

**3GPP TSG CN Plenary Meeting #14
Kyoto, JAPAN, 12th-14th December 2001**

NP-010614

Source: TSG CN WG4
Title: CRs on R99 Location Service Enhancements
Agenda item: 7.16
Document for: APPROVAL

Introduction:

This document contains 4 CRs on R99 Work Item "LCS", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #14 for approval.

| Spec | CR | Rev | Doc-2nd-Level | Phase | Subject | Cat | Ver_C |
|--------|-----|-----|---------------|-------|---|-----|--------|
| 24.030 | 007 | | N4-011072 | R99 | CR 004 wrongly implemented | F | 3.2.0 |
| 29.002 | 319 | | N4-011073 | R99 | Correct length of Add-GeographicalInformation | F | 3.10.0 |
| 29.002 | 320 | | N4-011074 | Rel-4 | Correct length of Add-GeographicalInformation | A | 4.5.0 |
| 29.010 | 042 | 1 | N4-011420 | R99 | Alignment of 29.010 to 25.413 for LCS | F | 3.6.0 |

CR-Form-v4

CHANGE REQUEST

⌘ **24.030 CR 007** ⌘ rev **-** ⌘ Current version: **3.2.0** ⌘

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

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

| | | | |
|------------------------|--|-----------------|---|
| Title: | ⌘ CR 004 wrongly implemented | | |
| Source: | ⌘ CN4 | | |
| Work item code: | ⌘ LCS | Date: | ⌘ 14/9/2001 |
| Category: | ⌘ F (Wrong CR Implementation) | Release: | ⌘ R99 |
| | <i>Use one of the following categories:</i> 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. | | <i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5) |

| | |
|--------------------------------------|---|
| Reason for change: | ⌘ CR 004 presented at CN4#8 in Puerto Rico, T-doc N4-010535, has been wrongly implemented. The second sentence to be added has not been included, and in its place the first sentence to be added has been repeated for the second time. Moreover figure 5.2 is also wrong. |
| Summary of change: | ⌘ Align text with CR 004 |
| Consequences if not approved: | ⌘ |

| | |
|------------------------------|---|
| Clauses affected: | ⌘ 5.1.1 |
| Other specs affected: | ⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> 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/3G_Specs/CRs.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://www.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 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 **** |
|---|

5 Mobile initiated location services operations

5.1 Mobile Originated Location Request (MO-LR)

5.1.1 Normal operation

The MS invokes a MO-LR by sending a REGISTER message to the network containing a LCS-MOLR invoke component. In UMTS, the gpsAssistanceData and deCipheringKeys shall not be used as values of molr-Type parameter.

The receiving network entity shall initiate the handling of location request in the network. The network shall pass the result of the location procedure to the MS by sending a FACILITY message to the MS containing a LCS-MOLR return result component.

The network shall pass the result of the location procedure to the MS only if the location estimate is given in a format that the MS supports, as indicated by either the presence (and content) or the absence of the parameter supportedGADShapes, which may be sent by the MS in the LCS-MOLR operation.

The MS may terminate the dialogue by sending a RELEASE COMPLETE message in the case of single location request (see figure 5.1). The MS may also initiate another location request operation by sending a FACILITY message to the network containing a LCS-MOLR invoke component (see figure 5.2). After the last location request operation the MS shall terminate the dialogue by sending a RELEASE COMPLETE message.

If the network is unable to successfully fulfil the request received from the MS (e.g. to provide a location estimate or location assistance information), it shall clear the transaction by sending a RELEASE COMPLETE message containing a return error component. Error values are specified in 3G TS 24.080. If the network is unable to provide a location estimate due to lack of support in the MS for the type of shape of the location estimate, then it shall use the error Facility Not Supported. ~~The network shall pass the result of the location procedure to the MS only if the location estimate is given in a format that the MS supports, as indicated by either the presence (and content) or the absence of the parameter supportedGADShapes, which may be sent by the MS in the LCS-MOLR operation.~~

If the network has returned a result to the MS in a FACILITY message but, after some PLMN administered time period has elapsed, has not received either a new location request operation in a FACILITY message or a RELEASE COMPLETE message from the MS, the network may clear the transaction by sending a RELEASE COMPLETE message.

If the network has returned a result to the MS in a FACILITY message but, after some PLMN administered time period has elapsed, has not received either a new location request operation in a FACILITY message or a RELEASE COMPLETE message from the MS, the network may clear the transaction by sending a RELEASE COMPLETE message.

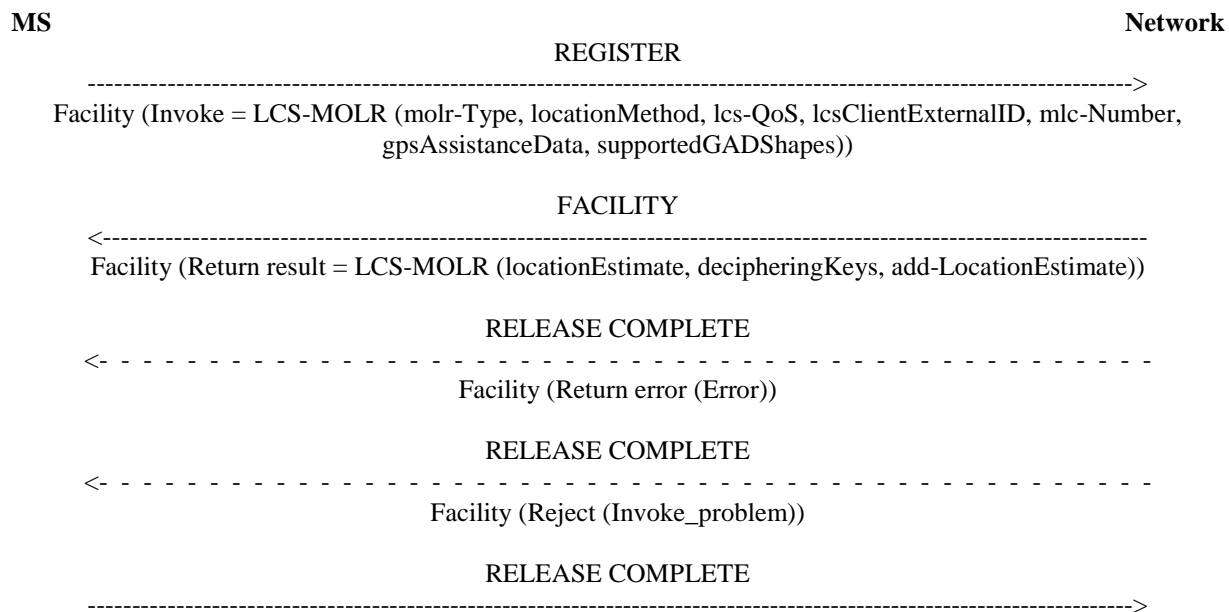


Figure 5.1: Single mobile originated location request

MS

Network

REGISTER

----->
 Facility (Invoke = LCS-MOLR (molr-Type, locationMethod, lcs-QoS, lcsClientExternalID, mlc-Number, gpsAssistanceData, supportedGADShapes, add-LocationEstimate))

FACILITY

<-----
 Facility (Return result = LCS-MOLR (locationEstimate, decipheringKeys, add-LocationEstimate))

RELEASE COMPLETE

<- - - - -
 Facility (Return error (Error))

RELEASE COMPLETE

<- - - - -
 Facility (Reject (Invoke_problem))

FACILITY

----->
 Facility (Invoke = LCS-MOLR (molr-Type, locationMethod, lcs-QoS, lcsClientExternalID, mlc-Number, gpsAssistanceData, supportedGADShapes))

FACILITY

<-----
 Facility (Return result = LCS-MOLR (locationEstimate, decipheringKeys, add-LocationEstimate, supportedGADShapes))

RELEASE COMPLETE

<- - - - -
 Facility (Return error (Error))

RELEASE COMPLETE

<- - - - -
 Facility (Reject (Invoke_problem))

RELEASE COMPLETE

----->

Figure 5.2: Multiple mobile originated location requests

.... Text removed for clarity

*** END OF MODIFICATIONS ***

CHANGE REQUEST

⌘ **29.002 CR 319** ⌘ rev **-** ⌘ Current version: **3.10.0** ⌘

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

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

| | | | |
|------------------------|--|-----------------|---|
| Title: | ⌘ Correct length of Add-GeographicalInformation | | |
| Source: | ⌘ CN4 | | |
| Work item code: | ⌘ LCS | Date: | ⌘ 14/9/2001 |
| Category: | ⌘ F (Agreed by Consensus) | Release: | ⌘ R99 |
| | <i>Use one of the following categories:</i> 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. | | <i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5) |

| | |
|--------------------------------------|--|
| Reason for change: | ⌘ A polygon shape with 15 points cannot be encoded in Add-GeographicalInformation. Only polygons with upto 14 points are supported by MAP. CR 263r3 Tdoc N4-010786 presented in CN4#8 in Puerto Rico introduced this parameter but unfortunately made a mistake on the needed size of Add-GeographicalInformation. |
| Summary of change: | ⌘ Change the max length of Add-GeographicalInformation from 90 to 91 |
| Consequences if not approved: | ⌘ If a location estimate is generate by SMLC / RNC in the shape of Polygon with 15 points, then the MSC will not be able to report it to the GMLC via ProvideSubscriberLocation-res or SubscriberLocationReport. |

| | | | |
|------------------------------|---|---|--|
| Clauses affected: | ⌘ 17.7.13 | | |
| Other specs affected: | ⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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 ******

17.7.13 Location service data types

... Text removed for clarity

```
maxAdd-GeographicalInformation INTEGER ::= 9091
-- the maximum length allows support for all the shapes currently defined in 3G TS 23.032
```

... Text removed for clarity

****** END OF MODIFICATIONS ******

CHANGE REQUEST

⌘ **29.002 CR 320** ⌘ rev **-** ⌘ Current version: **4.5.0** ⌘

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

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

| | | | |
|---|---|--|-------------|
| Title: | ⌘ Correct length of Add-GeographicalInformation | | |
| Source: | ⌘ CN4 | | |
| Work item code: | ⌘ LCS | Date: | ⌘ 14/9/2001 |
| Category: | ⌘ A | Release: | ⌘ REL-4 |
| <p>Use <u>one</u> of the following categories:</p> <p>F (correction) A (corresponds to a correction in an earlier release) B (Addition of feature), C (Functional modification of feature) D (Editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> | | <p>Use <u>one</u> of the following releases:</p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p> | |

| | | | |
|--------------------------------------|--|--|--|
| Reason for change: | ⌘ A polygon shape with 15 points cannot be encoded in Add-GeographicalInformation. Only polygons with upto 14 points are supported by MAP. CR 264r3 Tdoc N4-010787 presented in CN4#8 in Puerto Rico introduced this parameter but unfortunately made a mistake on the needed size of Add-GeographicalInformation. | | |
| Summary of change: | ⌘ Change the max length of Add-GeographicalInformation from 90 to 91 | | |
| Consequences if not approved: | ⌘ If a location estimate is generate by SMLC / RNC in the shape of Polygon with 15 points, then the MSC will not be able to report it to the GMLC via ProvideSubscriberLocation-res or SubscriberLocationReport. | | |

| | | | |
|------------------------------|---|---|--|
| Clauses affected: | ⌘ 17.7.13 | | |
| Other specs affected: | <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> 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 ******

17.7.13 Location service data types

... Text removed for clarity

```
maxAdd-GeographicalInformation INTEGER ::= 9091
-- the maximum length allows support for all the shapes currently defined in 3G TS 23.032
```

... Text removed for clarity

****** END OF MODIFICATIONS ******

CHANGE REQUEST

⌘ **29.010 CR 042** ⌘ rev **1** ⌘ Current version: **3.6.0*** ⌘

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

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

| | | | |
|------------------------|--|--------------|---|
| Title: | ⌘ Alignment of 29.010 to 25.413 for LCS | | |
| Source: | ⌘ CN4 | | |
| Work item code: | ⌘ LCS | Date: | ⌘ 15/11/2001 |
| Category: | ⌘ F (Agreed by consensus) Use <u>one</u> 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. | | Release: ⌘ R99 Use <u>one</u> of the following releases: 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5) |

| | | | |
|--------------------------------------|---|--|--|
| Reason for change: | ⌘ With LS S2-013062 SA2 informs RAN3 and CN4 that the "stop reporting" parameter has been removed from the LCS stage 2 specification for rel-99, according to RAN3 decision to not support the parameter over RANAP protocol. Because of this the description of the Aborted Location Acquisition procedure must be lined up to the current status of 25.413. * Note: The relevant sections in 29.010 v3.6.0 have been modified by CR 035r2 agreed at CN4#10 in Brighton (N4-011232).). In other words the baseline is v3.6.0 + CR 35r2. The text given in the CR is taken as basis for the modifications since the CR contains the complete involved sections. | | |
| Summary of change: | ⌘ Remove the RANAP message Location Reporting Control in the abortion procedures after a G2U inter-msc Handover and after an SRNS Relocation. | | |
| Consequences if not approved: | ⌘ Inconsistent 23.171, 25.413 and 29.010. Non existing parameters referred to in 29.010. | | |

| | | | |
|------------------------------|---|---|--|
| Clauses affected: | ⌘ 4.9.3.2, 4.9.3.4 | | |
| Other specs affected: | ⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications | ⌘ | |
| Other comments: | ⌘ * Note to the Editor: care has to be taken in order to implement first CR 035r2 and only then this CR.). In other words the baseline is v3.6.0 + CR 35r2. | | |

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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** ****

4.9.3.2 Inter-MSC Handover (GSM to UMTS)

When for any reason the on going location acquisition procedure needs to be aborted, the anchor MSC sends the BSSMAP message Perform Location Abort over the E-interface.

Figure 66 shows the signalling for an aborted Location Acquisition procedure.

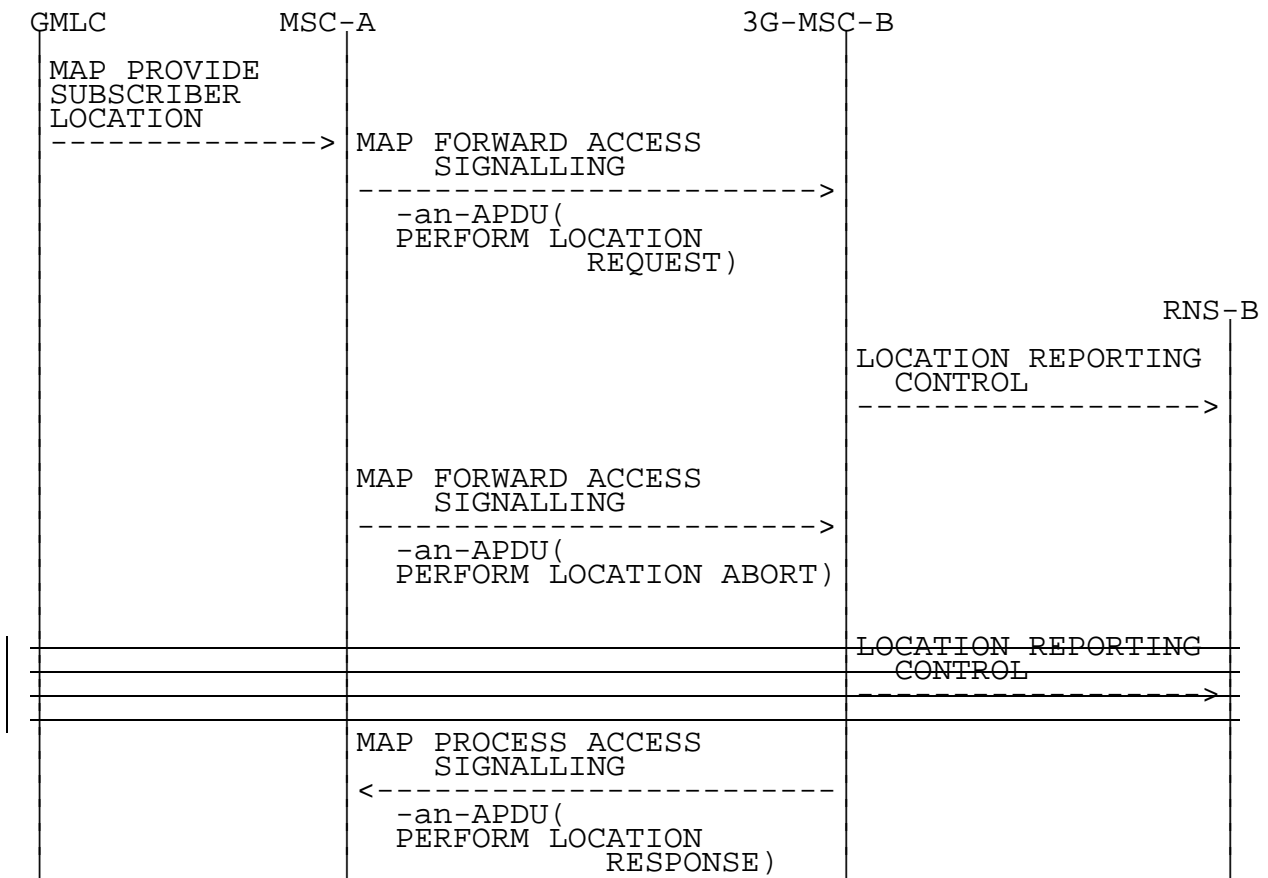


Figure 66: Signalling for an aborted Location Acquisition procedure

The interworking between the BSSMAP location acquisition messages in MAP and the RANAP location reporting messages is as follows:

| | 29.002 | 25.413 | Notes |
|-----------------|--|--|-------|
| Forward message | MAP FORWARD ACCESS SIG. request | LOCATION REPORTING CONTROL | |
| | -an APDU(PERFORM LOCATION ABORT) | | |
| | BSSMAP information elements: | RANAP information elements: | |
| | LCS Cause | Request Type >Event = Stop >Report Area = Geo. Coord. | |
| Result | MAP PROCESS ACCESS SIG. request | | 1 |
| | an APDU(PERFORM LOCATION RESPONSE) | | |
| | BSSMAP information elements: | | |
| | LCS Cause | | |

NOTE 1: PERFORM LOCATION RESPONSE with LCS cause shall be generated by 3G-MSC B.

**** NEXT MODIFIED SECTION ****

**** Last New Sections ****

4.9.3.4 Void

4.9.3.4 ~~Inter-MS-C SRNS Relocation~~

~~When for any reason the on-going location acquisition procedure needs to be aborted, the anchor 3G-MSC sends the RANAP message Location Reporting Control over the E-interface.~~

~~Figure 66c shows the signalling for an aborted Location Acquisition procedure.~~

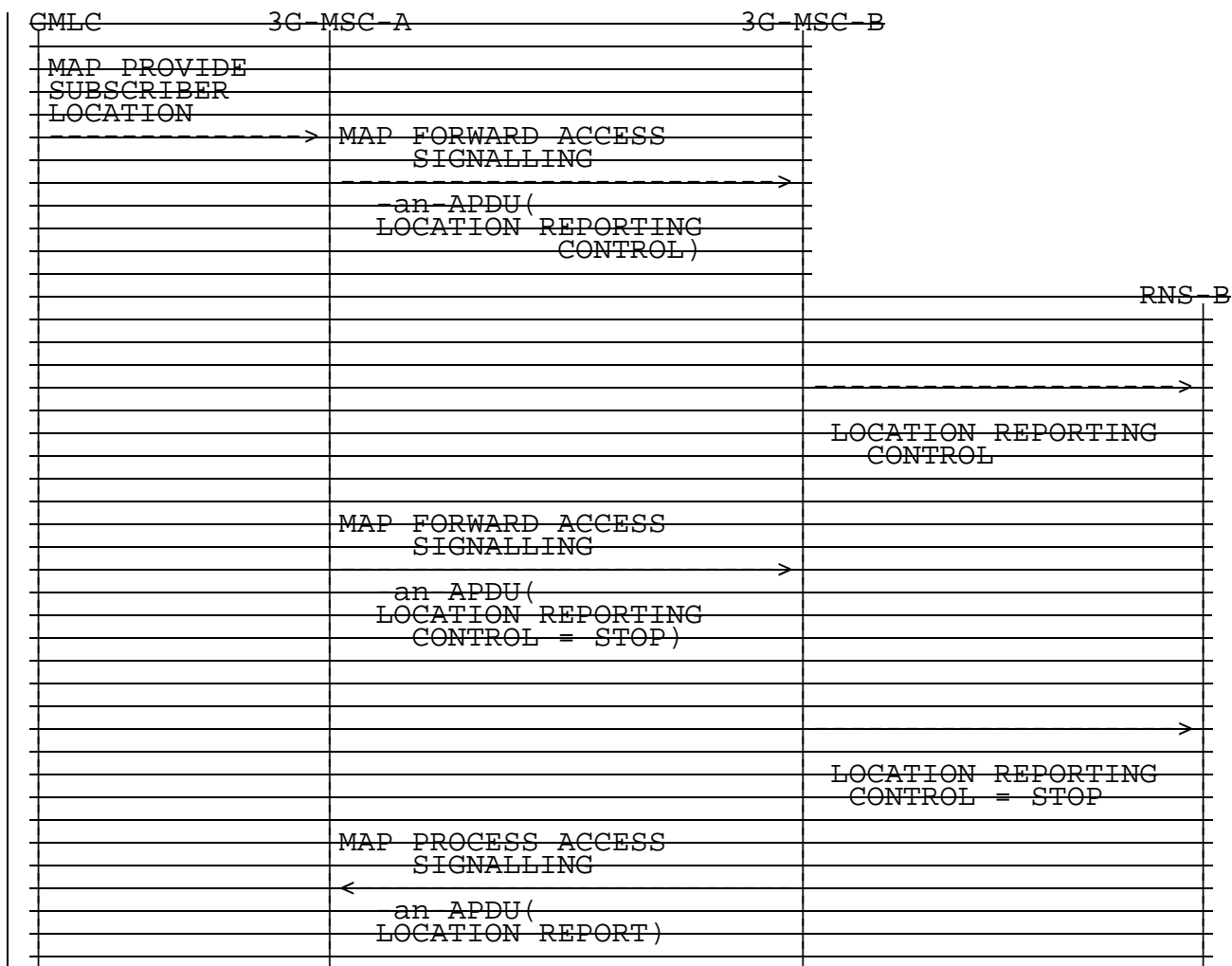


Figure 66c: Signalling for an aborted Location Acquisition procedure

*** END OF MODIFICATIONS ***