS Implementation parameter, one MMS Relay/server parameter, and one Gateway parameter.

2. Actions:

To T2:

Take the proposed changes to T2-020799 into consideration for their release 4 and release 5 version of TS 23.140.
Evaluate whether the clarifications made to the MMS information stored in the USIM have impact on TS 23.140.

3. Date of next T3 Meetings:

T3 Meeting #25	5-8 November 2002	Maastricht, Netherlands
T3 Meeting #26	11-14 February 2003	TBD

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

T2-020799

CR-Form-v5

CHANGE REQUEST

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

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

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

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

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

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

Reason for change:	⌘	3GPP T has required T2 to incorporate in the MMS REL-4 specifications the relevant changes related to the MMS support on the USIM for REL-4. This CR addresses the issues related to data inconsistency between the ME and the USIM.
Summary of change:	⌘	This CR reflects the support for MMS in the USIM specificatons, 3GPP TS 31.102, and clarifies the handling of MMS-related information on the USIM.
Consequences if not approved:	⌘	1) Consistency issues between the MMS specifications, 3GPP TS 23.140 and the USIM specifications, 3GPP TS 31.102 2) The MMS User Agent behaviour would not be defined 3) Interoperability issues when a user changes his/her terminal

Clauses affected:	⌘	2, 5.1.1, 6.1.11 (new section), Annex F (new section)		
Other specs Affected:	⌘	[X] Other core specifications [ ] Test specifications [ ] O&M Specifications	⌘	3GPP TS 31.102
Other comments:	⌘	This CR copies the corresponding sections from 23.140 v5.3.0 into REL-4. In addition the following (approved) ***category F*** REL-5 CRs are also incorporated in order not to create inconsistency between REL-4 and REL-5: T2-020735, T2-020749, T2-020773		

2 References

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5.1 MMS User Agent

5.1.1 MMS User Agent operations

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

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

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

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

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

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

6 MMS Service Behaviour Description

…

6.1.11 Handling of MMS-related information on the USIM

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

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

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

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

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

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

MMS user preferences information, which is stored on the USIM, shall~~may~~ 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, shall~~may~~ be stored on the USIM together with an associated status by a recipient MMS User Agent.

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

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

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

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

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

F.1 MMS Connectivity Information

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

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

MMS Relay/Server

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

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

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

- authentication pw: indicates the authentication secret used for authentication by the WAP Gateway (PXAUTH-PW)

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

- bearer: indicates the type of network (e.g. CSD, GPRS) (BEARER)

- address: the address of the associated access point. The address could be of different types depending on the bearer, as indicated by the "type of address" (NAP-ADDRESS)

- type of address: indicates the type (e.g. MSISDN for CSD, APN for GPRS) of the "address" of the access point (NAP-ADDRTYPE)

- speed: indicates the speed of the connection for circuit switched bearers (LINKSPEED)

- call type: indicates type of call for specific bearer (e.g. analogue for CSD) (CALLTYPE)

- authentication type: indicates the authentication protocol used by the access point (AUTHTYPE)

- authentication id: indicates the authentication id used for authentication by the access point (AUTHNAME)

- authentication pw: indicates the authentication secret used for authentication by the access point (AUTHSECRET)

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

F.2 User Preferences

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

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

- Delivery report (*Delivery-Report*, encoded as 0x06)

- Read reply (*Read-Reply*, encoded as 0x10)

- Sender visibility (*Sender-Visibility*, encoded as 0x14)

- Priority (*Priority*, encoded as 0x0F)

- Time of expiry (*Expiry*, encoded as 0x08)

- Earliest delivery time (*Delivery-Time*, encoded as 0x07)

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

3GPP TSG-T3 Meeting #24
Seattle, USA, 19-22 August 2002

T3-020702

CR-Form-v7

CHANGE REQUEST

⌘ **31.102** **CR** **117** ⌘ **rev** **-** ⌘ Current version: **4.5.0** ⌘

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

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

Title:	⌘	Correction and clarification of MMS features
Source:	⌘	T3
Work item code:	⌘	TEI
Date:	⌘	21-08-2002
Category:	⌘	**F**
Release:	⌘	REL-4

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

Use one of the following releases:

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

Reason for change:	⌘	No default set of connectivity parameters defined. It is not clear whether the TLV object in the MMS Connectivity Parameters may occur one or several times. Annex J is never referred to.
Summary of change:	⌘	Definition of a default set of MMS Connectivity parameters It is clarified whether the TLV objects of an MMS Connectivity Parameter may occur only one time or several times. Addition of a reference to Annex J in section 4.2.70
Consequences if not approved:	⌘	The current version may imply different interpretations and thus different implementations

Clauses affected:	⌘	4.2.69, 4.2.70, 4.2.71, Annex J

Other specs affected:	Y	N			
⌘	X		Other core specifications	⌘	TS 23.140 possibly
		X	Test specifications		
		X	O&M Specifications		

Other comments:	⌘	

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

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

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

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

4.2.69 EF_{MMSICP} (MMS Issuer Connectivity Parameters)

If service n°52 is "available", this file shall be present.
This EF contains values for Multimedia Messaging Connectivity Parameters as determined by the issuer, which can be used by the ME for MMS network connection. This file may contain one or more sets of Multimedia Messaging Issuer Connectivity Parameters. The first set of Multimedia Messaging Issuer Connectivity Parameters is used as the default set. Each set of Multimedia Messaging Issuer Connectivity Parameters may consist of one or more Interface to Core Network and Bearer information TLV objects, but shall contain only one MMS implementation TLV object, one MMS Relay/Server TLV object and one Gateway TLV object. The order of the Interface to Core Network and Bearer ~~bearer~~ information TLV objects in the MMS Connectivity TLV object defines the priority of the Interface to Core Network and Bearer information~~bearers~~, with the first TLV object having the highest priority.

Identifier: '6FD0'	Structure: Transparent	Optional
File Size: X_1+…+ X_n ~~X~~ bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	ADM
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X_1~~X~~	MMS Connectivity Parameters TLV object~~s~~	M	X_1 bytes
X_1+1 to X_1 + X_2	MMS Connectivity Parameters TLV object	O	X_2 bytes
…	…		
X_1+…+ X_{n-1}+1 to X_1+…+ X_n	MMS Connectivity Parameters TLV object	O	X_n bytes

- MMS Connectivity Parameters tags

Description	**Tag Value**
MMS Connectivity Parameters Tag	'AB'
MMS Implementation Tag	‘80’
MMS Relay/Server Tag	‘81’
Interface to Core Network and Bearer Information Tag	'82'
GatewayTag	'83'

- MMS Connectivity Parameters contents

Description	**Value**	**M/O**	**Length (bytes)**

MMS Connectivity Parameters Tag	'AB'	M	1
Length	Note 1	M	Note 2
MMS Implementation Tag	'80'	M	1
Length	1	M	1
MMS Implementation Information	--	M	1
MMS Relay/Server Tag	'81'	M	1
Length	X	M	Note 2
MMS Relay/Server Address	--	M	X
1st Interface to Core Network and Bearer Information Tag (highest priority)	'82'	M	1
Length	Y1	M	Note 2
1st Interface to Core Network and Bearer information	--	M	Y1
2nd Interface to Core Network and Bearer Information Tag	'82'	O	1
Length	Y2	O	Note 2
2nd Interface to Core Network and Bearer information	--	O	Y2
…			
nth Interface to Core Network and Bearer Information Tag	'82'	O	1
Length	Y3	O	Note 2
nth Interface to Core Network and Bearer information	--	O	Y3
GatewayTag	'83'	O	1
Length	Z	O	Note 2
Gateway Information	--	O	Z
Note 1 : This is the total size of the constructed TLV object Note 2 : The length is coded according to ISO/IEC 8825 [35]			

- MMS Implementation Tag '80'

  See section 4.2.67 for contents and coding.

- MMS Relay/server Tag '81'

  Contents:

  The MMS relay/server contains the address of the associated MMS relay/server.

  Coding:

  The MMS relay/server address is coded according to the guideline provided in 3GPP TS 23.140 [38].

- Interface to Core Network and Bearer Information Tag '82'

  Contents:

  The Interface to Core Network and Bearer Information may contain the following information to set up the bearer: Bearer, Address, Type of address, Speed, Call type, Authentication type, Authentication id, Authentication password.

  Coding:

  The coding is according to the guideline provided in 3GPP TS 23.140 [38].

- Gateway Tag '83'

  Contents:

  The Gateway may contain the following information; Address , Type of address, Port, Service, Authentication type , Authentication id and Authentication password.

  Coding:

  The coding is according to the guideline provided in 3GPP TS 23.140 [38].

Unused bytes shall be set to 'FF'.

4.2.70 EF_{MMSUP} (MMS User Preferences)

If service n°52 is "available", this file shall be present.

This EF contains values for Multimedia Messaging Service User Preferences, which can be used by the ME for user assistance in preparation of mobile multimedia messages (e.g. default values for parameters that are often used).

Identifier: '6FD1'	Structure: Linear Fixed	Optional
Record Length: X bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X	MMS User Preference TLV Objects	M	X bytes

- MMS User Preference tags

Description	Tag Value
MMS Implementation Tag	'80'
MMS User preference profile name Tag	'81'
MMS User Preference information Tag	'82'

MMS User Preference information

Description	Value	M/O	Length (bytes)
MMS Implementation Tag	'80'	M	1
Length	1	M	Note
MMS Implementation information	--	M	1
MMS User preference profile name Tag	'81'	M	1
Length	X	M	Note
MMS User profile name	--	M	X
MMS User Preference information Tag	'82'	M	1
Length	Y	M	Note
MMS User Preference information	--	M	Y
Note : The length is coded according to ISO/IEC 8825 [35]			

- MMS Implementation Tag '80'

  For contents and coding see 4.2.67

- MMS User preference profile name Tag '81'

  Contents:

  Alpha tagging of the MMS user preference profile.

  Coding:

  this alpha-tagging shall use either:

  - the SMS default 7-bit coded alphabet as defined in TS 23.038 [5] with bit 8 set to 0. The alpha identifier shall be left justified.

  or:

  - one of the UCS2 coded options as defined in the annex of TS 31.101 [11].

- MMS User Preference information Tag '82'

  Contents:

  The following information elements may be coded; Sender Visibility, Delivery Report, Read-Reply, Priority, Time of Expiry and Earliest Delivery Time.

Coding:
Depending upon the MMS implementation as indicated in Tag '80'.

An Example for the coding of these parameters can be found in Annex J.

4.2.71 EF_{MMSUCP} (MMS User Connectivity Parameters)

If service n°52 and n°55 are "available", this file shall be present.
This EF contains values for Multimedia Messaging Connectivity Parameters as determined by the user, which can be used by the ME for MMS network connection. This file may contain one or more sets of Multimedia Messaging User Connectivity Parameters. Each set of Multimedia Messaging User Connectivity Parameters may consist of one or more Interface to Core Network and Bearer information TLV objects, but shall contain only one MMS implementation TLV object, one MMS Relay/Server TLV object and one Gateway TLV object.The order of the Interface to Core Network and Bearer ~~bearer~~ information TLV objects in the MMS Connectivity TLV object defines the priority of the Interface to Core Network and Bearer information~~bearers~~, with the first TLV object having the highest priority.

Identifier: '6FD2'	Structure: Transparent	Optional
File Size: X_1+…+ X_n ~~X~~ bytes	Update activity: low	

Access Conditions:

READ	PIN
UPDATE	PIN/PIN2 (fixed during administrative management)
DEACTIVATE	ADM
ACTIVATE	ADM

Bytes	Description	M/O	Length
1 to X_1~~X~~	MMS Connectivity Parameters TLV objects	O	X_1~~X~~ bytes
X_1+1 to X_1 + X_2	MMS Connectivity Parameters TLV object	O	X_2 bytes
…	…		
X_1+…+ X_{n-1}+1 to X_1+…+ X_n	MMS Connectivity Parameters TLV object	O	X_n bytes

For the contents and coding see 4.2.69

Annex J (informative): Example of MMS coding

This annex gives an example for the coding of MMS User Preferences, while the MMS User Information Preference parameters are coded according to the WAP implementation of MMS.

0x80 MMS Implementation Tag

0x01 Length

0x01 MMS Implementation information (WAP)

0x81 MMS User preference profile name Tag

0x1C Length

“Christmas Card”

0x82 MMS User Information Preference tag

0x19 Length

0x14 0x80 (visibility: hide)

0x06 0x80 (delivery report: yes)

0x10 0x80 (Read-reply: yes)

0x0F 0x81 (Priority: Normal)

0x07 0x07 0x80 0x05 0x11 0x22 0x33 0x44 0x55 (Delivery time tag: Value-Length: Absolute-token tag; Date Value-Length Date -Value)

0x08 0x06 0x81 0x04 0x55 0x22 0x33 0x44 (Expiry: Tag:: Value-Length : Relative-token Tag ; Delta -Second Value-Length, Delta -Second-Value)

…