

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

Tdoc TP-020177

**3GPP TSG-T WG1 Meeting #16
Yokohama, Japan, 29 July – 2 August 2002**

**Tdoc T1-020609
(T1S020512)**

Title: LS on Handling of SMS Type 0 test case for R'99 and REL-4 UEs
Release: R'99 & REL-4

Source: 3GPP TSG-T WG1
To: 3GPP TSG-T WG2
Copy to: 3GPP TSG-T plenary

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Attachments: T1-020608 & T1-020610: Test case proposal for short message type 0 (R'99 & REL-4)

1. Overall Description

At the recent 3GPP TSG-T #16 plenary meeting, concerns were raised regarding 34.123-1 CR255 on the addition of a test of short message type 0 (CS/PS) as the R'99 and REL-4 version of the test case was not testing all of the possible replies of the R'99 and REL-4 UE. TS 34.123-1 CR255 was revised in TP-020164 containing only the REL-5 part of the CR and approved.

It was noted that R'99, and REL-4 changes were not rejected but postponed due to the ambitious changes in the core specification. After the changes in the core spec are done, these changes of the test specification might be represented.

This leads to the fact that there is currently no test on SMS type 0 existing for R'99 and REL-4 UEs.

3GPP TSG-T WG1 respectfully asks that 3GPP TSG-T WG2 provides guidance and an explanation on how else (other than that described in clauses 16.1.6 and 16.2.6 of the attached test case proposal), a R'99 or a REL-4 UE could reply to the SS on successful receipt of the short message type 0.

3GPP TSG-T WG1 would also like to point out that TS 34.123-1 already contains a test case to check the same requirement that concerns 3GPP TSG-T on SMS Class 0 (clause 16.1.5.1 for CS and 16.2.5.1 for PS).

The tests mentioned above also exist in TS 51.010-1 (under the responsibility of 3GPP TSG-GERAN WG5), and the test on SMS Class 0 (clause 34.2.5.1) has been a problem-free mandatory test demanded by the Global Certification Forum (GCF) for some time.

2. Actions

To 3GPP TSG-T WG2:

ACTION: 3GPP TSG-T WG1 asks 3GPP TSG-T WG2 for guidance and explanation on how else than already described in the attached test case proposal (clauses 16.1.6 and 16.2.6) a R'99 or a REL-4 UE could reply to the SS on successful receipt of the short message type 0. 3GPP TSG-T WG1 would appreciate an answer at the next 3GPP TSG-T plenary meeting (4th – 6th September 2002 in Biarritz).

3. Date of Next 3GPP TSG-T WG1 Meeting

| | | |
|------------------------------|--|----------------|
| TSG-T WG1 Signalling SG #25 | 18 th – 20 th September 2002 | Singapore |
| TSG-T WG1 SIG/RF/Plenary #17 | 4 th – 8 th November 2002 | Harpenden, UK. |

CR-Form-v7

CHANGE REQUEST

⌘ **TS 34.123-1 CR CRNum** ⌘ rev **-** ⌘ Current version: **5.0.1** ⌘

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: | ⌘ | CR to section 16.1.6 & 16.2.6: Addition of test of short message type 0 (CS/PS) R99 and REL-4 | |
| Source: | ⌘ | Vodafone Group | |
| Work item code: | ⌘ | TEI | Date: ⌘ 01/08/2002 |
| Category: | ⌘ | F | Release: ⌘ REL-5 |
| | | Use <u>one</u> of the following categories: | Use <u>one</u> of the following releases: |
| | | F (correction) | 2 (GSM Phase 2) |
| | | A (corresponds to a correction in an earlier release) | R96 (Release 1996) |
| | | B (addition of feature), | R97 (Release 1997) |
| | | C (functional modification of feature) | R98 (Release 1998) |
| | | D (editorial modification) | R99 (Release 1999) |
| | | Detailed explanations of the above categories can be found in 3GPP TR 21.900 . | Rel-4 (Release 4) |
| | | | Rel-5 (Release 5) |
| | | | Rel-6 (Release 6) |

| | | |
|--------------------------------------|---|---|
| Reason for change: | ⌘ | For SMS Type 0 there is currently no test existing for a R99 and REL-4 UE implementation. However, this feature is used by many network operators in order to get UE positioning data or to check whether an UE is 'on air' in the network. An UE receiving such a message shall behave according to the core specifications. |
| Summary of change: | ⌘ | Addition of a new test in section 16.1.6 (CS) and 16.2.6 (PS) |
| Consequences if not approved: | ⌘ | The UE is not tested according to this requirement and may show service affecting behaviour when receiving a Type 0 Short Message |

| | | | | | | | | | | | | |
|------------------------------|---|---|---|---|--|---|---|--|--|---|---------------------------|---------------|
| Clauses affected: | ⌘ | Section 16.1.6 & 16.2.6, new test | | | | | | | | | | |
| Other specs affected: | ⌘ | <table border="1" style="display: inline-table; border-collapse: collapse; text-align: center;"> <tr> <td style="width: 20px;">Y</td> <td style="width: 20px;">N</td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> <tr> <td style="width: 20px;">X</td> <td style="width: 20px;"> </td> </tr> <tr> <td style="width: 20px;"> </td> <td style="width: 20px;">X</td> </tr> </table> | Y | N | | X | X | | | X | Other core specifications | ⌘ TS 34.123-2 |
| | | Y | N | | | | | | | | | |
| | | | X | | | | | | | | | |
| | | X | | | | | | | | | | |
| | X | | | | | | | | | | | |
| Test specifications | | | | | | | | | | | | |
| O&M Specifications | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| Other comments: | ⌘ | Affects R99, REL-4 | | | | | | | | | | |

16.1.6 Test of short message type 0 (R99 and REL-4 UE)

~~For further study.~~

16.1.6.1 Definition and applicability

This tests that the UE correctly acknowledges the receipt of the short message type 0 to the SC in Circuit Switched mode. It is highly recommended that the UE discards the contents of the short message type 0.

This test shall apply to all R99 and REL-4 UEs supporting receipt of short messages in CS mode.

16.1.6.2 Conformance requirement

When a mobile terminated message is type 0, the UE shall acknowledge receipt of the short message to the SC but may discard its contents.

Note: It is highly recommended that the UE discards the type 0 short message. This means that the UE is able to receive the type 0 short message irrespective of whether there is memory available in the (U)SIM or ME or not, the UE does not indicate the receipt of the type 0 short message to the user, and the message is not stored in the (U)SIM or ME.

Reference(s)

3GPP TS 23.040, 9.2.3.9.

16.1.6.3 Test purpose

To verify that the UE will acknowledge receipt of the short message to the SC. The UE should discard its contents.

NOTE: failure of this test in a UE could cause it to reject a type 0 message when the network is trying to reach the UE. This could lead to unwanted repetitions between the UE and the service centre.

16.1.6.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

the UE shall be in MM-state "Idle, updated".

Related ICS/IXIT Statements

Support for Short Message MT/PP.

The value of timer TC1M.

Foreseen Final State of UE

Idle, updated.

Test Procedure

The SS sends a type 0 message by using the method described in step a) of section 16.1.1 but with the TPDU described in this section.

Maximum Duration of Test

1 minute

Expected Sequence

| Step | Direction | | Message | Comments |
|------|-----------|-----|--|--|
| | UE | SS | | |
| 1 | | | Mobile terminated establishment of Radio Resource Connection | See 3GPP TS34.108 Contains RP-DATA RPDU (SMS DELIVER TPDU), type 0 Short Message Contains RP-ACK TP-Protocol-Identifier (TP-PID). It is highly recommended that the UE discards the type 0 short message. This means that the UE is able to receive the type 0 short message irrespective of whether there is memory available in the (U)SIM or ME or not, the UE does not indicate the receipt of the type 0 short message to the user, and the message is not stored in the (U)SIM or ME. |
| 2 | | --> | PAGING RESPONSE | |
| 3 | | <-- | AUTHENTICATION REQUEST | |
| 4 | | --> | AUTHENTICATION RESPONSE | |
| 5 | | <-- | SECURITY MODE COMMAND | |
| 6 | | --> | SECURITY MODE COMPLETE | |
| 7 | | <-- | CP-DATA | |
| 8 | | --> | CP-ACK | |
| 9 | | --> | CP-DATA | |
| 10 | | <-- | CP-ACK | |
| 11 | | <-- | RRC CONNECTION RELEASE | |
| 12 | | --> | RRC CONNECTION RELEASE COMPLETE | |
| 13 | UE | | | |

Specific Message Contents:

SMS-DELIVER TPDU (containing a type 0 message) (SS to UE):

| Information element | Comment Value |
|---------------------------|---|
| <u>TP-MIT</u> | <u>SMS-DELIVER "00"B</u> |
| <u>TP-MMS</u> | <u>more messages are waiting in SC "0"B</u> |
| <u>TP-RP</u> | <u>no reply path "0"B</u> |
| <u>TP-UDHI</u> | <u>TP-UD contains only the SM"0"B</u> |
| <u>TP-SRI</u> | <u>no status report returned0</u> |
| <u>TP-OA</u> | <u>an international number coded E.164</u> |
| <u>TP-PID</u> | <u>Type 0: "01000000"B</u> |
| <u>TP-DCS</u> | <u>default alphabet "0000 0000"B</u> |
| <u>TP-SCTS</u> | <u>any legal value (cf. 3GPP TS 23.040)</u> |
| <u>TP-UDL</u> | <u>160</u> |
| <u>TP-UD (140 octets)</u> | <u>text of message (160 characters)</u> |

[...]

16.2 Short message service point to point on PS mode

All of test cases in this clause are applied to the UE supported PS mode.

[...]

16.2.6 Test of short message type 0 (R99 and REL-4 UE)

~~For further study.~~

16.2.6.1 Definition and applicability

This tests that the UE correctly acknowledges the receipt of the short message type 0 to the SC in Packet Switched mode. It is highly recommended that the UE discards the contents of the short message type 0.

This test shall apply to all R99 and REL-4 UEs supporting receipt of short messages in PS mode.

16.2.6.2 Conformance requirement

When a mobile terminated message is type 0, the UE shall acknowledge receipt of the short message to the SC but may discard its contents.

Note: It is highly recommended that the UE discards the type 0 short message. This means that the UE is able to receive the type 0 short message irrespective of whether there is memory available in the (U)SIM or ME or not, the UE does not indicate the receipt of the type 0 short message to the user, and the message is not stored in the (U)SIM or ME.

Reference(s)

3GPP TS 23.040, 9.2.3.9.

16.2.6.3 Test purpose

To verify that the UE will acknowledge receipt of the short message to the SC. The UE should discard its contents.

NOTE: failure of this test in a UE could cause it to reject a type 0 message when the network is trying to reach the UE. This could lead to unwanted repetitions between the UE and the service centre.

16.2.6.4 Method of test

Initial conditions

System Simulator:

1 cell, default parameters.

User Equipment:

the UE shall be in GMM-state "GMM-REGISTERED";

Related ICS/IXIT Statements

Support for Short Message MT/PP.

The value of timer TC1M.

Foreseen Final State of UE

Idle, updated.

Test Procedure

The SS sends a type 0 message by using the method described in step a) of section 16.2.1 but with the TPDU described in this section.

Maximum Duration of Test

1 minute

Expected Sequence

| Step | Direction | | Message | Comments |
|------|-----------|-----|--|---|
| | UE | SS | | |
| 1 | | | Mobile terminated establishment of Radio Resource Connection | See 3GPP TS34.108 |
| 2 | | --> | SERVICE REQUEST | |
| 3 | | <-- | AUTHENTICATION AND CIPHERING REQUEST | |
| 4 | | --> | AUTHENTICATION AND CIPHERING RESPONSE | |
| 5 | | <-- | SECURITY MODE COMMAND | |
| 6 | | --> | SECURITY MODE COMPLETE | |
| 7 | | <-- | CP-DATA | Contains RP-DATA RPDU (SMS DELIVER TPDU), type 0 Short Message |
| 8 | | --> | CP-ACK | |
| 9 | | --> | CP-DATA | Contains RP-ACK TP-Protocol-Identifier (TP-PID). |
| 10 | | <-- | CP-ACK | |
| 11 | | <-- | RRC CONNECTION RELEASE | |
| 12 | | --> | RRC CONNECTION RELEASE COMPLETE | |
| 13 | UE | | | It is highly recommended that the UE discards the type 0 short message. This means that the UE is able to receive the type 0 short message irrespective of whether there is memory available in the (U)SIM or ME or not, the UE does not indicate the receipt of the type 0 short message to the user, and the message is not stored in the (U)SIM or ME. |

Specific Message Contents:SMS-DELIVER TPDU (containing a type 0 message) (SS to UE):

| <u>Information element</u> | <u>Comment Value</u> |
|----------------------------|--------------------------------------|
| <u>TP-MIT</u> | SMS-DELIVER "00"B |
| <u>TP-MMS</u> | more messages are waiting in SC "0"B |
| <u>TP-RP</u> | no reply path "0"B |
| <u>TP-UDHI</u> | TP-UD contains only the SM"0"B |
| <u>TP-SRI</u> | no status report returned0 |
| <u>TP-OA</u> | an international number coded E.164 |
| <u>TP-PID</u> | Type 0: "01000000"B |
| <u>TP-DCS</u> | default alphabet "0000 0000"B |
| <u>TP-SCTS</u> | any legal value (cf. 3GPP TS 23.040) |
| <u>TP-UDL</u> | 160 |
| <u>TP-UD (140 octets)</u> | text of message (160 characters) |

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CHANGE REQUEST

⌘ **TS 34.123-2 CR CRNum** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

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: | ⌘ CR to TS 34.123-2 section 4 Table 1: Addition of test of short message type 0 (CS/PS) R99 and REL-4 |
| Source: | ⌘ Vodafone Group |
| Work item code: | ⌘ TEI Date: ⌘ 01/08/2002 |
| Category: | ⌘ F Release: ⌘ REL-5 |
| | <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p><i>Use one of the following categories:</i></p> <p>F (correction)</p> <p>A (corresponds to a correction in an earlier release)</p> <p>B (addition of feature),</p> <p>C (functional modification of feature)</p> <p>D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </div> <div style="width: 45%;"> <p><i>Use one of the following releases:</i></p> <p>2 (GSM Phase 2)</p> <p>R96 (Release 1996)</p> <p>R97 (Release 1997)</p> <p>R98 (Release 1998)</p> <p>R99 (Release 1999)</p> <p>Rel-4 (Release 4)</p> <p>Rel-5 (Release 5)</p> <p>Rel-6 (Release 6)</p> </div> </div> |

| | |
|--------------------------------------|---|
| Reason for change: | ⌘ For SMS Type 0 there is currently no test existing for a R99 and REL-4 UE implementation. However, this feature is used by many network operators in order to get UE positioning data or to check whether an UE is 'on air' in the network. An UE receiving such a message shall behave according to the core specifications. |
| Summary of change: | ⌘ Addition of a new test in the Applicability Table, clause 16.1.6 (CS) and 16.2.6 (PS) |
| Consequences if not approved: | ⌘ The Applicability Table will be incomplete. |

| | | | | | | | | | | |
|------------------------------|--|---|---|--|---|---|--|--|---|---------------------------|
| Clauses affected: | ⌘ Section 4, Table 1, Applicability Table | | | | | | | | | |
| Other specs affected: | <table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="padding: 2px;">Y</td> <td style="padding: 2px;">N</td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> <tr> <td style="padding: 2px;">X</td> <td style="padding: 2px;"></td> </tr> <tr> <td style="padding: 2px;"></td> <td style="padding: 2px;">X</td> </tr> </table> | Y | N | | X | X | | | X | Other core specifications |
| | Y | N | | | | | | | | |
| | | X | | | | | | | | |
| X | | | | | | | | | | |
| | X | | | | | | | | | |
| Test specifications | ⌘ TS 34.123-1 | | | | | | | | | |
| O&M Specifications | | | | | | | | | | |
| Other comments: | ⌘ Affects R99 and REL-4. | | | | | | | | | |

[...]

Table 1: Applicability of tests

| Clause | Title | Release | Applicability | Comments |
|------------|--|-------------|---------------|--|
| [...] | | | | |
| SMS | | | | |
| 16.1.1 | SMS on CS mode / SMS mobile terminated | R99 | C18 | UE capable of receiving Short Message at any time on CS mode. |
| 16.1.2 | SMS on CS mode / SMS mobile originated | R99 | C20 | UE capable of submitting Short Message at any time on CS mode. |
| 16.1.3 | SMS on CS mode / Test of memory full condition and memory available notification | R99 | C21 | UE capable of sending the correct acknowledgement of memory full condition on CS mode. |
| 16.1.4 | SMS on CS mode / Test of the status report capabilities and of SMS-COMMAND | R99 | C22 | UEs supporting the status report capabilities on CS mode. |
| 16.1.5.1 | SMS on CS mode / Short message class 0 | R99 | C23 | UE capable of displaying short messages on CS mode |
| 16.1.5.2 | SMS on CS mode / Test of class 1 short messages | R99 | C24 | UE capable of displaying short messages and storing of received Class 1 Short Messages on CS mode |
| 16.1.5.3 | SMS on CS mode / Test of class 2 short messages | R99 | C25 | UE capable of displaying short messages and storing of received Class 2 Short Messages in the SIM on CS mode. |
| 16.1.5.4 | SMS on CS mode / Test of class 3 short messages | R99 | [FFS] | [FFS] |
| 16.1.6 | SMS on CS mode / Test of short message type 0 (R99 and REL-4 UE) (???) | R99 & REL-4 | [FFS]C18 | UE capable of receiving Short Message on CS mode [FFS] |
| 16.1.6a | SMS on CS mode / Test of short message type 0 (≥ REL-5 UE) | REL-5 | C19 | UE capable of receiving, displaying and storing of received Short Messages in the UE-(U)SIM message store on CS mode. |
| 16.1.7 | SMS on CS mode / Test of the replace mechanism for SM type 1-7 | R99 | C33 | UEs which support Replace Short Messages and display of received Short Messages on CS mode. |
| 16.1.8 | SMS on CS mode / Test of the reply path scheme | R99 | C34 | UEs which support reply procedures (the class of UEs for which this is mandatory is described in TS 23.040, annex 4) displaying of received Short Messages and submitting Short Messages on CS mode. |
| 16.1.9.1 | SMS on CS mode / Multiple SMS mobile originated / UE in idle mode | R99 | C35 | UE supporting the ability of sending multiple short messages on the same RR connection when there is no call in progress on CS mode. |
| 16.1.9.2 | SMS on CS mode / Multiple SMS mobile originated / UE in active mode | R99 | C36 | UE supporting the ability of sending concatenated multiple short messages when there is a call in progress on CS mode. |
| 16.1.10 | SMS on CS mode / Test of capabilities of simultaneously receiving a short message whilst sending a mobile originated short message | R99 | C101 | UE capable of receiving Short Message whilst sending Short Message on CS mode. |
| 16.2.1 | SMS on PS mode / SMS mobile terminated | R99 | C26 | UE capable of receiving Short Message at any time on PS mode. |
| 16.2.2 | SMS on PS mode / SMS mobile originated | R99 | C27 | UE capable of submitting Short Message at any time on PS mode. |
| 16.2.3 | SMS on PS mode / Test of memory full condition and memory available notification | R99 | C28 | UE capable of sending the correct acknowledgement of memory full condition in PS mode. |
| 16.2.4 | SMS on PS mode / Test of the status report capabilities and of SMS-COMMAND | R99 | C29 | UEs supporting the status report capabilities in PS mode. |
| 16.2.5.1 | Short message class 0 | R99 | C30 | UE capable of displaying short messages in PS mode |
| 16.2.5.2 | SMS on PS mode / Test of class 1 short messages | R99 | C31 | UE capable of displaying short messages and storing of received Class 1 Short Messages in PS mode |
| 16.2.5.3 | SMS on PS mode / Test of class 2 short messages | R99 | C32 | UE capable of displaying short messages and storing of received Class 2 Short Messages in the SIM in PS mode. |
| 16.2.5.4 | SMS on PS mode / Test of class 3 short messages | R99 | [FFS] | [FFS] |

| Clause | Title | Release | Applicability | Comments |
|--------------------------------|--|------------------|---------------|--|
| 16.2.6 | SMS on PS mode / Test of short message type 0 (R99 and REL-4 UE) (???) | R99 & REL-4 only | [FFS]C26 | UE capable of receiving Short Message on PS mode [FFS] |
| 16.2.6a | SMS on PS mode / Test of short message type 0 (≥ REL-5 UE) | REL-5 | C48 | UE capable of receiving, displaying and storing of received Short Messages in the UE-/(U)SIM message store on PS mode. |
| 16.2.7 | SMS on PS mode / Test of the replace mechanism for SM type 1-7 | R99 | C37 | UEs which support Replace Short Messages and display of received Short Messages in PS mode. |
| 16.2.8 | SMS on PS mode / Test of the reply path scheme | R99 | C38 | UEs which support reply procedures (the class of UEs for which this is mandatory is described in TS 23.040, annex 4) displaying of received Short Messages and submitting Short Messages in PS mode. |
| 16.2.10 | SMS on PS mode / Test of capabilities of simultaneously receiving a short message whilst sending a mobile originated short message | R99 | C102 | UE capable of receiving Short Message whilst sending Short Message on PS mode. |
| 16.3 | Short message service cell broadcast | R99 | C219 | UE capable of receiving broadcast messages. |
| USER EQUIPMENT FEATURES | | | | |
| [...] | | | | |
| [...] | | | | |