3GPP TSG-T (Terminals) Meeting #20
Hämeenlinna, Finland
4 - 6 June, 2003

TP-030114

Agenda Item: 5.2.3

Source: T2

Title: Change Requests on SMS

Document for: Approval

Spec	CR	Rev	Rel	Subject	Cat	Vers-Current	Vers-New	T2 doc	Workitem
23.040	063	-	Rel-6	Reserved values in TP-Status	F	6.0.1	6.1.0	T2-030284	TEI6
23.040	064	-	R99	Missing SMSs over MSC even if the MS is capable of such sending	F	3.9.0	3.10.0	T2-030320	TEI
23.040	065	-	Rel-4	Missing SMSs over MSC even if the MS is capable of such sending	A	4.7.0	4.8.0	T2-030321	TEI4
23.040	066	-	Rel-4	Missing SMSs over MSC even if the MS is capable of such sending	A	5.5.1	5.6.0	T2-030322	TEI5
23.040	067	-	Rel-6	Missing SMSs over MSC even if the MS is capable of such sending	A	6.0.1	6.1.0	T2-030323	TEI6

3GPP TSG-T2 #21
San Diego, CA, USA
12 -16 May 2003

T2-030284

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **063** ⌘ **rev** **-** ⌘ Current version: **6.0.1** ⌘

*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:	⌘	Reserved values in TP-Status
Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	02/05/2003
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:	⌘	The present way of headlining groups of reserved values has lead to confusion of implementors.
Summary of change:	⌘	Just remove a superfluous head line to align the list of values.
Consequences if not approved:	⌘	Confusion of implementors remains and may lead to different implementations.

Clauses affected:	⌘	9.2.3.15			
Other specs affected:	⌘	**Y**	**N**		
			X	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

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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.

****** FIRST MODIFIED SECTION ******

9.2.3.15 TP-Status (TP-ST)

The TP-Status field indicates the status of a previously submitted SMS-SUBMIT and certain SMS COMMANDS for which a Status -Report has been requested. It consists of one octet and the bits in the octet are used as follows.

The MS shall interpret any reserved values as "Service Rejected" (01100011) but shall store them exactly as received.

bits	value/usage	
7	0	Bits 0..6 as defined below:
	6....0	Indicate whether the previously submitted short message was successfully forwarded to the SME, or whether an error condition has been encountered, as follows:

Short message transaction completed

0000000	Short message received by the SME
0000001	Short message forwarded by the SC to the SME but the SC is unable to confirm delivery
0000010	Short message replaced by the SC

~~Reserved values~~

0000011..0001111	Reserved
0010000..0011111	Values specific to each SC

Temporary error, SC still trying to transfer SM

0100000	Congestion
0100001	SME busy
0100010	No response from SME
0100011	Service rejected
0100100	Quality of service not available
0100101	Error in SME
0100110..0101111	Reserved
0110000..0111111	Values specific to each SC

Permanent error, SC is not making any more transfer attempts

1000000	Remote procedure error
1000001	Incompatible destination
1000010	Connection rejected by SME
1000011	Not obtainable
1000100	Quality of service not available
1000101	No interworking available
1000110	SM Validity Period Expired
1000111	SM Deleted by originating SME
1001000	SM Deleted by SC Administration
1001001	SM does not exist (The SM may have previously existed in the SC but the SC no longer has knowledge of it or the SM may never have previously existed in the SC)
1001010..1001111	Reserved
1010000..1011111	Values specific to each SC

Temporary error, SC is not making any more transfer attempts

1100000	Congestion
1100001	SME busy
1100010	No response from SME
1100011	Service rejected
1100100	Quality of service not available

1100101	Error in SME
1100110..1101001	Reserved
1101010..1101111	Reserved
1110000..1111111	Values specific to each SC

bits	value/usage		
7	1	Bits 0..6	reserved

****** END OF THE DOCUMENT ******

3GPP TSG-T2 #21
San Diego, CA, USA
12 -16 May 2003

T2-030320

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **064** ⌘ **rev** **-** ⌘ Current version: **3.9.0** ⌘

*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:	⌘	Missing SMSs over MSC even if the MS is capable of such sending
Source:	⌘	T2
Work item code:	⌘	TEI
Date:	⌘	13/05/2003
Category:	⌘	**F**
Release:	⌘	R99

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)*
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Use one of the following releases:

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R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Some GPRS handsets do not support SMS over SGSN but only support SMS over MSC. The SMS-GMSC could receive both the MSC and SGSN E.164 numbers from the HLR. Since the MS does not support SMS over GPRS, the SGSN returns " SM_DeliveryFailure" with cause "equipmentNotSM-Equipped" in the MTForwardSM Result. This does not trigger a retry of the delivery in the SMSC via MSC. The SMS will not be delivered at all, even though the MS is capable of receiving SMS over MSC.
Summary of change:	⌘	In order to trigger a second try of the delivery in the SMSC via MSC when the mobile has no SM capability over SGSN, the error "SM Delivery Failure with indication: equipment Not SM Equipped" should be added in the appropriate list under clause 8.1.1.
Consequences if not approved:	⌘	The inability of receiving SMSs over MSC via GPRS handsets which do not support SMS over GPRS will remain, preventing the subscribers to use a feature already provided by the operators.

Clauses affected:	⌘	8.1.1, 11.1

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

⌘

Other comments: ⌘

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****** FIRST MODIFIED SECTION ******

8.1.1 Functionality of the SMS-GMSC

When receiving a short message TPDU from the SC, the SMS-GMSC is responsible for the following operations:

- reception of the short message TPDU;
- inspection of the parameters.

NOTE 1: The SMS-GMSC may be identical to the MSC.

if parameters are incorrect:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if errors are not found within parameters:

- interrogating the HLR ("sendRoutingInfoForShortMsg", see clause 10); retrieving routing information or possible error information;

if HLR is returning error information:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if no errors are indicated by the HLR:

- transferring the short message TPDU to the MSC or SGSN using the routing information obtained from the HLR ("forwardShortMessage", see clause 10);

NOTE 2: In case where two addresses (SGSN and MSC) are received from HLR, the SMS-GMSC may choose (operator dependant) via which nodes (SGSN or MSC) the SMS is first to be sent. The SMS delivery via the SGSN is normally more radio resource efficient than the SMS delivery via the MSC.

if one address (SGSN or MSC) is received from HLR:

- When receiving the report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations;

if the report indicates successful delivery:

- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the report is a failure report indicating "absent subscriber" via the MSC or the SGSN (see clause 3.3):

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) with cause Absent Subscriber ("SM_DeliveryReportStatus", see clauses 9 and 10);
- informing the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the negative report to the SC which should include the reason for the MS being absent (if this information is available) so that the SC may adjust any retry algorithm appropriately (see clauses 9 and 10);

if the report is a failure report indicating "MS memory capacity exceeded" via the MSC or the SGSN (see clause 3.3):

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) with cause MS Memory Capacity Exceeded via the MSC or the SGSN ("SM_DeliveryReportStatus" , see clauses 9 and 10);

- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the report to the SC (see clauses 9 and 10).

if two addresses (SGSN and MSC) are received from HLR:

- When receiving the first report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations:

if the first report indicates successful delivery:

- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the first report is a failure report indicating:

- Unidentified subscriber;
- Facility not supported;
- Absent subscriber with indication: GPRS or IMSI Detach;
- System failure;
- Unexpected data value;
- Data missing;
- GPRS connection suspended (see TS 3GPP TS 29.002 [15]);
- SM Delivery Failure with indication: equipment Not SM Equipped.~~:~~

- transferring the short message TPDU to the second path using the routing information obtained from HLR.

if the second report indicates successful delivery:

- notifying the HLR of the successful delivery of the second transfer via the MSC or SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- notifying the HLR of the unsuccessful delivery at first transfer only with cause "absent subscriber";
- notifying the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, when necessary, a link with the addressed SC (see clause 5);
- creating and sending the successful report to the SC;

if the second report is a failure report:

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) only if at least one of the first or second report failed due to "MS Memory Capacity Exceeded" or "Absent Subscriber" ("SM_DeliveryReportStatus", see clauses 9 and 10);
- notifying the HLR only with the causes "Absent Subscriber", "Memory Capacity Exceeded" via the MSC or the SGSN, or both;
- notifying the HLR of the reason for the MS being absent via the MSC, SGSN or both (if this information is available);
- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the negative report to the SC with errors from first and second path (see clauses 9 and 10).

****** NEXT MODIFIED SECTION ******

11.1 Mobile Terminated short message transfer

If errors are indicated by the VLR after invocation of the "sendInfoFor-MT-SMS" operation, the appropriate error information is returned to the SMS-GMSC in a failure report as specified in 3GPP TS 29.002 [15] (negative outcome of "forwardShortMessage" see clause 10).

If errors are detected by the MSC or by the SGSN during the transfer on the radio interface, the error cause returned in the return error of the MAP procedure ForwardShortMessage shall be set as follows:

Failure at the MSC or SGSN	**Return error to be included in the MAP-proc**
RP-ERROR message with error cause: 22 Memory capacity exceeded Other error causes	 SM_DeliveryFailure with cause "MemoryCapacityExceeded"[1)] SM_DeliveryFailure with cause "equipmentProtocolError"[1)]
CP or lower layer error (e.g. RR, layer 2 failure)[2)] Mobile has no SM capability	SM_DeliveryFailure with cause "equipmentProtocolError"[1)] SM_DeliveryFailure with cause "equipmentNotSM-Equipped"[1)]0
TR1N timeout [2)] MNSMS-error-ind (No SAPI 3)	SM_DeliveryFailure with cause "equipmentProtocolError"[1)]

1) For definition of MAP error SM_DeliveryFailure and its parameter "cause" see 3GPP TS 29.002 [15].
2) The error causes of the RP-ERROR message, the CP layer and timer TR1N are defined in 3GPP TS 24.011 [13].

****** END OF THE DOCUMENT ******

3GPP TSG-T2 #21
San Diego, CA, USA
12 -16 May 2003

T2-030321

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **065** ⌘ **rev** **-** ⌘ Current version: **4.7.0** ⌘

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

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

Title:	⌘	Missing SMSs over MSC even if the MS is capable of such sending
Source:	⌘	T2
Work item code:	⌘	TEI4
Date:	⌘	13/05/2003
Category:	⌘	**A**
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)*
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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:	⌘	Some GPRS handsets do not support SMS over SGSN but only support SMS over MSC. The SMS-GMSC could receive both the MSC and SGSN E.164 numbers from the HLR. Since the MS does not support SMS over GPRS, the SGSN returns " SM_DeliveryFailure" with cause "equipmentNotSM-Equipped" in the MTForwardSM Result. This does not trigger a retry of the delivery in the SMSC via MSC. The SMS will not be delivered at all, even though the MS is capable of receiving SMS over MSC.
Summary of change:	⌘	In order to trigger a second try of the delivery in the SMSC via MSC when the mobile has no SM capability over SGSN, the error "SM Delivery Failure with indication: equipment Not SM Equipped" should be added in the appropriate list under clause 8.1.1.
Consequences if not approved:	⌘	The inability of receiving SMSs over MSC via GPRS handsets which do not support SMS over GPRS will remain, preventing the subscribers to use a feature already provided by the operators.

Clauses affected:	⌘	8.1.1, 11.1

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

Other comments:	⌘	

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NOTE 1: The SMS-GMSC may be identical to the MSC.

if parameters are incorrect:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if errors are not found within parameters:

- interrogating the HLR ("sendRoutingInfoForShortMsg", see clause 10); retrieving routing information or possible error information;

if HLR is returning error information:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if no errors are indicated by the HLR:

- transferring the short message TPDU to the MSC or SGSN using the routing information obtained from the HLR ("forwardShortMessage", see clause 10);

NOTE 2: In case where two addresses (SGSN and MSC) are received from HLR, the SMS-GMSC may choose (operator dependant) via which nodes (SGSN or MSC) the SMS is first to be sent. The SMS delivery via the SGSN is normally more radio resource efficient than the SMS delivery via the MSC.

if one address (SGSN or MSC) is received from HLR:

- When receiving the report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations;

if the report indicates successful delivery:

- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the report is a failure report indicating "absent subscriber" via the MSC or the SGSN (see clause 3.3):

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) with cause Absent Subscriber ("SM_DeliveryReportStatus", see clauses 9 and 10);
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- System failure;
- Unexpected data value;
- Data missing;
- GPRS connection suspended (see TS 3GPP TS 29.002 [15]);
- SM Delivery Failure with indication: equipment Not SM Equipped.~~:~~

- transferring the short message TPDU to the second path using the routing information obtained from HLR.

if the second report indicates successful delivery:

- notifying the HLR of the successful delivery of the second transfer via the MSC or SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
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- notifying the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, when necessary, a link with the addressed SC (see clause 5);
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if the second report is a failure report:

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) only if at least one of the first or second report failed due to "MS Memory Capacity Exceeded" or "Absent Subscriber" ("SM_DeliveryReportStatus", see clauses 9 and 10);
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****** NEXT MODIFIED SECTION ******

11.1 Mobile Terminated short message transfer

If errors are indicated by the VLR after invocation of the "sendInfoFor-MT-SMS" operation, the appropriate error information is returned to the SMS-GMSC in a failure report as specified in 3GPP TS 29.002 [15] (negative outcome of "forwardShortMessage" see clause 10).

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RP-ERROR message with error cause: 22 Memory capacity exceeded Other error causes	 SM_DeliveryFailure with cause "MemoryCapacityExceeded"[1)] SM_DeliveryFailure with cause "equipmentProtocolError"[1)]
CP or lower layer error (e.g. RR, layer 2 failure)[2)] Mobile has no SM capability	SM_DeliveryFailure with cause "equipmentProtocolError"[1)] SM_DeliveryFailure with cause "equipmentNotSM-Equipped"[1)]0
TR1N timeout [2)] MNSMS-error-ind (No SAPI 3)	SM_DeliveryFailure with cause "equipmentProtocolError"[1)]

1) For definition of MAP error SM_DeliveryFailure and its parameter "cause" see 3GPP TS 29.002 [15].
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****** END OF THE DOCUMENT ******

3GPP TSG-T2 #21
San Diego, CA, USA
12 -16 May 2003

T2-030322

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **066** ⌘ **rev** **-** ⌘ Current version: **5.5.1** ⌘

*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:	⌘	Missing SMSs over MSC even if the MS is capable of such sending
Source:	⌘	T2
Work item code:	⌘	TEI5
Date:	⌘	07/03/2003
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)*
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R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Some GPRS handsets do not support SMS over SGSN but only support SMS over MSC. The SMS-GMSC could receive both the MSC and SGSN E.164 numbers from the HLR. Since the MS does not support SMS over GPRS, the SGSN returns " SM_DeliveryFailure" with cause "equipmentNotSM-Equipped" in the MTForwardSM Result. This does not trigger a retry of the delivery in the SMSC via MSC. The SMS will not be delivered at all, even though the MS is capable of receiving SMS over MSC.
Summary of change:	⌘	In order to trigger a second try of the delivery in the SMSC via MSC when the mobile has no SM capability over SGSN, the error "SM Delivery Failure with indication: equipment Not SM Equipped" should be added in the appropriate list under clause 8.1.1.
Consequences if not approved:	⌘	The inability of receiving SMSs over MSC via GPRS handsets which do not support SMS over GPRS will remain, preventing the subscribers to use a feature already provided by the operators.

Clauses affected:	⌘	8.1.1, 11.1

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

Other comments:	⌘	

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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.

****** FIRST MODIFIED SECTION ******

8.1.1 Functionality of the SMS-GMSC

When receiving a short message TPDU from the SC, the SMS-GMSC is responsible for the following operations:

- reception of the short message TPDU;
- inspection of the parameters.

NOTE 1: The SMS-GMSC may be identical to the MSC.

if parameters are incorrect:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if errors are not found within parameters:

- interrogating the HLR ("sendRoutingInfoForShortMsg", see clause 10); retrieving routing information or possible error information;

if HLR is returning error information:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if no errors are indicated by the HLR:

- transferring the short message TPDU to the MSC or SGSN using the routing information obtained from the HLR ("forwardShortMessage", see clause 10);

NOTE 2: In case where two addresses (SGSN and MSC) are received from HLR, the SMS-GMSC may choose (operator dependant) via which nodes (SGSN or MSC) the SMS is first to be sent. The SMS delivery via the SGSN is normally more radio resource efficient than the SMS delivery via the MSC.

if one address (SGSN or MSC) is received from HLR:

- When receiving the report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations;

if the report indicates successful delivery:

- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the report is a failure report indicating "absent subscriber" via the MSC or the SGSN (see clause 3.3):

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) with cause Absent Subscriber ("SM_DeliveryReportStatus", see clauses 9 and 10);
- informing the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the negative report to the SC which should include the reason for the MS being absent (if this information is available) so that the SC may adjust any retry algorithm appropriately (see clauses 9 and 10);

if the report is a failure report indicating "MS memory capacity exceeded" via the MSC or the SGSN (see clause 3.3):

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) with cause MS Memory Capacity Exceeded via the MSC or the SGSN ("SM_DeliveryReportStatus" , see clauses 9 and 10);

- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the report to the SC (see clauses 9 and 10).

if two addresses (SGSN and MSC) are received from HLR:

- When receiving the first report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations:

if the first report indicates successful delivery:

- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the first report is a failure report indicating:

- Unidentified subscriber;
- Facility not supported;
- Absent subscriber with indication: GPRS or IMSI Detach;
- System failure;
- Unexpected data value;
- Data missing;
- GPRS connection suspended (see TS 3GPP TS 29.002 [15]);
- SM Delivery Failure with indication: equipment Not SM Equipped.~~:~~

- transferring the short message TPDU to the second path using the routing information obtained from HLR.

if the second report indicates successful delivery:

- notifying the HLR of the successful delivery of the second transfer via the MSC or SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- notifying the HLR of the unsuccessful delivery at first transfer only with cause "absent subscriber";
- notifying the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, when necessary, a link with the addressed SC (see clause 5);
- creating and sending the successful report to the SC;

if the second report is a failure report:

- requesting the HLR to insert the address of the originating SC into the MWD (if implemented) only if at least one of the first or second report failed due to "MS Memory Capacity Exceeded" or "Absent Subscriber" ("SM_DeliveryReportStatus", see clauses 9 and 10);
- notifying the HLR only with the causes "Absent Subscriber", "Memory Capacity Exceeded" via the MSC or the SGSN, or both;
- notifying the HLR of the reason for the MS being absent via the MSC, SGSN or both (if this information is available);
- establishing, where necessary, a link with the addressed SC (see clause 5);
- creating and sending the negative report to the SC with errors from first and second path (see clauses 9 and 10).

****** NEXT MODIFIED SECTION ******

11.1 Mobile Terminated short message transfer

If errors are indicated by the VLR after invocation of the "sendInfoFor-MT-SMS" operation, the appropriate error information is returned to the SMS-GMSC in a failure report as specified in 3GPP TS 29.002 [15] (negative outcome of "forwardShortMessage" see clause 10).

If errors are detected by the MSC or by the SGSN during the transfer on the radio interface, the error cause returned in the return error of the MAP procedure ForwardShortMessage shall be set as follows:

Failure at the MSC or SGSN	**Return error to be included in the MAP-proc**
RP-ERROR message with error cause: 22 Memory capacity exceeded Other error causes	 SM_DeliveryFailure with cause "MemoryCapacityExceeded"[1)] SM_DeliveryFailure with cause "equipmentProtocolError"[1)]
CP or lower layer error (e.g. RR, layer 2 failure)[2)] Mobile has no SM capability	SM_DeliveryFailure with cause "equipmentProtocolError"[1)] SM_DeliveryFailure with cause "equipmentNotSM-Equipped"[1)]0
TR1N timeout [2)] MNSMS-error-ind (No SAPI 3)	SM_DeliveryFailure with cause "equipmentProtocolError"[1)]

1) For definition of MAP error SM_DeliveryFailure and its parameter "cause" see 3GPP TS 29.002 [15].
2) The error causes of the RP-ERROR message, the CP layer and timer TR1N are defined in 3GPP TS 24.011 [13].

****** END OF THE DOCUMENT ******

3GPP TSG-T2 #21
San Diego, CA, USA
12 -16 May 2003

T2-030323

CR-Form-v7

CHANGE REQUEST

⌘ **23.040** **CR** **067** ⌘ **rev** **-** ⌘ Current version: **6.0.1** ⌘

*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:	⌘	Missing SMSs over MSC even if the MS is capable of such sending
Source:	⌘	T2
Work item code:	⌘	TEI6
Date:	⌘	07/04/2003
Category:	⌘	**A**
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:	⌘	Some GPRS handsets do not support SMS over SGSN but only support SMS over MSC. The SMS-GMSC could receive both the MSC and SGSN E.164 numbers from the HLR. Since the MS does not support SMS over GPRS, the SGSN returns " SM_DeliveryFailure" with cause "equipmentNotSM-Equipped" in the MTForwardSM Result. This does not trigger a retry of the delivery in the SMSC via MSC. The SMS will not be delivered at all, even though the MS is capable of receiving SMS over MSC.
Summary of change:	⌘	In order to trigger a second try of the delivery in the SMSC via MSC when the mobile has no SM capability over SGSN, the error "SM Delivery Failure with indication: equipment Not SM Equipped" should be added in the appropriate list under clause 8.1.1.
Consequences if not approved:	⌘	The inability of receiving SMSs over MSC via GPRS handsets which do not support SMS over GPRS will remain, preventing the subscribers to use a feature already provided by the operators.

Clauses affected:	⌘	8.1.1, 11.1

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.

****** FIRST MODIFIED SECTION ******

8.1.1 Functionality of the SMS-GMSC

When receiving a short message TPDU from the SC, the SMS-GMSC is responsible for the following operations:

- reception of the short message TPDU;
- inspection of the parameters.

NOTE 1: The SMS-GMSC may be identical to the MSC.

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if errors are not found within parameters:

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if HLR is returning error information:

- returning the appropriate error information to the SC in a failure report (see clauses 9 and 10);

if no errors are indicated by the HLR:

- transferring the short message TPDU to the MSC or SGSN using the routing information obtained from the HLR ("forwardShortMessage", see clause 10);

NOTE 2: In case where two addresses (SGSN and MSC) are received from HLR, the SMS-GMSC may choose (operator dependant) via which nodes (SGSN or MSC) the SMS is first to be sent. The SMS delivery via the SGSN is normally more radio resource efficient than the SMS delivery via the MSC.

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- notifying the HLR of the successful delivery via the MSC or the SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- creating and sending the successful report to the SC;

if the report is a failure report indicating "absent subscriber" via the MSC or the SGSN (see clause 3.3):

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- When receiving the first report associated with the short message from the MSC or SGSN (positive or negative outcome of "forwardShortMessage", see clause 10), the SMS-GMSC is responsible for the following operations:

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- System failure;
- Unexpected data value;
- Data missing;
- GPRS connection suspended (see TS 3GPP TS 29.002 [15])~~.~~;
- SM Delivery Failure with indication: equipment Not SM Equipped.

- transferring the short message TPDU to the second path using the routing information obtained from HLR.

if the second report indicates successful delivery:

- notifying the HLR of the successful delivery of the second transfer via the MSC or SGSN, which shall cause the HLR to alert any service centres whose addresses are stored in the MWD for the MS;
- notifying the HLR of the unsuccessful delivery at first transfer only with cause "absent subscriber";
- notifying the HLR of the reason for the MS being absent via the MSC or the SGSN (if this information is available);
- establishing, when necessary, a link with the addressed SC (see clause 5);
- creating and sending the successful report to the SC;

if the second report is a failure report:

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TR1N timeout [2)] MNSMS-error-ind (No SAPI 3)	SM_DeliveryFailure with cause "equipmentProtocolError"[1)]

1) For definition of MAP error SM_DeliveryFailure and its parameter "cause" see 3GPP TS 29.002 [15].
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****** END OF THE DOCUMENT ******