3GPP TSG-T (Terminals) Meeting #25
Palm Springs, CA, USA
8 - 10 September 2004

TP-040171

Agenda Item: 5.2.3

Source: T2

Title: Change Request on SMS

Document for: Approval

Spec	CR	Rev	Rel	Subject	Cat	Version-Current	Version-New	Doc-2nd-Level	Workitem
23.038	011	-	Rel-4	Message Waiting Indication – how to handle Multiple Subscriber Profiles	F	4.4.0	4.5.0	T2-040331	TEI4
23.038	012	-	Rel-5	Message Waiting Indication – how to handle Multiple Subscriber Profiles	A	5.0.0	5.1.0	T2-040332	TEI5
23.038	013	-	Rel-6	Message Waiting Indication – how to handle Multiple Subscriber Profiles	F	6.0.0	6.1.0	T2-040333	TEI6
23.038	014	-	Rel-6	Enhanced Voice Mail Information – not applicable for CBS	F	6.0.0	6.1.0	T2-040338	TEI6
23.040	074	-	Rel-4	Special Message Indication – how to handle Multiple Subscriber Profiles	F	4.8.0	4.9.0	T2-040334	TEI4
23.040	075	-	Rel-5	Special Message Indication – how to handle Multiple Subscriber Profiles	A	5.7.1	5.8.0	T2-040335	TEI5
23.040	076	-	Rel-6	Special Message Indication – introduction of Multiple Subscriber Profiles	B	6.4.0	6.5.0	T2-040336	TEI6
23.040	077	-	Rel-6	Enhanced Voice Mail Information – access number priority	F	6.4.0	6.5.0	T2-040337	TEI6

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040331

CR-Form-v7

CHANGE REQUEST

⌘ **23.038** **CR** **011** ⌘ **rev** **-** ⌘ Current version: **4.4.0** ⌘

*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:	⌘	Message Waiting Indication – how to handle Multiple Subscriber Profiles
Source:	⌘	T2
Work item code:	⌘	TEI4
Date:	⌘	23/08/2004
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:	⌘	22.097 and 23.097 describe the Multiple Subscriber Profile (MSP). They explicitly state that it will not be possible to indicate the profile used for the SMS-MT case. 51.011 and 31.102 define an Elementary Field on SIM and USIM where to store the Message Waiting Indication Status (EF_{MWIS}). This EF may contain as many records as there are subscriber profiles. 23.038 defines a mechanism how to update the EF_{MWIS}. However there is no means to indicate the profile, neither via SMS in general nor within the Message Waiting Indication. Therefore an ME has no means to distinguish which record of the EF_{MWIS} records requires an update.
Summary of change:	⌘	Let ME always update the first record of EF_{MWIS}.
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	4

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

⌘

Other comments:	⌘	The opportunity has been taken to do minor editorial changes and add missing

	references.

How to create CRs using this form:

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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.

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] void

[2] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the User Equipment (UE)".

[3] 3GPP TS 23.090: "Unstructured Supplementary Service Data (USSD) - Stage 2".

[4] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS) ".

[5] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[6] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[7] 3GPP TS 24.012: "Cell Broadcast Service (CBS) support on the mobile radio interface".

[8] 3GPP TS 27.005: "Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)".

[10] ISO/IEC 10646: "Information technology; Universal Multiple-Octet Coded Character Set (UCS)".

[11] 3GPP TS 24.090: "Unstructured Supplementary Service Data (USSD); Stage 3".

[12] ISO 639: "Code for the representation of names of languages".

[13] 3GPP TS 23.042: "Compression algorithm for text messaging services".

[14] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[15] "Wireless Datagram Protocol Specification", Wireless Application Protocol Forum Ltd.

[16] ISO 1073-1 and ISO 1073-2 Alphanumeric character sets for optical recognition – Parts 1 and 2: Character sets OCR-A and OCR-B, respectively - Shapes and dimensions of the printed image.

[17] 3GPP TS 31.102: “Characteristics of the USIM application”

[18] 3GPP TS 51.011: “Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface”

4 SMS Data Coding Scheme

The TP-Data-Coding-Scheme field, defined in 3GPP TS 23.040 [4], indicates the data coding scheme of the TP-UD field, and may indicate a message class. Any reserved codings shall be assumed to be the GSM 7 bit default alphabet (the same as codepoint 00000000) by a receiving entity. The octet is used according to a coding group which is indicated in bits 7..4. The octet is then coded as follows:

Coding Group Bits 7..4	Use of bits 3..0
00xx	General Data Coding indication Bits 5..0 indicate the following: Bit 5, if set to 0, indicates the text is uncompressed Bit 5, if set to 1, indicates the text is compressed using the compression algorithm defined in 3GPP TS 23.042 [13] Bit 4, if set to 0, indicates that bits 1 to 0 are reserved and have no message class meaning Bit 4, if set to 1, indicates that bits 1 to 0 have a message class meaning:: Bit 1 Bit 0 Message Class 0 0 Class 0 0 1 Class 1 Default meaning: ME-specific. 1 0 Class 2 (U)SIM specific message 1 1 Class 3 Default meaning: TE specific (see 3GPP TS 27.005 [8]) Bits 3 and 2 indicate the character set being used, as follows : Bit 3 Bit2 Character set: 0 0 GSM 7 bit default alphabet 0 1 8 bit data 1 0 UCS2 (16bit) [10] 1 1 Reserved NOTE: The special case of bits 7..0 being 0000 0000 indicates the GSM 7 bit default alphabet with no message class
01xx	Message Marked for Automatic Deletion Group This group can be used by the SM originator to mark the message (stored in the ME or (U)SIM) for deletion after reading irrespective of the message class. The way the ME will process this deletion should be manufacturer specific but shall be done without the intervention of the End User or the targeted application.The mobile manufacturer may optionally provide a means for the user to prevent this automatic deletion. Bit 5..0 are coded exactly the same as Group 00xx
1000..1011	Reserved coding groups
1100	Message Waiting Indication Group: Discard Message The specification for this group is exactly the same as for Group 1101, except that: - after presenting an indication and storing the status, the ME may discard the contents of the message. The ME shall be able to receive, process and acknowledge messages in this group, irrespective of memory availability for other types of short message.
1101	Message Waiting Indication Group: Store Message This Group defines an indication to be provided to the user about the status of types of message waiting on systems connected to the GSM/UMTS PLMN. The ME should present this indication as an icon on the screen, or other MMI indication. The ME shall update the contents of the Message Waiting Indication Status on the SIM (see 3GPP TS 51.011 [18]) or USIM (see 3GPP TS 31.102 [17]) when present or otherwise should store the status in the ME. In case there are multiple records of EF_{MWIS} this information should be stored within the first record. The contents of the Message Waiting Indication Status should control the ME indicator. For each indication supported, the mobile may provide storage for the Origination Address. The ME may take note of the Origination Address for messages in this group and group 1100.

Coding Group Bits 7..4	Use of bits 3..0
	Text included in the user data is coded in the GSM 7 bit default alphabet. Where a message is received with bits 7..4 set to 1101, the mobile shall store the text of the SMS message in addition to setting the indication. The indication setting should take place irrespective of memory availability to store the short message. Bits 3 indicates Indication Sense: Bit 3 0 Set Indication Inactive 1 Set Indication Active Bit 2 is reserved, and set to 0 Bit 1 Bit 0 Indication Type: 0 0 Voicemail Message Waiting 0 1 Fax Message Waiting 1 0 Electronic Mail Message Waiting 1 1 Other Message Waiting* * Mobile manufacturers may implement the "Other Message Waiting" indication as an additional indication without specifying the meaning. The meaning of this indication is intended to be standardized in the future, so Operators should not make use of this indication until the standard for this indication is finalized.
1110	Message Waiting Indication Group: Store Message The coding of bits 3..0 and functionality of this feature are the same as for the Message Waiting Indication Group above, (bits 7..4 set to 1101) with the exception that the text included in the user data is coded in the uncompressed UCS2 character set.
1111	Data coding/message class Bit 3 is reserved, set to 0. Bit 2 Message coding: 0 GSM 7 bit default alphabet 1 8-bit data Bit 1 Bit 0 Message Class: 0 0 Class 0 0 1 Class 1 default meaning: ME-specific. 1 0 Class 2 (U)SIM-specific message. 1 1 Class 3 default meaning: TE specific (see 3GPP TS 27.005 [8])

GSM 7 bit default alphabet indicates that the TP-UD is coded from the GSM 7 bit default alphabet given in clause 6.2.1. When this character set is used, the characters of the message are packed in octets as shown in clause 6.1.2.1.1, and the message can consist of up to 160 characters. The GSM 7 bit default alphabet shall be supported by all MSs and SCs offering the service. If the GSM 7 bit default alphabet extension mechanism is used then the number of displayable characters will reduce by one for every instance where the GSM 7 bit default alphabet extension table is used. 8-bit data indicates that the TP-UD has user-defined coding, and the message can consist of up to 140 octets.

UCS2 character set indicates that the TP-UD has a UCS2 [10] coded message, and the message can consist of up to 140 octets, i.e. up to 70 UCS2 characters. The General notes specified in clause 6.1.1 override any contrary specification in UCS2, so for example even in UCS2 a <CR> character will cause the MS to return to the beginning of the current line and overwrite any existing text with the characters which follow the <CR>.

When a message is compressed, the TP-UD consists of the GSM 7 bit default alphabet or UCS2 character set compressed message, and the compressed message itself can consist of up to 140 octets in total.

When a mobile terminated message is class 0 and the MS has the capability of displaying short messages, the MS shall display the message immediately and send an acknowledgement to the SC when the message has successfully reached the MS irrespective of whether there is memory available in the (U)SIM or ME. The message shall not be automatically stored in the (U)SIM or ME.

The ME may make provision through MMI for the user to selectively prevent the message from being displayed immediately.

If the ME is incapable of displaying short messages or if the immediate display of the message has been disabled through MMI then the ME shall treat the short message as though there was no message class, i.e. it will ignore bits 0 and 1 in the TP-DCS and normal rules for memory capacity exceeded shall apply.

When a mobile terminated message is Class 1, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored. The MS shall normally store the message in the ME by default, if that is possible, but otherwise the message may be stored elsewhere, e.g. in the (U)SIM. The user may be able to override the default meaning and select their own routing.

When a mobile terminated message is Class 2 ((U)SIM-specific), an MS shall ensure that the message has been transferred to the SMS data field in the (U)SIM before sending an acknowledgement to the SC. The MS shall return a "protocol error, unspecified" error message (see 3GPP TS 24.011 [6]) if the short message cannot be stored in the (U)SIM and there is other short message storage available at the MS. If all the short message storage at the MS is already in use, the MS shall return "memory capacity exceeded". This behaviour applies in all cases except for an MS supporting (U)SIM Application Toolkit when the Protocol Identifier (TP-PID) of the mobile terminated message is set to "(U)SIM Data download" (see 3GPP TS 23.040 [4]).

When a mobile terminated message is Class 3, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored, irrespectively of whether the MS supports an SMS interface to a TE, and without waiting for the message to be transferred to the TE. Thus the acknowledgement to the SC of a TE-specific message does not imply that the message has reached the TE. Class 3 messages shall normally be transferred to the TE when the TE requests "TE-specific" messages (see 3GPP TS 27.005 [8]). The user may be able to override the default meaning and select their own routing.

The message class codes may also be used for mobile originated messages, to provide an indication to the destination SME of how the message was handled at the MS.

The MS will not interpret reserved or unsupported values but shall store them as received. The SC may reject messages with a Data Coding Scheme containing a reserved value or one which is not supported.

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040332

CR-Form-v7

CHANGE REQUEST

⌘ **23.038** **CR** **012** ⌘ **rev** **-** ⌘ Current version: **5.0.0** ⌘

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Proposed change affects: UICC apps⌘ ☐ ME ☒ Radio Access Network ☐ Core Network ☐

Title:	⌘	Message Waiting Indication – how to handle Multiple Subscriber Profiles
Source:	⌘	T2
Work item code:	⌘	TEI5
Date:	⌘	23/08/2004
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
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Coding Group Bits 7..4	Use of bits 3..0
	Text included in the user data is coded in the GSM 7 bit default alphabet. Where a message is received with bits 7..4 set to 1101, the mobile shall store the text of the SMS message in addition to setting the indication. The indication setting should take place irrespective of memory availability to store the short message. Bits 3 indicates Indication Sense: Bit 3 0 Set Indication Inactive 1 Set Indication Active Bit 2 is reserved, and set to 0 Bit 1 Bit 0 Indication Type: 0 0 Voicemail Message Waiting 0 1 Fax Message Waiting 1 0 Electronic Mail Message Waiting 1 1 Other Message Waiting* * Mobile manufacturers may implement the "Other Message Waiting" indication as an additional indication without specifying the meaning. The meaning of this indication is intended to be standardized in the future, so Operators should not make use of this indication until the standard for this indication is finalized.
1110	Message Waiting Indication Group: Store Message The coding of bits 3..0 and functionality of this feature are the same as for the Message Waiting Indication Group above, (bits 7..4 set to 1101) with the exception that the text included in the user data is coded in the uncompressed UCS2 character set.
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GSM 7 bit default alphabet indicates that the TP-UD is coded from the GSM 7 bit default alphabet given in clause 6.2.1. When this character set is used, the characters of the message are packed in octets as shown in clause 6.1.2.1.1, and the message can consist of up to 160 characters. The GSM 7 bit default alphabet shall be supported by all MSs and SCs offering the service. If the GSM 7 bit default alphabet extension mechanism is used then the number of displayable characters will reduce by one for every instance where the GSM 7 bit default alphabet extension table is used. 8-bit data indicates that the TP-UD has user-defined coding, and the message can consist of up to 140 octets.

UCS2 character set indicates that the TP-UD has a UCS2 [10] coded message, and the message can consist of up to 140 octets, i.e. up to 70 UCS2 characters. The General notes specified in clause 6.1.1 override any contrary specification in UCS2, so for example even in UCS2 a <CR> character will cause the MS to return to the beginning of the current line and overwrite any existing text with the characters which follow the <CR>.

When a message is compressed, the TP-UD consists of the GSM 7 bit default alphabet or UCS2 character set compressed message, and the compressed message itself can consist of up to 140 octets in total.

When a mobile terminated message is class 0 and the MS has the capability of displaying short messages, the MS shall display the message immediately and send an acknowledgement to the SC when the message has successfully reached the MS irrespective of whether there is memory available in the (U)SIM or ME. The message shall not be automatically stored in the (U)SIM or ME.

The ME may make provision through MMI for the user to selectively prevent the message from being displayed immediately.

If the ME is incapable of displaying short messages or if the immediate display of the message has been disabled through MMI then the ME shall treat the short message as though there was no message class, i.e. it will ignore bits 0 and 1 in the TP-DCS and normal rules for memory capacity exceeded shall apply.

When a mobile terminated message is Class 1, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored. The MS shall normally store the message in the ME by default, if that is possible, but otherwise the message may be stored elsewhere, e.g. in the (U)SIM. The user may be able to override the default meaning and select their own routing.

When a mobile terminated message is Class 2 ((U)SIM-specific), an MS shall ensure that the message has been transferred to the SMS data field in the (U)SIM before sending an acknowledgement to the SC. The MS shall return a "protocol error, unspecified" error message (see 3GPP TS 24.011 [6]) if the short message cannot be stored in the (U)SIM and there is other short message storage available at the MS. If all the short message storage at the MS is already in use, the MS shall return "memory capacity exceeded". This behaviour applies in all cases except for an MS supporting (U)SIM Application Toolkit when the Protocol Identifier (TP-PID) of the mobile terminated message is set to "(U)SIM Data download" (see 3GPP TS 23.040 [4]).

When a mobile terminated message is Class 3, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored, irrespectively of whether the MS supports an SMS interface to a TE, and without waiting for the message to be transferred to the TE. Thus the acknowledgement to the SC of a TE-specific message does not imply that the message has reached the TE. Class 3 messages shall normally be transferred to the TE when the TE requests "TE-specific" messages (see 3GPP TS 27.005 [8]). The user may be able to override the default meaning and select their own routing.

The message class codes may also be used for mobile originated messages, to provide an indication to the destination SME of how the message was handled at the MS.

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3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040333

CR-Form-v7

CHANGE REQUEST

⌘ **23.038** **CR** **013** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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 ☐

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Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	23/08/2004
Category:	⌘	**F**
Release:	⌘	Rel-6

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Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	22.097 and 23.097 describe the Multiple Subscriber Profile (MSP). They explicitly state that it will not be possible to indicate the profile used for the SMS-MT case. 51.011 and 31.102 define an Elementary Field on SIM and USIM where to store the Message Waiting Indication Status (EF_{MWIS}). This EF may contain as many records as there are subscriber profiles. 23.038 defines a mechanism how to update the EF_{MWIS}. However there is no means to indicate the profile, neither via SMS in general nor within the Message Waiting Indication. Therefore an ME has no means to distinguish which record of the EF_{MWIS} records requires an update.
Summary of change:	⌘	Let ME always update the first record of EF_{MWIS}.
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	4

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

⌘

Other comments:	⌘	The opportunity has been taken to do minor editorial changes and add missing

	references.

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.

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] void

[2] 3GPP TS 22.030: "Man-Machine Interface (MMI) of the User Equipment (UE)".

[3] 3GPP TS 23.090: "Unstructured Supplementary Service Data (USSD) - Stage 2".

[4] 3GPP TS 23.040: "Technical realization of the Short Message Service (SMS) ".

[5] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[6] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[7] 3GPP TS 24.012: "Cell Broadcast Service (CBS) support on the mobile radio interface".

[8] 3GPP TS 27.005: "Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)".

[10] ISO/IEC 10646: "Information technology; Universal Multiple-Octet Coded Character Set (UCS)".

[11] 3GPP TS 24.090: "Unstructured Supplementary Service Data (USSD); Stage 3".

[12] ISO 639: "Code for the representation of names of languages".

[13] 3GPP TS 23.042: "Compression algorithm for text messaging services".

[14] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[15] "Wireless Datagram Protocol Specification", Wireless Application Protocol Forum Ltd.

[16] ISO 1073-1 and ISO 1073-2 Alphanumeric character sets for optical recognition – Parts 1 and 2: Character sets OCR-A and OCR-B, respectively - Shapes and dimensions of the printed image.

[17] 3GPP TS 31.102: “Characteristics of the USIM application”

[18] 3GPP TS 51.011: “Specification of the Subscriber Identity Module - Mobile Equipment (SIM - ME) interface”

4 SMS Data Coding Scheme

The TP-Data-Coding-Scheme field, defined in 3GPP TS 23.040 [4], indicates the data coding scheme of the TP-UD field, and may indicate a message class. Any reserved codings shall be assumed to be the GSM 7 bit default alphabet (the same as codepoint 00000000) by a receiving entity. The octet is used according to a coding group which is indicated in bits 7..4. The octet is then coded as follows:

Coding Group Bits 7..4	Use of bits 3..0
00xx	General Data Coding indication Bits 5..0 indicate the following: Bit 5, if set to 0, indicates the text is uncompressed Bit 5, if set to 1, indicates the text is compressed using the compression algorithm defined in 3GPP TS 23.042 [13] Bit 4, if set to 0, indicates that bits 1 to 0 are reserved and have no message class meaning Bit 4, if set to 1, indicates that bits 1 to 0 have a message class meaning:: Bit 1 Bit 0 Message Class 0 0 Class 0 0 1 Class 1 Default meaning: ME-specific. 1 0 Class 2 (U)SIM specific message 1 1 Class 3 Default meaning: TE specific (see 3GPP TS 27.005 [8]) Bits 3 and 2 indicate the character set being used, as follows : Bit 3 Bit2 Character set: 0 0 GSM 7 bit default alphabet 0 1 8 bit data 1 0 UCS2 (16bit) [10] 1 1 Reserved NOTE: The special case of bits 7..0 being 0000 0000 indicates the GSM 7 bit default alphabet with no message class
01xx	Message Marked for Automatic Deletion Group This group can be used by the SM originator to mark the message (stored in the ME or (U)SIM) for deletion after reading irrespective of the message class. The way the ME will process this deletion should be manufacturer specific but shall be done without the intervention of the End User or the targeted application. The mobile manufacturer may optionally provide a means for the user to prevent this automatic deletion. Bit 5..0 are coded exactly the same as Group 00xx
1000..1011	Reserved coding groups
1100	Message Waiting Indication Group: Discard Message The specification for this group is exactly the same as for Group 1101, except that: - after presenting an indication and storing the status, the ME may discard the contents of the message. The ME shall be able to receive, process and acknowledge messages in this group, irrespective of memory availability for other types of short message.
1101	Message Waiting Indication Group: Store Message This Group defines an indication to be provided to the user about the status of types of message waiting on systems connected to the GSM/UMTS PLMN. The ME should present this indication as an icon on the screen, or other MMI indication. The ME shall update the contents of the Message Waiting Indication Status on the SIM (see 3GPP TS 51.011 [18]) or USIM (see 3GPP TS 31.102 [17]) when present or otherwise should store the status in the ME. In case there are multiple records of EF_{MWIS} this information shall be stored within the first record. The contents of the Message Waiting Indication Status should control the ME indicator. For each indication supported, the mobile may provide storage for the Origination Address. The ME may take note of the Origination Address for messages in this group and group 1100.

Coding Group Bits 7..4	Use of bits 3..0
	Text included in the user data is coded in the GSM 7 bit default alphabet. Where a message is received with bits 7..4 set to 1101, the mobile shall store the text of the SMS message in addition to setting the indication. The indication setting should take place irrespective of memory availability to store the short message. Bits 3 indicates Indication Sense: Bit 3 0 Set Indication Inactive 1 Set Indication Active Bit 2 is reserved, and set to 0 Bit 1 Bit 0 Indication Type: 0 0 Voicemail Message Waiting 0 1 Fax Message Waiting 1 0 Electronic Mail Message Waiting 1 1 Other Message Waiting* * Mobile manufacturers may implement the "Other Message Waiting" indication as an additional indication without specifying the meaning.
1110	Message Waiting Indication Group: Store Message The coding of bits 3..0 and functionality of this feature are the same as for the Message Waiting Indication Group above, (bits 7..4 set to 1101) with the exception that the text included in the user data is coded in the uncompressed UCS2 character set.
1111	Data coding/message class Bit 3 is reserved, set to 0. Bit 2 Message coding: 0 GSM 7 bit default alphabet 1 8-bit data Bit 1 Bit 0 Message Class: 0 0 Class 0 0 1 Class 1 default meaning: ME-specific. 1 0 Class 2 (U)SIM-specific message. 1 1 Class 3 default meaning: TE specific (see 3GPP TS 27.005 [8])

GSM 7 bit default alphabet indicates that the TP-UD is coded from the GSM 7 bit default alphabet given in clause 6.2.1. When this character set is used, the characters of the message are packed in octets as shown in clause 6.1.2.1.1, and the message can consist of up to 160 characters. The GSM 7 bit default alphabet shall be supported by all MSs and SCs offering the service. If the GSM 7 bit default alphabet extension mechanism is used then the number of displayable characters will reduce by one for every instance where the GSM 7 bit default alphabet extension table is used. 8-bit data indicates that the TP-UD has user-defined coding, and the message can consist of up to 140 octets.

UCS2 character set indicates that the TP-UD has a UCS2 [10] coded message, and the message can consist of up to 140 octets, i.e. up to 70 UCS2 characters. The General notes specified in clause 6.1.1 override any contrary specification in UCS2, so for example even in UCS2 a <CR> character will cause the MS to return to the beginning of the current line and overwrite any existing text with the characters which follow the <CR>.

When a message is compressed, the TP-UD consists of the GSM 7 bit default alphabet or UCS2 character set compressed message, and the compressed message itself can consist of up to 140 octets in total.

When a mobile terminated message is class 0 and the MS has the capability of displaying short messages, the MS shall display the message immediately and send an acknowledgement to the SC when the message has successfully reached the MS irrespective of whether there is memory available in the (U)SIM or ME. The message shall not be automatically stored in the (U)SIM or ME.

The ME may make provision through MMI for the user to selectively prevent the message from being displayed immediately.

If the ME is incapable of displaying short messages or if the immediate display of the message has been disabled through MMI then the ME shall treat the short message as though there was no message class, i.e. it will ignore bits 0 and 1 in the TP-DCS and normal rules for memory capacity exceeded shall apply.

When a mobile terminated message is Class 1, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored. The MS shall normally store the message in the ME by default, if that is possible, but otherwise the message may be stored elsewhere, e.g. in the (U)SIM. The user may be able to override the default meaning and select their own routing.

When a mobile terminated message is Class 2 ((U)SIM-specific), an MS shall ensure that the message has been transferred to the SMS data field in the (U)SIM before sending an acknowledgement to the SC. The MS shall return a "protocol error, unspecified" error message (see 3GPP TS 24.011 [6]) if the short message cannot be stored in the (U)SIM and there is other short message storage available at the MS. If all the short message storage at the MS is already in use, the MS shall return "memory capacity exceeded". This behaviour applies in all cases except for an MS supporting (U)SIM Application Toolkit when the Protocol Identifier (TP-PID) of the mobile terminated message is set to "(U)SIM Data download" (see 3GPP TS 23.040 [4]).

When a mobile terminated message is Class 3, the MS shall send an acknowledgement to the SC when the message has successfully reached the MS and can be stored, irrespectively of whether the MS supports an SMS interface to a TE, and without waiting for the message to be transferred to the TE. Thus the acknowledgement to the SC of a TE-specific message does not imply that the message has reached the TE. Class 3 messages shall normally be transferred to the TE when the TE requests "TE-specific" messages (see 3GPP TS 27.005 [8]). The user may be able to override the default meaning and select their own routing.

The message class codes may also be used for mobile originated messages, to provide an indication to the destination SME of how the message was handled at the MS.

The MS will not interpret reserved or unsupported values but shall store them as received. The SC may reject messages with a Data Coding Scheme containing a reserved value or one which is not supported.

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040338

CR-Form-v7

CHANGE REQUEST

⌘ **23.038** **CR** **014** ⌘ **rev** **-** ⌘ Current version: **6.0.0** ⌘

*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:	⌘	Enhanced Voice Mail Information – not applicable for CBS
Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	23/08/2004
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:	⌘	23.040 Rel-6 describes the feature of Enhanced Voice Mail Information. The use of the corresponding IE is not applicable for a User Data Header within CBS due to the nature of CBS.
Summary of change:	⌘	Add the IE to the list of not applicable IEs.
Consequences if not approved:	⌘	Error of spec remains. Incompatible implementations will arise.

Clauses affected:	⌘	5			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			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.

5 CBS Data Coding Scheme

The CBS Data Coding Scheme indicates the intended handling of the message at the MS, the character set/coding, and the language (when applicable). Any reserved codings shall be assumed to be the GSM 7 bit default alphabet (the same as codepoint 00001111) by a receiving entity. The octet is used according to a coding group which is indicated in bits 7..4. The octet is then coded as follows:

Coding Group Bits 7..4	Use of bits 3..0
0000	Language using the GSM 7 bit default alphabet Bits 3..0 indicate the language: 0000 German 0001 English 0010 Italian 0011 French 0100 Spanish 0101 Dutch 0110 Swedish 0111 Danish 1000 Portuguese 1001 Finnish 1010 Norwegian 1011 Greek 1100 Turkish 1101 Hungarian 1110 Polish 1111 Language unspecified
0001	0000 GSM 7 bit default alphabet; message preceded by language indication. The first 3 characters of the message are a two-character representation of the language encoded according to ISO 639 [12], followed by a CR character. The CR character is then followed by 90 characters of text. 0001 UCS2; message preceded by language indication The message starts with a two GSM 7-bit default alphabet character representation of the language encoded according to ISO 639 [12]. This is padded to the octet boundary with two bits set to 0 and then followed by 40 characters of UCS2-encoded message. An MS not supporting UCS2 coding will present the two character language identifier followed by improperly interpreted user data. 0010..1111 Reserved
0010..	0000 Czech 0001 Hebrew 0010 Arabic 0011 Russian 0100 Icelandic 0101..1111 Reserved for other languages using the GSM 7 bit default alphabet, with unspecified handling at the MS
0011	0000..1111 Reserved for other languages using the GSM 7 bit default alphabet, with unspecified handling at the MS

Coding Group Bits 7..4	Use of bits 3..0
01xx	General Data Coding indication Bits 5..0 indicate the following: Bit 5, if set to 0, indicates the text is uncompressed Bit 5, if set to 1, indicates the text is compressed using the compression algorithm defined in 3GPP TS 23.042 [13] Bit 4, if set to 0, indicates that bits 1 to 0 are reserved and have no message class meaning Bit 4, if set to 1, indicates that bits 1 to 0 have a message class meaning: Bit 1 Bit 0 Message Class: 0 0 Class 0 0 1 Class 1 Default meaning: ME-specific. 1 0 Class 2 (U)SIM specific message. 1 1 Class 3 Default meaning: TE-specific (see 3GPP TS 27.005 [8]) Bits 3 and 2 indicate the character set being used, as follows: Bit 3 Bit 2 Character set: 0 0 GSM 7 bit default alphabet 0 1 8 bit data 1 0 UCS2 (16 bit) [10] 1 1 Reserved
1000	Reserved coding groups
1001	Message with User Data Header (UDH) structure: Bit 1 Bit 0 Message Class: 0 0 Class 0 0 1 Class 1 Default meaning: ME-specific. 1 0 Class 2 (U)SIM specific message. 1 1 Class 3 Default meaning: TE-specific (see 3GPP TS 27.005 [8]) Bits 3 and 2 indicate the alphabet being used, as follows: Bit 3 Bit 2 Alphabet: 0 0 GSM 7 bit default alphabet 0 1 8 bit data 1 0 USC2 (16 bit) [10] 1 1 Reserved
1010..1101	Reserved coding groups
1110	Defined by the WAP Forum [15]
1111	Data coding / message handling Bit 3 is reserved, set to 0. Bit 2 Message coding: 0 GSM 7 bit default alphabet 1 8 bit data Bit 1 Bit 0 Message Class: 0 0 No message class. 0 1 Class 1 user defined. 1 0 Class 2 user defined. 1 1 Class 3 default meaning: TE specific (see 3GPP TS 27.005 [8])

These codings may also be used for USSD and MMI/display purposes.

See 3GPP TS 24.090 [11] for specific coding values applicable to USSD for MS originated USSD messages and MS terminated USSD messages. USSD messages using the default alphabet are coded with the GSM 7-bit default alphabet given in clause 6.2.1. The message can then consist of up to 182 user characters.

Cell Broadcast messages using the default alphabet are coded with the GSM 7-bit default alphabet given in clause 6.2.1. The message then consists of 93 user characters.

If the GSM 7 bit default alphabet extension mechanism is used then the number of displayable characters will reduce by one for every instance where the GSM 7 bit default alphabet extension table is usedCell Broadcast messages using 8-bit data have user-defined coding, and will be 82 octets in length.

UCS2 character set indicates that the message is coded in UCS2 [10]. The General notes specified in clause 6.1.1 override any contrary specification in UCS2, so for example even in UCS2 a <CR> character will cause the MS to return to the beginning of the current line and overwrite any existing text with the characters which follow the <CR>. Cell Broadcast messages encoded in UCS2 consist of 41 characters.

Class 1 and Class 2 messages may be routed by the ME to user-defined destinations, but the user may override any default meaning and select their own routing.

Class 3 messages will normally be selected for transfer to a TE, in cases where a ME supports an SMS/CBS interface to a TE, and the TE requests "TE-specific" cell broadcast messages (see 3GPP TS 27.005 [8]). The user may be able to override the default meaning and select their own routing.

Messages with a User Data Header Structure are encoded as described in 3GPP TS 23.040 [4] for SMS, in subclauses 3.10 and 9.2.3.24.

The use of Cell Broadcast DCS values for messages with a User Data Header structure implies that the 82-bytes CB payload has a User Data Header structure.

The CBS message information field will contain the IEs as described in 3GPP TS 23.040. The concatenation IEs will not be used, as CB concatenation will rely in that case on the existing CB mechanism. Note that IEs that cannot be split and that IEs that are too large to fit in one CB segment cannot be transmitted using this mechanism. Also, some IEs as defined for SMS are not applicable for CB:

VALUE (hex)	MEANING
00	Concatenated short messages, 8-bit reference number
01	Special SMS Message Indication
06	SMSC Control Parameters
08	Concatenated short message, 16-bit reference number
20	RFC 822 E-Mail Header
23	Enhanced Voice Mail Information
70-7F	(U)SIM Toolkit Security Headers
80-89	SME to SME specific use

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040334

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **074** ⌘ **rev** **-** ⌘ Current version: **4.8.0** ⌘

*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:	⌘	Special Message Indication – how to handle Multiple Subscriber Profiles
Source:	⌘	T2
Work item code:	⌘	TEI4
Date:	⌘	23/08/2004
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:	⌘	22.097 and 23.097 describe the Multiple Subscriber Profile (MSP). They explicitly state that it will not be possible to indicate the profile used for the SMS-MT case. 51.011 and 31.102 define an Elementary Field on SIM and USIM where to store the Message Waiting Indication Status (EF_{MWIS}). This EF may contain as many records as there are subscriber profiles. 23.040 defines a mechanism how to update the EF_{MWIS}. However there is no means to indicate the profile, neither via SMS in general nor within the Special Message Indication. Therefore an MS has no means to distinguish which record of the EF_{MWIS} records requires an update.
Summary of change:	⌘	Let MS always update the first record of EF_{MWIS}.
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	9.2.3.24.2

Other specs affected: ⌘	Y	N	
		N	Other core specifications
		N	Test specifications
		N	O&M Specifications

⌘

Other comments:	⌘	The opportunity has been taken to do minor editorial changes and add missing

	references.

How to create CRs using this form:

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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.

9.2.3.24.2 Special SMS Message Indication

There are three levels of "Message Waiting" indication provided within the present document. The first level is to set the Protocol Identifier to "Return Call message", which indicates that a message is waiting and relies on the text of the message to supply the detail. The second level uses the Data Coding Scheme with or without Return Call Message (see 3GPP TS 23.038 [9]) to indicate the type of message waiting and whether there are some messages or no messages. The third level is described here, and provides the maximum detail level for analysis by the mobile, i.e. an indication of the number and type of messages waiting in systems connected to the PLMN. This third level is provided for future flexibility, as it cannot immediately be used without compatibility problems with the earliest Phase mobiles. It is envisaged that this scheme can start to be used once mobiles supporting TP-UDH become widely available.

This information shall be stored by the ME in the Message Waiting Indication Status on the SIM (see 3GPP TS 51.011 [16]) or USIM (see 3GPP TS 31.102 [30]) when present or otherwise should be stored in the ME. In case there are multiple records of EF_{MWIS} this information should be stored within the first record.

The number of messages shall be stored in Message Waiting Indication Status and an indicator should be shown if the number of messages is non-zero or removed if the number of messages is zero. The ME may also provide some MMI to indicate and access the actual number of messages waiting. Text may be included by the SMS Service Centre for backward compatibility with the earliest Phase mobiles and the Data Coding Scheme may also be used to convey this information in parallel for backward compatibility with "middle" Phase mobiles (which support the use of Data Coding Scheme for Message Waiting Indication but not the use of TP-UDH for Message Waiting Indication).

The information-Element octets shall be coded as follows:

Octet 1 Message Indication type and Storage

Bit 7 Indicates whether or not the message shall be stored.

Bit 7

0 Discard message after updating indication

1 Store message after updating indication

In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the message shall be stored if either the DCS indicates this, or Octet 1 above indicates this.

Bits 6..0 show the message indication type

000 0000	Voice Message Waiting
000 0001	Fax Message Waiting
000 0010	Electronic Mail Message Waiting
000 0011	Other Message Waiting (see 3GPP TS 23.038 [9] for definition of "other")

Other values are reserved for future use.

Octet 2 Message Count

This octet shall contain a value in the range 0 to 255 indicating the number of messages of the type specified in Octet 1 waiting. The value 255 shall be taken to mean 255 or greater. In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the Message Count in the TP-UDH shall override the indication in the TP-DCS.

If more than one type of message is required to be indicated within one SMS message, then further octets must be used, as in the following example:

[00] TP-UDL [1E] (30 decimal septets)

[01] Length of TP-UDH [08]

[02] IEI = Special SMS Message Indication [01]

[03] Length = 02

[04] Octet 1 = Voice Mail, do not store [00]

[05] Octet 2 = 04 Messages

[06] IEI = Special SMS Message Indication [01]

[07] Length = 02

[08] Octet 1 = Fax Mail, Store [81]

[09] Octet 2 = 02 Messages

+ 5 Fill bits

+ 19 seven-bit character message text

The Total number of bits is 210.

In the case where this IEI is to be used in a concatenated SM then the IEI, its associated IEI length and IEI data shall be contained in the first segment of the concatenated SM. The IEI, its associated IEI length and IEI data should also be contained in every subsequent segment of the concatenated SM although this is not mandatory. However, in the case where these elements are not contained in every subsequent segment of the concatenated SM and where an out of sequence segment delivery occurs or where the first segment is not delivered then processing difficulties may arise at the receiving entity which may result in the concatenated SM being totally or partially discarded.

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040335

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **075** ⌘ **rev** **-** ⌘ Current version: **5.7.1** ⌘

*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:	⌘	Special Message Indication – how to handle Multiple Subscriber Profiles
Source:	⌘	T2
Work item code:	⌘	TEI5
Date:	⌘	23/08/2004
Category:	⌘	**A**
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:	⌘	22.097 and 23.097 describe the Multiple Subscriber Profile (MSP). They explicitly state that it will not be possible to indicate the profile used for the SMS-MT case. 51.011 and 31.102 define an Elementary Field on SIM and USIM where to store the Message Waiting Indication Status (EF_{MWIS}). This EF may contain as many records as there are subscriber profiles. 23.040 defines a mechanism how to update the EF_{MWIS}. However there is no means to indicate the profile, neither via SMS in general nor within the Special Message Indication. Therefore an MS has no means to distinguish which record of the EF_{MWIS} records requires an update.
Summary of change:	⌘	Let MS always update the first record of EF_{MWIS}.
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	9.2.3.24.2

Other specs affected: ⌘	Y	N	
		N	Other core specifications
		N	Test specifications
		N	O&M Specifications

⌘

Other comments: ⌘ The opportunity has been taken to do minor editorial changes and add missing

	references.

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.

9.2.3.24.2 Special SMS Message Indication

There are three levels of "Message Waiting" indication provided within the present document. The first level is to set the Protocol Identifier to "Return Call message", which indicates that a message is waiting and relies on the text of the message to supply the detail. The second level uses the Data Coding Scheme with or without Return Call Message (see 3GPP TS 23.038 [9]) to indicate the type of message waiting and whether there are some messages or no messages. The third level is described here, and provides the maximum detail level for analysis by the mobile, i.e. an indication of the number and type of messages waiting in systems connected to the PLMN. This third level is provided for future flexibility, as it cannot immediately be used without compatibility problems with the earliest Phase mobiles. It is envisaged that this scheme can start to be used once mobiles supporting TP-UDH become widely available.

This information shall be stored by the ME in the Message Waiting Indication Status on the SIM (see 3GPP TS 51.011 [16]) or USIM (see 3GPP TS 31.102 [30]) when present or otherwise should be stored in the ME. In case there are multiple records of EF_{MWIS} this information should be stored within the first record.

The number of messages shall be stored in Message Waiting Indication Status and an indicator should be shown if the number of messages is non-zero or removed if the number of messages is zero. The ME may also provide some MMI to indicate and access the actual number of messages waiting. Text may be included by the SMS Service Centre for backward compatibility with the earliest Phase mobiles and the Data Coding Scheme may also be used to convey this information in parallel for backward compatibility with "middle" Phase mobiles (which support the use of Data Coding Scheme for Message Waiting Indication but not the use of TP-UDH for Message Waiting Indication).

The information-Element octets shall be coded as follows:

Octet 1 Message Indication type and Storage.

Bit 7 Indicates whether or not the message shall be stored.

Bit 7

0 Discard message after updating indication

1 Store message after updating indication

In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the message shall be stored if either the DCS indicates this, or Octet 1 above indicates this.

Bits 6..0 show the message indication type

000 0000	Voice Message Waiting
000 0001	Fax Message Waiting
000 0010	Electronic Mail Message Waiting
000 0011	Other Message Waiting (see 3GPP TS 23.038 [9] for definition of "other")

Other values are reserved for future use.

Octet 2 Message Count.

This octet shall contain a value in the range 0 to 255 indicating the number of messages of the type specified in Octet 1 waiting. The value 255 shall be taken to mean 255 or greater. In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the Message Count in the TP-UDH shall override the indication in the TP-DCS.

If more than one type of message is required to be indicated within one SMS message, then further octets must be used, as in the following example:

[00] TP-UDL [1E] (30 decimal septets)

[01] Length of TP-UDH [08]

[02] IEI = Special SMS Message Indication [01]

[03] Length = 02

[04] Octet 1 = Voice Mail, do not store [00]

[05] Octet 2 = 04 Messages

[06] IEI = Special SMS Message Indication [01]

[07] Length = 02

[08] Octet 1 = Fax Mail, Store [81]

[09] Octet 2 = 02 Messages

+ 5 Fill bits

+ 19 seven-bit character message text

The Total number of bits is 210.

In the case where this IEI is to be used in a concatenated SM then the IEI, its associated IEI length and IEI data shall be contained in the first segment of the concatenated SM. The IEI, its associated IEI length and IEI data should also be contained in every subsequent segment of the concatenated SM although this is not mandatory. However, in the case where these elements are not contained in every subsequent segment of the concatenated SM and where an out of sequence segment delivery occurs or where the first segment is not delivered then processing difficulties may arise at the receiving entity which may result in the concatenated SM being totally or partially discarded.

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040336

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **076** ⌘ **rev** **-** ⌘ Current version: **6.4.0** ⌘

*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:	⌘	Special Message Indication – introduction of Multiple Subscriber Profiles
Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	23/08/2004
Category:	⌘	**B**
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:	⌘	22.097 and 23.097 describe the Multiple Subscriber Profile (MSP). They explicitly state that it will not be possible to indicate the profile used for the SMS-MT case. 51.011 and 31.102 define an Elementary Field on SIM and USIM where to store the Message Waiting Indication Status (EF_{MWIS}). This EF may contain as many records as there are subscriber profiles. 23.040 defines a mechanism how to update the EF_{MWIS}. However there is no means to indicate the profile, neither via SMS in general nor within the Special Message Indication. Therefore an MS has no means to distinguish which record of the EF_{MWIS} records requires an update.
Summary of change:	⌘	Assignment of yet reserved bits for MSP indication
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	2, 9.2.3.24.2, 9.2.3.24.13
Other specs affected:	⌘	Y / N ☐ / **N** Other core specifications ☐ / **N** Test specifications ☐ / **N** O&M Specifications
	⌘	
Other comments:	⌘	The opportunity has been taken to do minor editorial changes and add missing

	references and add a missing definition for a parameter.

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.

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 01.04: "Abbreviations and acronyms".

[2] 3GPP TS 02.03: "Teleservices supported by a GSM Public Land Mobile Network (PLMN)".

[3] 3GPP TS 22.004: "General on supplementary services".

[4] 3GPP TS 22.041: "Operator Determined Barring (ODB)".

[5] 3GPP TS 23.002: "Network architecture".

[6] 3GPP TS 23.008: "Organization of subscriber data".

[7] 3GPP TS 23.011: "Technical realization of supplementary services".

[8] 3GPP TS 23.015: "Technical realization of Operator Determined Barring (ODB)".

[9] 3GPP TS 23.038: "Alphabets and language-specific information".

[10] 3GPP TS 23.041: "Technical realization of Cell Broadcast Service (CBS)".

[11] 3GPP TS 43.047: "Example protocol stacks for interconnecting Service Centre(s) (SC) and Mobile-services Switching Centre(s) (MSC)".

[12] 3GPP TS 44.008: "Mobile radio interface layer 3 specification".

[13] 3GPP TS 24.011: "Point-to-Point (PP) Short Message Service (SMS) support on mobile radio interface".

[14] 3GPP TS 27.005: "Use of Data Terminal Equipment - Data Circuit terminating Equipment (DTE - DCE) interface for Short Message Service (SMS) and Cell Broadcast Service (CBS)".

[15] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".

[16] 3GPP TS 51.011: "Specification of the Subscriber Identity Module - Mobile Equipment (SIM-ME) interface".

[17] CCITT Recommendation E.164 (Blue Book): "The international public telecommunication numbering plan".

[18] CCITT Recommendation E.163 (Blue Book): "Numbering plan for the international telephone service".

[19] CCITT Recommendation Q.771: "Specifications of Signalling System No.7; Functional description of transaction capabilities".

[20] CCITT Recommendation T.100 (Blue Book): "International information exchange for interactive videotex".

[21] CCITT Recommendation T.101 (Blue Book): "International interworking for videotex services".

[22] CCITT Recommendation X.121 (Blue Book): "International numbering plan for public data networks".

[23] CCITT Recommendation X.400 (Blue Book): "Message handling services: Message handling system and service overview".

[24] ISO/IEC10646: "Universal Multiple-Octet Coded Character Set (USC); UCS2, 16 bit coding".

[25] 3GPP TS 22.022: "Personalisation of Mobile Equipment (ME); Mobile functionality specification".

[26] 3GPP TS 23.042: "Compression Algorithm for Text Messaging Services".

[27] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".

[28] 3GPP TS 43.048: "Security Mechanisms for the SIM application toolkit; Stage 2".

[29] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[30] 3GPP TS 31.102: "Characteristics of the USIM application".

[31] 3GPP TS 31.101: "UICC – Terminal interface; Physical and logical characteristics".

[32] 3GPP TS 22.105: "Services and Service Capabilites".

[33] Infrared Data Association. Specifications for Ir Mobile Communications (IrMC). iMelody.

[34] IETF RFC 822: "Standard for the format of ARPA Internet text messages".

[35] void

[36] "vCard - The Electronic Business Card", version 2.1,The Internet Mail Consortium (IMC), September 18, 1996, URL:http://www.imc.org/pdi/vcard-21.doc".

[37] "vCalendar - the Electronic Calendaring and Scheduling Format", version 1.0, The Internet Mail Consortium (IMC), September 18, 1996, URL:http://www.imc.org/pdi/vcal-10.doc

[38] Scalable Polyphony MIDI Specification, MIDI Manufacturers Association (2002); http://www.midi.org

[39] Scalable Polyphony MIDI Device 5-to-24 Note Profile for 3GPP, MIDI Manufacturers Association (2002); http://www.midi.org

[40] The Complete MIDI 1.0 Detailed Specification, Incorporating all Recommended Practices, MIDI Manufacturers Association, Document version 96.1, 1996; http://www.midi.org

[41] 3GPP TS 23.097: Multiple Subscriber Profile (MSP) (Phase 2) - Stage 2

9.2.3.24.2 Special SMS Message Indication

There are three levels of "Message Waiting" indication provided within the present document. The first level is to set the Protocol Identifier to "Return Call message", which indicates that a message is waiting and relies on the text of the message to supply the detail. The second level uses the Data Coding Scheme with or without Return Call Message (see 3GPP TS 23.038 [9]) to indicate the type of message waiting and whether there are some messages or no messages. The third level is described here, and provides the maximum detail level for analysis by the mobile, i.e. an indication of the number and type of messages waiting in systems connected to the PLMN.

This information shall be stored by the ME in the Message Waiting Indication Status on the SIM (see 3GPP TS 51.011 [16]) or USIM (see 3GPP TS 31.102 [30]) when present or otherwise should be stored in the ME. In case there are multiple records of EF_{MWIS} this information shall be stored within the record according to the profile if available – or otherwise within the first record.

The number of messages shall be stored in Message Waiting Indication Status and an indicator should be shown if the number of messages is non-zero or removed if the number of messages is zero. The ME may also provide some MMI to indicate and access the actual number of messages waiting. Text may be included by the SMS Service Centre for backward compatibility with the earliest Phase mobiles and the Data Coding Scheme may also be used to convey this information in parallel for backward compatibility with "middle" Phase mobiles (which support the use of Data Coding Scheme for Message Waiting Indication but not the use of TP-UDH for Message Waiting Indication).

The information-Element octets shall be coded as follows:

Octet 1 Message Indication type and Storage.

Bit 7 Indicates whether or not the message shall be stored.

Bit 7

0 Discard message after updating indication

1 Store message after updating indication

In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the message shall be stored if either the DCS indicates this, or Octet 1 above indicates this.

Bits 0 and 1 indicate the basic message indication type.

00	Voice Message Waiting
01	Fax Message Waiting
10	Electronic Mail Message Waiting
11	Extended Message Type Waiting (equivalent to "other" in 3GPP TS 23.038 [9])

Bits ~~65~~432 indicate the extended message indication type.

~~00~~000	No extended message indication type.
~~00~~001	Video Message Waiting

Other values of bits ~~65~~432 where bits 0 and 1 are ’11’ are Reserved for future use in the present document.

Values of bits ~~65~~432 where bits 0 and 1 are ‘00’, ‘01’ or ‘10’ are Reserved for future use in the present document.

NOTE: Values using bits ~~65~~432 where bits 0 and 1 are '11' should be exhausted before using the remaining codespace due to existing early implementations erroneously using parts of this codespace.

Bits 6 and 5 indicate the profile ID of the Multiple Subscriber Profile (see 3GPP TS 23.097 [41]).

00	profile ID 1
01	profile ID 2
10	profile ID 3
11	profile ID 4

Terminals should be capable of receiving any values in octet 1, including those marked as Reserved. Terminals may add the Message Count of all unknown Message Waiting Indication types received within the same TP-UDH and indicate this result to the user.

Octet 2 Message Count.

This octet shall contain a value in the range 0 to 255 indicating the number of messages of the type specified in Octet 1 waiting. The value 255 shall be taken to mean 255 or greater. In the event of a conflict between this setting and the setting of the Data Coding Scheme (see 3GPP TS 23.038 [9]) then the Message Count in the TP-UDH shall override the indication in the TP-DCS.

If more than one type of message is required to be indicated within one SMS message, then further octets must be used, as in the following example:

[00] TP-UDL [1E] (30 decimal septets)

[01] Length of TP-UDH [08]

[02] IEI = Special SMS Message Indication [01]

[03] Length = 02

[04] Octet 1 = Voice Mail, do not store [00]

[05] Octet 2 = 04 Messages

[06] IEI = Special SMS Message Indication [01]

[07] Length = 02

[08] Octet 1 = Fax Mail, Store [81]

[09] Octet 2 = 02 Messages

+ 5 Fill bits

+ 19 seven-bit character message text

The Total number of bits is 210.

In the case where this IEI is to be used in a concatenated SM then the IEI, its associated IEI length and IEI data shall be contained in the first segment of the concatenated SM. The IEI, its associated IEI length and IEI data should also be contained in every subsequent segment of the concatenated SM although this is not mandatory. However, in the case where these elements are not contained in every subsequent segment of the concatenated SM and where an out of sequence segment delivery occurs or where the first segment is not delivered then processing difficulties may arise at the receiving entity which may result in the concatenated SM being totally or partially discarded.

9.2.3.24.13 Enhanced Voice Mail Information

Enhanced Voice Mail Information allows a Voice Mail system to convey to a mobile subscriber, comprehensive information regarding individual voice mail messages and mailbox status.

Enhanced Voice Mail Information has two types of Information Element Data

- Enhanced Voice Mail Notification which conveys to the MS information regarding newly deposited Voice Mail messages and Voice Mailbox Status
- Enhanced Voice Mail Delete Confirmation which allows an MS to maintain Voice mailbox status information synchronisation between the MS and the Voice Mailbox in the event of Voice Mail Message deletion.

The first 'bit' of the Enhanced Voice Mail Information Element Data is known as Enhanced Voice Mail PDU Type and discriminates between whether the Enhanced Voice Mail Information PDU is an Enhanced Voice Mail Notification or an Enhanced Voice Mail Delete Confirmation.

9.2.3.24.13.1 Enhanced Voice Mail Notification

The Enhanced Voice Mail Notification Information Element Data has the following format where the parameters are in strict order following the IEDL. The Enhanced Voice Mail Notification IEI and its associated IEDL and IED shall be complete within a single UDH.

In the event of a contradiction between Enhanced Voice Mail Notification and either the DCS (23.038) [9] indicating Voicemail Message Waiting or the Special SMS Message Indication (9.2.3.24.2) indicating Voice Message Waiting or both then the Enhanced Voice Mail Notification specified here shall take precedence.

Parameter	Parameter Length	Mandatory/Optional/ Conditional
ENHANCED_VOICE_MAIL_PDU_TYPE	Bit 0 Octet 1	M
RESERVED_FOR_FUTURE_USE	Bit~~s 2..3~~1 Octet 1	M
MULTIPLE_SUBSCRIBER_PROFILE	Bits 2..3 Octet 1	M
SM_STORAGE	Bit 4 Octet 1	M
VM_MAILBOX_ALMOST_FULL	Bit 5 Octet 1	M
VM_MAILBOX_FULL	Bit 6 Octet 1	M
VM_MAILBOX_STATUS_EXTENSION_INDICATOR	Bit 7 Octet 1	M
VM_MAILBOX_ACCESS_ADDRESS	Octets 2… n+2 (NOTE 2)	M
NUMBER_OF_VOICE_MESSAGES	Bits 0..7 Octet n+3	M
NUMBER_OF_VM_NOTIFICATIONS	Bits 0..4 Octet n+4	M
RESERVED_FOR_FUTURE_USE	Bits 5..7 Octet n+4	M
VM_MAILBOX_STATUS_EXTENSION_LENGTH	1 Octet (NOTE 3)	C
VM_MAILBOX_STATUS_EXTENSION_DATA	1 or more Octets (NOTE 3)	C
VM_MESSAGE_ID (NOTE 1)	Bits 0..15 Octets n+5..n+6	M
VM_ MESSAGE_LENGTH (NOTE 1)	Bits 0..7 Octet n+7	M
VM_ MESSAGE_RETENTION_DAYS (NOTE 1)	Bits 0..4 Octet n+8	M
RESERVED_FOR_FUTURE_USE (NOTE 1)	Bit 5 Octet n+8	M
VM_MESSAGE_PRIORITY_INDICATION (NOTE 1)	Bit 6 Octet n+8	M
OCTET_VM_MESSAGE_EXTENSION_INDICATOR (NOTE 1)	Bit 7 Ocet n+8	M
VM_MESSAGE_CALLING_LINE_IDENTITY (NOTE 1)	Octets n+9.. n+9+m (NOTE 2)	M
VM_MESSAGE_EXTENSION_LENGTH (NOTE 1)	1 Octet (NOTE 3)	C
VM_MESSAGE_EXTENSION_DATA (NOTE 1)	1 or more Octets (NOTE 3)	C
NOTE 1: This sequence of parameters are repeated a number of times according to the number of Voice Mail notifications conveyed in this IE. NOTE 2: 'n' and 'm' denote the number of octets required for the VM_MAILBOX_ACCESS_ADDRESS and the VM_CALLING_LINE_IDENTITY as appropriate including the Address-Length, Type-of-address and Address-value (see 9.1.2.5). NOTE 3: The Conditional Octets are excluded from the Octet count in the table in this release because no extensions are defined in this release.		

ENHANCED_VOICE_MAIL_PDU_TYPE This parameter shall be set to 0 to specify that the following Information Element Data Parameters is an Enhanced Voice Mail Notification.

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use.

MULTIPLE_SUBSCRIBER_PROFILE This parameter shall indicate the Multiple Subscriber Profile (see 3GPP TS 23.097 [41]):

00 profile ID 1

10 profile ID 2

01 profile ID 3

11 profile ID 4

SM_STORAGE This parameter shall be set to 0 to indicate that this SM shall be discarded after evaluating its contents; otherwise it shall be set to a 1 to indicate to the MS that this SM shall be stored in the ME or the USIM.

VM_MAILBOX_ALMOST_FULL This parameter shall be set to 1 if the Voice Mailbox in the Voice Mail system is almost full; otherwise this field shall be set to 0. The point at which the voice mailbox is considered almost full is Voice Mail System specific.

VM_MAILBOX_FULL This parameter shall be set to 1 if the Voice Mailbox in the Voice Mail system is full; otherwise this field shall be set to 0.

VM_MAILBOX_STATUS_EXTENSION_INDICATOR In this release, this parameter shall be set to 0. This parameter shall be set to 1 to indicate that a VM_MAILBOX_STATUS_EXTENSION_LENGTH parameter is present in this PDU.

NUMBER_OF_VOICE_MESSAGES This octet shall contain a value in the range 0 to 255 indicating the current number of Voice Mail messages that are unread. The value 255 shall be taken to mean 255 or greater. The NUMBER_OF_VOICE_MESSAGES shall be stored on the (U)SIM in accordance with the procedure for storage of Message Waiting Indication Status described in Special SMS Message Indication (9.2.3.24.2).

NUMBER_OF_VM_NOTIFICATIONS This parameter has a range 0 to 15. This parameter shall indicate the number of specific Voice Message notifications to follow within this IE.

RESERVED_FOR_FUTURE_USE This parameter shall be set to 0 and is reserved for future use.

VM_MAILBOX_STATUS_EXTENSION_LENGTH This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MAILBOX_STATUS_EXTENSION_INDICATOR in this PDU.

VM_MAILBOX_STATUS_EXTENSION_DATA This parameter comprises a number of additional octets allowing additional VM mailbox generic status parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be

	defined later by 3GPP. This parameter is conditional on the presence of VM_MAILBOX_EXTENSION_LENGTH
VM_MESSAGE_ID	This parameter shall be set to the message ID of the Voice Mail message in this specific Voice Message notification. This parameter is binary and has a range 0 to 65535, modulus 65536. It is the responsibility of the Voice Mail system to set this parameter to uniquely identify a Voice Mail message within the modulus.
VM_ MESSAGE_LENGTH	This parameter shall be set to the length of the Voice Mail message in this notification in seconds. This parameter has a range 0 to 255. For voice mail messages that are longer than 255 seconds, this parameter shall be set to its maximum 255.
VM_ MESSAGE_RETENTION_DAYS	This parameter shall be set to the number of days after which the specific Voice Mail message in this notification is anticipated to be automatically deleted from the Voice Mail system timed from the GSM Timestamp (TP-SCTS 9.2.3.11) for this Enhanced Voice Mail Notification. This parameter has a range 0 to 31. For Voice Mail messages that have a longer retention time than 31 days, this parameter shall be set to its maximum 31.

NOTE: The GSM Timestamp is the time that the SC received the SM from the Voice Mail system which is not necessarily the time that the voice message was deposited into the Voice Mail system.

RESERVED_FOR_FUTURE_USE	This parameter is set to 0 and is reserved for future use.
VM_ MESSAGE_PRIORITY_INDICATION	This parameter shall be set to 1 to indicate that the specific Voice Mail message in this notification held in the Voice Mailbox is urgent; otherwise the parameter shall be set to 0.
VM_MESSAGE_EXTENSION_INDICATOR	In this release, this parameter shall be set to 0. This parameter shall be set to a 1 to indicate that a VM_MESSAGE_EXTENSION_LENGTH parameter is present in this PDU.
VM_MESSAGE_CALLING_LINE_IDENTITY	This parameter shall contain the address to be used by the mobile subscriber to contact the originator of the specific Voice Mail message in this notification. Where the CLI is not available then the coding of this parameter shall indicate that there is no address. i.e The length indicator in this parameter shall be set to 0. This parameter coding shall comply with the the SM-TL address format specified in 9.1.2.5 above.
VM_MESSAGE_EXTENSION_LENGTH	This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MESSAGE_EXTENSION_INDICATOR in this PDU.
VM_MESSAGE_EXTENSION_DATA	This parameter comprises a number of additional octets allowing additional voicemail message specific parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MESSAGE_EXTENSION_LENGTH.

9.2.3.24.13.2 Enhanced Voice Mail Delete Confirmation

The Enhanced Voice Mail Delete Confirmation Information Element Data contains synchronization information. A Voice Mail system may send an Enhanced Voice Mail Delete Confirmation in order to indicate to the ME that certain voice mail messages that have been deleted and to indicate the updated status of the Voice Mailbox.

The Enhanced Voice Mail Delete Confirmation Information Element Data has the following format where the parameters are in strict order following the IEDL. The Enhanced Voice Mail Delete Confirmation IEI and its associated IEDL and IED shall be complete within a single UDH.

Parameter	Parameter Length	Mandatory/Conditional /Optional
ENHANCED_VOICE_MAIL_PDU_TYPE	Bit 0 Octet 1	M
RESERVED_FOR_FUTURE_USE	Bits 1..3 Octet 1	M
MULTIPLE_SUBSCRIBER_PROFILE	Bits 3..2 Octet 1	M
SM_STORAGE	Bit 4 Octet 1	M
VM_MAILBOX_ALMOST_FULL	Bit 5 Octet 1	M
VM_MAILBOX_FULL	Bit 6 Octet 1	M
VM_MAILBOX_STATUS_EXTENSION_INDICATOR	Bit 7 Octet 1	M
VM_MAILBOX_ACCESS_ADDRESS	Octets 2..n+2 (NOTE 2)	M
NUMBER_OF_VOICE_MESSAGES	Bits 0..7 Octet n+3	M
NUMBER_OF_VM_DELETES	Bits 0..4 Octet n+4	M
RESERVED_FOR_FUTURE_USE	Bits 5..7 Octet n+4	M
VM_MAILBOX_STATUS_EXTENSION_LENGTH	1 Octet (NOTE 3)	C
VM_MAILBOX_STATUS_EXTENSION_DATA	1 or more Octets (NOTE 3)	C
VM_MESSAGE_ID (NOTE 1)	Octets n+5..n+6	M
RESERVED_FOR_FUTURE_USE (NOTE 1)	Bits 0..6 Octet n+7	M
VM_MESSAGE_EXTENSION_INDICATOR (NOTE 1)	Bit 7 Octet n+7	M
VM_MESSAGE_EXTENSION_LENGTH (NOTE 1)	1 Octet (NOTE 3)	C
VM_MESSAGE_EXTENSION_DATA (NOTE 1)	1 or more Octets (NOTE 3)	C
NOTE 1: This sequence of parameters are repeated a number of times according to the number of Voice Mail Delete Confirmations conveyed in this IE. NOTE 2: 'n' denotes the number of octets required for the VM_MAILBOX_ACCESS_ADDRESS including the Address-Length, Type-of-address and Address-value (see 9.1.2.5). NOTE 3: The Conditional Octets are excluded from the Octet count in the table in this release because no extensions are defined in this release.		

ENHANCED_VOICE_MAIL_PDU_TYPE This parameter shall be set to 1 to specify that the following Information Element Data is an Enhanced Voice Mail Delete Confirmation.

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use.

MULTIPLE_SUBSCRIBER_PROFILE See clause 9.2.3.24.13.1

SM_STORAGE See clause 9.2.3.24.13.1

VM_MAILBOX_ALMOST_FULL See clause 9.2.3.24.13.1

VM_MAILBOX_FULL See clause 9.2.3.24.13.1

VM_MAILBOX_STATUS_EXTENSION_INDICATOR In this release, this parameter shall be set to 0. This parameter shall be set to 1 to indicate that a VM_MAILBOX_STATUS_EXTENSION_LENGTH parameter is present in this PDU.

VM_MAILBOX_ACCESS_ADDRESS See clause 9.2.3.24.13.1

NUMBER_OF_VOICE_MESSAGES See clause 9.2.3.24.13.1

NUMBER_OF_VM_DELETES This parameter has a range 0 to 63. This parameter shall indicate the number of VM_MESSAGE_ID's that follow in this IE

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use.

VM_MAILBOX_STATUS_EXTENSION_LENGTH This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MAILBOX_STATUS_EXTENSION_INDICATOR in this PDU.

VM_MAILBOX_STATUS_EXTENSION_DATA This parameter comprises a number of additional octets allowing additional VM mailbox generic status parameters to be conveyed in the PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MAILBOX_EXTENSION_LENGTH

VM_MESSAGE_ID This parameter shall be set to the message ID of the specific voice mail message(s) whose deletion is being confirmed. The range of this parameter is defined in clause 9.2.3.24.13.1 and for a specific voice mail message the value of this parameter shall be identical to that used for the VM Notification. This parameter is repeated according to the number of voice mail message deletions being confirmed.

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use. This parameter is repeated according to the number of voice mail message deletions being confirmed.

VM_MESSAGE_EXTENSION_INDICATOR In this release, this parameter shall be set to 0.This parameter shall be set to a 1 to indicate that a VM_MESSAGE_EXTENSION_LENGTH parameter is present in this PDU.

VM_MESSAGE_EXTENSION_LENGTH This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MESSAGE_EXTENSION_INDICATOR in this PDU

VM_MESSAGE_EXTENSION_DATA This parameter comprises a number of additional octets allowing additional voicemail message specific parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MESSAGE_EXTENSION_LENGTH

3GPP TSG-T2 #26
Montreal, Canada
23-27 August 2004

T2-040337

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **077** ⌘ **rev** **-** ⌘ Current version: **6.4.0** ⌘

*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:	⌘	Enhanced Voice Mail Information – access number priority
Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	23/08/2004
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:	⌘	23.040 Rel-6 describes the feature of Enhanced Voice Mail Information which contains an access number to the Voice Mail system. The (U)SIM may contain an Elementary Field for Mailbox Dialling Numbers (EF_{MBDN}). Both information may contradict.
Summary of change:	⌘	Give priority to the number within the Enhanced Voice Mail Information.
Consequences if not approved:	⌘	Indeterminacy remains. Incompatible implementations will arise.

Clauses affected:	⌘	9.2.3.24.13

		Y	N		
Other specs affected:	⌘		N	Other core specifications	⌘
			N	Test specifications	
			N	O&M Specifications	

Other comments:	⌘	The opportunity has been taken to do minor editorial changes and add missing references, correct spelling mistakes and add a missing definition for a parameter.

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.

9.2.3.24.13 Enhanced Voice Mail Information

Enhanced Voice Mail Information allows a Voice Mail system to convey to a mobile subscriber, comprehensive information regarding individual voice mail messages and mailbox status.

Enhanced Voice Mail Information has two types of Information Element Data

- Enhanced Voice Mail Notification which conveys to the MS information regarding newly deposited Voice Mail messages and Voice Mailbox Status
- Enhanced Voice Mail Delete Confirmation which allows an MS to maintain Voice mailbox status information synchronisation between the MS and the Voice Mailbox in the event of Voice Mail Message deletion.

The first 'bit' of the Enhanced Voice Mail Information Element Data is known as Enhanced Voice Mail PDU Type and discriminates between whether the Enhanced Voice Mail Information PDU is an Enhanced Voice Mail Notification or an Enhanced Voice Mail Delete Confirmation.

9.2.3.24.13.1 Enhanced Voice Mail Notification

The Enhanced Voice Mail Notification Information Element Data has the following format where the parameters are in strict order following the IEDL. The Enhanced Voice Mail Notification IEI and its associated IEDL and IED shall be complete within a single UDH.

In the event of a contradiction between Enhanced Voice Mail Notification and either the DCS (23.038) [9] indicating Voicemail Message Waiting or the Special SMS Message Indication (9.2.3.24.2) indicating Voice Message Waiting or both then the Enhanced Voice Mail Notification specified here shall take precedence.

Parameter	Parameter Length	Mandatory/Optional/ Conditional
ENHANCED_VOICE_MAIL_PDU_TYPE	Bit 0 Octet 1	M
RESERVED_FOR_FUTURE_USE	Bits 2..3 Octet 1	M
SM_STORAGE	Bit 4 Octet 1	M
VM_MAILBOX_ALMOST_FULL	Bit 5 Octet 1	M
VM_MAILBOX_FULL	Bit 6 Octet 1	M
VM_MAILBOX_STATUS_EXTENSION_INDICATOR	Bit 7 Octet 1	M
VM_MAILBOX_ACCESS_ADDRESS	Octets 2… n+2 (NOTE 2)	M
NUMBER_OF_VOICE_MESSAGES	Bits 0..7 Octet n+3	M
NUMBER_OF_VM_NOTIFICATIONS	Bits 0..4 Octet n+4	M
RESERVED_FOR_FUTURE_USE	Bits 5..7 Octet n+4	M
VM_MAILBOX_STATUS_EXTENSION_LENGTH	1 Octet (NOTE 3)	C
VM_MAILBOX_STATUS_EXTENSION_DATA	1 or more Octets (NOTE 3)	C
VM_MESSAGE_ID (NOTE 1)	Bits 0..15 Octets n+5..n+6	M
VM_ MESSAGE_LENGTH (NOTE 1)	Bits 0..7 Octet n+7	M
VM_ MESSAGE_RETENTION_DAYS (NOTE 1)	Bits 0..4 Octet n+8	M
RESERVED_FOR_FUTURE_USE (NOTE 1)	Bit 5 Octet n+8	M
VM_MESSAGE_PRIORITY_INDICATION (NOTE 1)	Bit 6 Octet n+8	M
OCTET_VM_MESSAGE_EXTENSION_INDICATOR (NOTE 1)	Bit 7 Ocet n+8	M
VM_MESSAGE_CALLING_LINE_IDENTITY (NOTE 1)	Octets n+9.. n+9+m (NOTE 2)	M
VM_MESSAGE_EXTENSION_LENGTH (NOTE 1)	1 Octet (NOTE 3)	C
VM_MESSAGE_EXTENSION_DATA (NOTE 1)	1 or more Octets (NOTE 3)	C

NOTE 1: This sequence of parameters are repeated a number of times according to the number of Voice Mail notifications conveyed in this IE.
NOTE 2: 'n' and 'm' denote the number of octets required for the VM_MAILBOX_ACCESS_ADDRESS and the VM_CALLING_LINE_IDENTITY as appropriate including the Address-Length, Type-of-address and Address-value (see 9.1.2.5).
NOTE 3: The Conditional Octets are excluded from the Octet count in the table in this release because no extensions are defined in this release.

ENHANCED_VOICE_MAIL_PDU_TYPE This parameter shall be set to 0 to specify that the following Information Element Data Parameters is an Enhanced Voice Mail Notification.

RESERVED_FOR_FUTURE_USE — This parameter is set to 0 and is reserved for future use.

SM_STORAGE — This parameter shall be set to 0 to indicate that this SM shall be discarded after evaluating its contents; otherwise it shall be set to a 1 to indicate to the MS that this SM shall be stored in the ME or the USIM.

VM_MAILBOX_ALMOST_FULL — This parameter shall be set to 1 if the Voice Mailbox in the Voice Mail system is almost full; otherwise this field shall be set to 0. The point at which the voice mailbox is considered almost full is Voice Mail System specific.

VM_MAILBOX_FULL — This parameter shall be set to 1 if the Voice Mailbox in the Voice Mail system is full; otherwise this field shall be set to 0.

VM_MAILBOX_STATUS_EXTENSION_INDICATOR — In this release, this parameter shall be set to 0. This parameter shall be set to 1 to indicate that a VM_MAILBOX_STATUS_EXTENSION_LENGTH parameter is present in this PDU.

VM_MAILBOX_ACCESS_ADDRESS — This parameter shall contain the Voice Mailbox number. It shall be coded according to section 9.1.2.5. In case of contradiction between this parameter and the Mailbox Dialing Numbers stored on (U)SIM this parameter shall take precedence and the MS may try to update EF_{MBDN} on (U)SIM.

NUMBER_OF_VOICE_MESSAGES — This octet shall contain a value in the range 0 to 255 indicating the current number of Voice Mail messages that are unread. The value 255 shall be taken to mean 255 or greater. The NUMBER_OF_VOICE_MESSAGES shall be stored on the USIM in accordance with the procedure for storage of Message Waiting Indication Status described in Special SMS Message Indication (9.2.3.24.2).

NUMBER_OF_VM_NOTIFICATIONS — This parameter has a range 0 to 15. This parameter shall indicate the number of specific Voice Message notifications to follow within this IE.

RESERVED_FOR_FUTURE_USE — This parameter shall be set to 0 and is reserved for future use.

VM_MAILBOX_STATUS_EXTENSION_LENGTH — This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MAILBOX_STATUS_EXTENSION_INDICATOR in this PDU.

VM_MAILBOX_STATUS_EXTENSION_DATA — This parameter comprises a number of additional octets allowing additional VM mailbox generic status parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MAILBOX_EXTENSION_LENGTH

VM_MESSAGE_ID — This parameter shall be set to the message ID of the Voice Mail message in this specific Voice Message notification. This parameter is binary and has a range 0 to 65535, modulus 65536. It is the responsibility of the Voice Mail system to set this parameter to uniquely identify a Voice Mail message within the modulus.

VM_ MESSAGE_LENGTH	This parameter shall be set to the length of the Voice Mail message in this notification in seconds. This parameter has a range 0 to 255. For voice mail messages that are longer than 255 seconds, this parameter shall be set to its maximum 255.
VM_ MESSAGE_RETENTION_DAYS	This parameter shall be set to the number of days after which the specific Voice Mail message in this notification is anticipated to be automatically deleted from the Voice Mail system timed from the GSM Timestamp (TP-SCTS 9.2.3.11) for this Enhanced Voice Mail Notification. This parameter has a range 0 to 31. For Voice Mail messages that have a longer retention time than 31 days, this parameter shall be set to its maximum 31.

NOTE: The GSM Timestamp is the time that the SC received the SM from the Voice Mail system which is not necessarily the time that the voice message was deposited into the Voice Mail system.

RESERVED_FOR_FUTURE_USE	This parameter is set to 0 and is reserved for future use.
VM_ MESSAGE_PRIORITY_INDICATION	This parameter shall be set to 1 to indicate that the specific Voice Mail message in this notification held in the Voice Mailbox is urgent; otherwise the parameter shall be set to 0.
VM_MESSAGE_EXTENSION_INDICATOR	In this release, this parameter shall be set to 0. This parameter shall be set to a 1 to indicate that a VM_MESSAGE_EXTENSION_LENGTH parameter is present in this PDU.
VM_MESSAGE_CALLING_LINE_IDENTITY	This parameter shall contain the address to be used by the mobile subscriber to contact the originator of the specific Voice Mail message in this notification. Where the CLI is not available then the coding of this parameter shall indicate that there is no address. i.e The length indicator in this parameter shall be set to 0. This parameter coding shall comply with the the SM-TL address format specified in 9.1.2.5 above.
VM_MESSAGE_EXTENSION_LENGTH	This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MESSAGE_EXTENSION_INDICATOR in this PDU.
VM_MESSAGE_EXTENSION_DATA	This parameter comprises a number of additional octets allowing additional voicemail message specific parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MESSAGE_EXTENSION_LENGTH.

9.2.3.24.13.2 Enhanced Voice Mail Delete Confirmation

The Enhanced Voice Mail Delete Confirmation Information Element Data contains synchronization information. A Voice Mail system may send an Enhanced Voice Mail Delete Confirmation in order to indicate to the ME that certain voice mail messages that have been deleted and to indicate the updated status of the Voice Mailbox.

The Enhanced Voice Mail Delete Confirmation Information Element Data has the following format where the parameters are in strict order following the IEDL. The Enhanced Voice Mail Delete Confirmation IEI and its associated IEDL and IED shall be complete within a single UDH.

Parameter	Parameter Length	Mandatory/Conditional /Optional
ENHANCED_VOICE_MAIL_PDU_TYPE	Bit 0 Octet 1	M
RESERVED_FOR_FUTURE_USE	Bits 1..3 Octet 1	M
SM_STORAGE	Bit 4 Octet 1	M
VM_MAILBOX_ALMOST_FULL	Bit 5 Octet 1	M
VM_MAILBOX_FULL	Bit 6 Octet 1	M
VM_MAILBOX_STATUS_EXTENSION_INDICATOR	Bit 7 Octet 1	M
VM_MAILBOX_ACCESS_ADDRESS	Octets 2..n+2 (NOTE 2)	M
NUMBER_OF_VOICE_MESSAGES	Bits 0..7 Octet n+3	M
NUMBER_OF_VM_DELETES	Bits 0..4 Octet n+4	M
RESERVED_FOR_FUTURE_USE	Bits 5..7 Octet n+4	M
VM_MAILBOX_STATUS_EXTENSION_LENGTH	1 Octet (NOTE 3)	C
VM_MAILBOX_STATUS_EXTENSION_DATA	1 or more Octets (NOTE 3)	C
VM_MESSAGE_ID (NOTE 1)	Octets n+5..n+6	M
RESERVED_FOR_FUTURE_USE (NOTE 1)	Bits 0..6 Octet n+7	M
VM_MESSAGE_EXTENSION_INDICATOR (NOTE 1)	Bit 7 Octet n+7	M
VM_MESSAGE_EXTENSION_LENGTH (NOTE 1)	1 Octet (NOTE 3)	C
VM_MESSAGE_EXTENSION_DATA (NOTE 1)	1 or more Octets (NOTE 3)	C
NOTE 1: This sequence of parameters are repeated a number of times according to the number of Voice Mail Delete Confirmations conveyed in this IE. NOTE 2: 'n' denotes the number of octets required for the VM_MAILBOX_ACCESS_ADDRESS including the Address-Length, Type-of-address and Address-value (see 9.1.2.5). NOTE 3: The Conditional Octets are excluded from the Octet count in the table in this release because no extensions are defined in this release.		

ENHANCED_VOICE_MAIL_PDU_TYPE This parameter shall be set to 1 to specify that the following Information Element Data is an Enhanced Voice Mail Delete Confirmation.

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use.

SM_STORAGE See clause 9.2.3.24.13.1

VM_MAILBOX_ALMOST_FULL See clause 9.2.3.24.13.1

VM_MAILBOX_FULL See clause 9.2.3.24.13.1

VM_MAILBOX_STATUS_EXTENSION_INDICATOR In this release, this parameter shall be set to 0. This parameter shall be set to 1 to indicate that a VM_MAILBOX_STATUS_EXTENSION_LENGTH parameter is present in this PDU.

VM_MAILBOX_ACCESS_ADDRESS See clause 9.2.3.24.13.1

NUMBER_OF_VOICE_MESSAGES See clause 9.2.3.24.13.1

NUMBER_OF_VM_DELETES This parameter has a range 0 to 63. This parameter shall indicate the number of VM_MESSAGE_ID's that follow in this IE

RESERVED_FOR_FUTURE_USE This parameter is set to 0 and is reserved for future use.

VM_MAILBOX_STATUS_EXTENSION_LENGTH This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MAILBOX_STATUS_EXTENSION_INDICATOR in this PDU.

VM_MAILBOX_STATUS_EXTENSION_DATA	This parameter comprises a number of additional octets allowing additional VM mailbox generic status parameters to be conveyed in the PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MAILBOX_EXTENSION_LENGTH
VM_MESSAGE_ID	This parameter shall be set to the message ID of the specific voice mail message(s) whose deletion is being confirmed. The range of this parameter is defined in clause 9.2.3.24.13.1 and for a specific voice mail message the value of this parameter shall be identical to that used for the VM Notification. This parameter is repeated according to the number of voice mail message deletions being confirmed.
RESERVED_FOR_FUTURE_USE	This parameter is set to 0 and is reserved for future use. This parameter is repeated according to the number of voice mail message deletions being confirmed.
VM_MESSAGE_EXTENSION_INDICATOR	In this release, this parameter shall be set to 0.This parameter shall be set to a 1 to indicate that a VM_MESSAGE_EXTENSION_LENGTH parameter is present in this PDU.
VM_MESSAGE_EXTENSION_LENGTH	This parameter shall be set to the number of additional octets that immediately follow. This parameter has a value in the range 0 to 255. The presence of this parameter is conditional on the setting of VM_MESSAGE_EXTENSION_INDICATOR in this PDU
VM_MESSAGE_EXTENSION_DATA	This parameter comprises a number of additional octets allowing additional voicemail message specific parameters to be conveyed in this PDU. Additional octets are not defined in this release but may be defined later by 3GPP. This parameter is conditional on the presence of VM_MESSAGE_EXTENSION_LENGTH