

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

NP-010611

Source: TSG CN WG4
Title: CRs on R99 Handover
Agenda item: 7.14
Document for: APPROVAL

Introduction:

This document contains 12 CRs on R99 Work Item "Handover", 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
29.002	321		N4-011090	R99	Clarify encoding of RNC Id	F	3.10.0
29.002	322		N4-011091	Rel-4	Clarify encoding of RNC Id	A	4.5.0
29.002	323		N4-011093	R99	Clarify encoding of RANAP parameters in MAP	F	3.10.0
29.002	324		N4-011094	Rel-4	Clarify encoding of RANAP parameters in MAP	A	4.5.0
29.010	039		N4-011095	R99	Global replace of BSS-APDU with AN-APDU	F	3.6.0
29.010	040		N4-011096	Rel-4	Global replace of BSS-APDU with AN-APDU	A	4.1.0
29.002	335		N4-011174	R99	Correction to the Allowed GSM Algorithms parameter	F	3.10.0
29.002	336		N4-011175	Rel-4	Correction to the Allowed GSM Algorithms parameter	A	4.5.0
29.010	035	2	N4-011232	R99	LCS/HO Location Reporting – GSM to GSM, UMTS to GSM and UMTS to UMTS	F	3.6.0
29.010	036	2	N4-011233	Rel-4	LCS/HO Location Reporting – GSM to GSM, UMTS to GSM and UMTS to UMTS	A	4.1.0
29.002	353	1	N4-011432	R99	Minimum MAP application context for G2G inter-MSC handover	F	3.10.0
29.002	354	1	N4-011433	Rel-4	Minimum MAP application context for G2G inter-MSC handover	A	4.5.0

CHANGE REQUEST

⌘ **29.002 CR 321** ⌘ 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:	⌘ Clarify encoding of RNC Id		
Source:	⌘ Ericsson		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
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:	⌘ From the description of the encoding of the data type RNC Id it's not really clear what has to be filled in in what octets. A more detailed description, in line with GlobalCellId or with CellGlobalIdOrServiceAreaIdFixedLength, is needed in order to avoid any misinterpretation.
Summary of change:	⌘ Detail the description of the encoding of RNCId
Consequences if not approved:	⌘ Different interpretation of the encoding of RNC Id which can lead to interoperability problems in case of "inter-vendor" inter-msc Handover

Clauses affected:	⌘ 17.7.1		
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 ******

17.7.1 Mobile Service data types

.... Text removed for clarity

```

RNCid ::= OCTET STRING (SIZE (7))
-- Refers to the Target RNC ID in the Target ID in 3G TS 25.413.
-- The internal structure is defined as follows:
-- octet 1 bits 4321      Mobile Country Code 1st digit
--          bits 8765      Mobile Country Code 2nd digit
-- octet 2 bits 4321      Mobile Country Code 3rd digit
--          bits 8765      Mobile Network Code 3rd digit
--                               or filler (1111) for 2 digit MNCs
-- octet 3 bits 4321      Mobile Network Code 1st digit
--          bits 8765      Mobile Network Code 2nd digit
-- PLMN ID      3 octets
-- octets 4 and 5      Location Area Code according to 3G TS 24.008
-- LAC          2 octets
-- octets 6 and 7      RNC Id value according to 3G TS 25.413
-- RNC ID      2 octets
    
```

.... Text removed for clarity

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

CHANGE REQUEST

⌘ **29.002 CR 322** ⌘ 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:	⌘ Clarify encoding of RNC Id		
Source:	⌘ Ericsson		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
Category:	⌘ A	Release:	⌘ REL-4
	<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:	⌘ From the description of the encoding of the data type RNC Id it's not really clear what has to be filled in in what octets. A more detailed description, in line with GlobalCellId or with CellGlobalIdOrServiceAreaIdFixedLength, is needed in order to avoid any misinterpretation.
Summary of change:	⌘ Detail the description of the encoding of RNCId
Consequences if not approved:	⌘ Different interpretation of the encoding of RNC Id which can lead to interoperability problems in case of "inter-vendor" inter-msc Handover

Clauses affected:	⌘ 17.7.1		
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 ******

17.7.1 Mobile Service data types

.... Text removed for clarity

```

RNCid ::= OCTET STRING (SIZE (7))
-- Refers to the Target RNC ID in the Target ID in 3G TS 25.413.
-- The internal structure is defined as follows:
-- octet 1 bits 4321      Mobile Country Code 1st digit
--          bits 8765      Mobile Country Code 2nd digit
-- octet 2 bits 4321      Mobile Country Code 3rd digit
--          bits 8765      Mobile Network Code 3rd digit
--                               or filler (1111) for 2 digit MNCs
-- octet 3 bits 4321      Mobile Network Code 1st digit
--          bits 8765      Mobile Network Code 2nd digit
-- PLMN ID      3 octets
-- octets 4 and 5      Location Area Code according to 3G TS 24.008
-- LAC          2 octets
-- octets 6 and 7      RNC Id value according to 3G TS 25.413
-- RNC ID      2 octets

```

.... Text removed for clarity

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

CHANGE REQUEST

⌘ **29.002 CR 323** ⌘ 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:	⌘ Clarify encoding of RANAP parameters in MAP		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
Category:	⌘ F (Critical correction)	Release:	⌘ R99
	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)		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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ There's no clear specification of what is the encoding of the RANAP parameters included the some corresponding MAP container parameters defined as octet string. This situation can lead to different interpretation and consequently different encoding, causing possible misalignment in case of Inter-MSC Handover between different vendors core network nodes.
Summary of change:	⌘ Detail the description of the encoding of the RANAP parameters contained in MAP octet strings.
Consequences if not approved:	⌘ Different interpretation of the encoding of RANAP parameters in MAP which can lead to interoperability problems in case of "inter-vendor" inter-msc Handover

Clauses affected:	⌘ 17.7.1		
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 ****

17.7.1 Mobile Service data types

... Text removed for clarity

-- handover types

```
ForwardAccessSignalling-Arg ::= [3] SEQUENCE {
  an-APDU                AccessNetworkSignalInfo,
  integrityProtectionInfo [0] IntegrityProtectionInformation OPTIONAL,
  encryptionInfo         [1] EncryptionInformation           OPTIONAL,
  keyStatus              [2] KeyStatus                       OPTIONAL,
  allowedGSM-Algorithms  [4] AllowedGSM-Algorithms          OPTIONAL,
  allowedUMTS-Algorithms [5] AllowedUMTS-Algorithms        OPTIONAL,
  radioResourceInformation [6] RadioResourceInformation     OPTIONAL,
  extensionContainer      [3] ExtensionContainer            OPTIONAL,
  ...}
```

```
AllowedGSM-Algorithms ::= OCTET STRING (SIZE (1))
-- internal structure is coded as Algorithm identifier octet from
-- Permitted Algorithms defined in GSM 08.08
-- A node shall mark all GSM algorithms that are allowed in MSC-B
```

```
AllowedUMTS-Algorithms ::= SEQUENCE {
  integrityProtectionAlgorithms [0] PermittedIntegrityProtectionAlgorithms
  OPTIONAL,
  encryptionAlgorithms         [1] PermittedEncryptionAlgorithms OPTIONAL,
  extensionContainer            [2] ExtensionContainer           OPTIONAL,
  ...}
```

```
PermittedIntegrityProtectionAlgorithms ::=
  OCTET STRING (SIZE (1..maxPermittedIntegrityProtectionAlgorithmsLength))
-- Octets contain a complete PermittedIntegrityProtectionAlgorithms data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to Permitted Integrity Protection Algorithms in Integrity
-- Protection Information information element in 3G TS 25.413
```

```
maxPermittedIntegrityProtectionAlgorithmsLength INTEGER ::= 9
```

```
PermittedEncryptionAlgorithms ::=
  OCTET STRING (SIZE (1..maxPermittedEncryptionAlgorithmsLength))
-- Octets contain a complete PermittedEncryptionAlgorithms data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to Permitted Encryption Algorithms in Encryption
-- Information information element in 3G TS 25.413
```

```
maxPermittedEncryptionAlgorithmsLength INTEGER ::= 9
```

```

KeyStatus ::= ENUMERATED {
    old (0),
    new (1),
    ...}
-- exception handling:
-- received values in range 2-31 shall be treated as "old"
-- received values greater than 31 shall be treated as "new"

```

```

PrepareHO-Arg ::= [3] SEQUENCE {
    targetCellId                [0] GlobalCellId                OPTIONAL,
    ho-NumberNotRequired        NULL                        OPTIONAL,
    targetRNCId                 [1] RNCId                        OPTIONAL,
    an-APDU                     [2] AccessNetworkSignalInfo    OPTIONAL,
    multipleBearerRequested     [3] NULL                        OPTIONAL,
    imsi                        [4] IMSI                        OPTIONAL,
    integrityProtectionInfo     [5] IntegrityProtectionInformation OPTIONAL,
    encryptionInfo              [6] EncryptionInformation      OPTIONAL,
    radioResourceInformation     [7] RadioResourceInformation   OPTIONAL,
    allowedGSM-Algorithms       [9] AllowedGSM-Algorithms      OPTIONAL,
    allowedUMTS-Algorithms      [10] AllowedUMTS-Algorithms    OPTIONAL,
    radioResourceList           [11] RadioResourceList          OPTIONAL,
    extensionContainer          [8] ExtensionContainer          OPTIONAL,
    ...}

```

```

RadioResourceList ::= SEQUENCE SIZE (2.. maxNumOfRadioResources) OF
    RadioResource

```

```

RadioResource ::= SEQUENCE {
    radioResourceInformation    RadioResourceInformation,
    rab-Id                      RAB-Id,
    -- RAB Identity is needed to relate the radio resources with the radio access bearers.
    ...}

```

```

maxNumOfRadioResources INTEGER ::= 7

```

```

PrepareHO-Res ::= [3] SEQUENCE {
    handoverNumber              [0] ISDN-AddressString          OPTIONAL,
    relocationNumberList        [1] RelocationNumberList        OPTIONAL,
    an-APDU                     [2] AccessNetworkSignalInfo    OPTIONAL,
    multicallBearerInfo         [3] MulticallBearerInfo          OPTIONAL,
    multipleBearerNotSupported  NULL                        OPTIONAL,
    selectedUMTS-Algorithms     [5] SelectedUMTS-Algorithms     OPTIONAL,
    chosenRadioResourceInformation [6] ChosenRadioResourceInformation OPTIONAL,
    extensionContainer           [4] ExtensionContainer          OPTIONAL,
    ...}

```

```

SelectedUMTS-Algorithms ::= SEQUENCE {
    integrityProtectionAlgorithm [0] ChosenIntegrityProtectionAlgorithm OPTIONAL,
    encryptionAlgorithm         [1] ChosenEncryptionAlgorithm   OPTIONAL,
    extensionContainer           [2] ExtensionContainer           OPTIONAL,
    ...}

```

```

ChosenIntegrityProtectionAlgorithm ::= OCTET STRING (SIZE (1))
-- Octet contains a complete IntegrityProtectionAlgorithm data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included in the least significant bits.
-- Octet is coded according to 3G TS 25.413

```

```

ChosenEncryptionAlgorithm ::= OCTET STRING (SIZE (1))
-- Octet contains a complete EncryptionAlgorithm data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included in the least significant bits.
-- Octet is coded according to 3G TS 25.413

```

```

ChosenRadioResourceInformation ::= SEQUENCE {
    chosenChannelInfo           [0] ChosenChannelInfo           OPTIONAL,
    chosenSpeechVersion         [1] ChosenSpeechVersion          OPTIONAL,
    ...}

```



```

ChosenChannelInfo ::= OCTET STRING (SIZE (2))
  -- Octets are coded according the Chosen Channel information element in GSM 08.08

```

```

ChosenSpeechVersion ::= OCTET STRING (SIZE (2))
  -- Octets are coded according the Speech Version (chosen) information element in GSM
  -- 08.08

```

```

PrepareSubsequentHO-Arg ::= [3] SEQUENCE {
  targetCellId           [0] GlobalCellId           OPTIONAL,
  targetMSC-Number       [1] ISDN-AddressString,
  targetRNCId            [2] RNCId                 OPTIONAL,
  an-APDU                [3] AccessNetworkSignalInfo OPTIONAL,
  selectedRab-Id         [4] RAB-Id                 OPTIONAL,
  extensionContainer      [5] ExtensionContainer     OPTIONAL,
  ...}

```

```

PrepareSubsequentHO-Res ::= [3] SEQUENCE {
  an-APDU                AccessNetworkSignalInfo,
  extensionContainer      [0] ExtensionContainer     OPTIONAL,
  ...}

```

```

ProcessAccessSignalling-Arg ::= [3] SEQUENCE {
  an-APDU                AccessNetworkSignalInfo,
  selectedUMTS-Algorithms [1] SelectedUMTS-Algorithms OPTIONAL,
  selectedGSM-Algorithm  [2] SelectedGSM-Algorithm  OPTIONAL,
  chosenRadioResourceInformation [3] ChosenRadioResourceInformation OPTIONAL,
  selectedRab-Id         [4] RAB-Id                 OPTIONAL,
  extensionContainer      [0] ExtensionContainer     OPTIONAL,
  ...}

```

```

SelectedGSM-Algorithm ::= OCTET STRING (SIZE (1))
  -- internal structure is coded as Algorithm identifier octet from Chosen Encryption
  -- Algorithm defined in GSM 08.08
  -- A node shall mark only the selected GSM algorithm

```

```

SendEndSignal-Arg ::= [3] SEQUENCE {
  an-APDU                AccessNetworkSignalInfo,
  extensionContainer      [0] ExtensionContainer     OPTIONAL,
  ...}

```

```

SendEndSignal-Res ::= SEQUENCE {
  extensionContainer      [0] ExtensionContainer     OPTIONAL,
  ...}

```

```

RNCId ::= OCTET STRING (SIZE (7))
  -- Refers to the Target RNC-ID in the Target ID in 3G TS 25.413.
  -- The internal structure is defined as follows:
  -- PLMN-ID   3 octets
  -- LAC       2 octets
  -- RNC-ID    2 octets

```

```

RelocationNumberList ::= SEQUENCE SIZE (1..maxNumOfRelocationNumber) OF
  RelocationNumber

```

```

MulticallBearerInfo ::= INTEGER (1..maxNumOfRelocationNumber)

```

```

RelocationNumber ::= SEQUENCE {
  handoverNumber          ISDN-AddressString,
  rab-Id                  RAB-Id,
  -- RAB Identity is needed to relate the calls with the radio access bearers.
  ...}

```

```

RAB-Id ::= INTEGER (1..maxNrOfRABs)

```

```

maxNrOfRABs INTEGER ::= 255

```

```

maxNumOfRelocationNumber INTEGER ::= 7

```

```

RadioResourceInformation ::= OCTET STRING (SIZE (5..15))
  -- Octets are coded according the Channel Type information element in GSM 08.08

```

```
IntegrityProtectionInformation ::= OCTET STRING (SIZE (18..maxNumOfIntegrityInfo))
-- Octets contain a complete IntegrityProtectionInformation data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to 3G TS 25.413
```

```
maxNumOfIntegrityInfo INTEGER ::= 100
```

```
EncryptionInformation ::= OCTET STRING (SIZE (18..maxNumOfEncryptionInfo))
-- Octets contain a complete EncryptionInformation data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to 3G TS 25.413
```

```
maxNumOfEncryptionInfo INTEGER ::= 100
```

.... Text removed for clarity

*** END OF MODIFICATIONS ***

CR-Form-v4

CHANGE REQUEST

⌘ **29.002 CR 324** ⌘ 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:	⌘ Clarify encoding of RANAP parameters in MAP		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
Category:	⌘ A	Release:	⌘ REL-4
	<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:	⌘ There's no clear specification of what is the encoding of the RANAP parameters included the some corresponding MAP container parameters defined as octet string. This situation can lead to different interpretation and consequently different encoding, causing possible misalignment in case of Inter-MSC Handover between different vendors core network nodes.
Summary of change:	⌘ Detail the description of the encoding of the RANAP parameters contained in MAP octet strings.
Consequences if not approved:	⌘ Different interpretation of the encoding of RANAP parameters in MAP which can lead to interoperability problems in case of "inter-vendor" inter-msc Handover

Clauses affected:	⌘ 17.7.1		
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 ****

17.7.1 Mobile Service data types

... Text removed for clarity

-- handover types

```
ForwardAccessSignalling-Arg ::= [3] SEQUENCE {
  an-APDU                               AccessNetworkSignalInfo,
  integrityProtectionInfo                [0] IntegrityProtectionInformation OPTIONAL,
  encryptionInfo                        [1] EncryptionInformation          OPTIONAL,
  keyStatus                             [2] KeyStatus                    OPTIONAL,
  allowedGSM-Algorithms                  [4] AllowedGSM-Algorithms          OPTIONAL,
  allowedUMTS-Algorithms                 [5] AllowedUMTS-Algorithms        OPTIONAL,
  radioResourceInformation               [6] RadioResourceInformation    OPTIONAL,
  extensionContainer                     [3] ExtensionContainer          OPTIONAL,
  ...}
```

```
AllowedGSM-Algorithms ::= OCTET STRING (SIZE (1))
-- internal structure is coded as Algorithm identifier octet from
-- Permitted Algorithms defined in 3G TS 48.008
-- A node shall mark all GSM algorithms that are allowed in MSC-B
```

```
AllowedUMTS-Algorithms ::= SEQUENCE {
  integrityProtectionAlgorithms          [0] PermittedIntegrityProtectionAlgorithms
  OPTIONAL,
  encryptionAlgorithms                  [1] PermittedEncryptionAlgorithms OPTIONAL,
  extensionContainer                     [2] ExtensionContainer          OPTIONAL,
  ...}
```

```
PermittedIntegrityProtectionAlgorithms ::=
  OCTET STRING (SIZE (1..maxPermittedIntegrityProtectionAlgorithmsLength))
-- Octets contain a complete PermittedIntegrityProtectionAlgorithms data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413.
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to Permitted Integrity Protection Algorithms in Integrity
-- Protection Information information element in 3G TS 25.413
```

```
maxPermittedIntegrityProtectionAlgorithmsLength INTEGER ::= 9
```

```
PermittedEncryptionAlgorithms ::=
  OCTET STRING (SIZE (1..maxPermittedEncryptionAlgorithmsLength))
-- Octets contain a complete PermittedEncryptionAlgorithms data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to Permitted Encryption Algorithms in Encryption
-- Information information element in 3G TS 25.413
```

```
maxPermittedEncryptionAlgorithmsLength INTEGER ::= 9
```

```

KeyStatus ::= ENUMERATED {
    old (0),
    new (1),
    ...}
-- exception handling:
-- received values in range 2-31 shall be treated as "old"
-- received values greater than 31 shall be treated as "new"

```

```

PrepareHO-Arg ::= [3] SEQUENCE {
    targetCellId                [0] GlobalCellId                OPTIONAL,
    ho-NumberNotRequired        NULL                        OPTIONAL,
    targetRNCId                 [1] RNCId                        OPTIONAL,
    an-APDU                     [2] AccessNetworkSignalInfo    OPTIONAL,
    multipleBearerRequested     [3] NULL                        OPTIONAL,
    imsi                        [4] IMSI                        OPTIONAL,
    integrityProtectionInfo     [5] IntegrityProtectionInformation OPTIONAL,
    encryptionInfo              [6] EncryptionInformation      OPTIONAL,
    radioResourceInformation     [7] RadioResourceInformation   OPTIONAL,
    allowedGSM-Algorithms       [9] AllowedGSM-Algorithms      OPTIONAL,
    allowedUMTS-Algorithms      [10] AllowedUMTS-Algorithms    OPTIONAL,
    radioResourceList           [11] RadioResourceList         OPTIONAL,
    extensionContainer           [8] ExtensionContainer         OPTIONAL,
    ...}

```

```

RadioResourceList ::= SEQUENCE SIZE (2.. maxNumOfRadioResources) OF
    RadioResource

```

```

RadioResource ::= SEQUENCE {
    radioResourceInformation    RadioResourceInformation,
    rab-Id                     RAB-Id,
    -- RAB Identity is needed to relate the radio resources with the radio access bearers.
    ...}

```

```

maxNumOfRadioResources INTEGER ::= 7

```

```

PrepareHO-Res ::= [3] SEQUENCE {
    handoverNumber              [0] ISDN-AddressString        OPTIONAL,
    relocationNumberList        [1] RelocationNumberList      OPTIONAL,
    an-APDU                     [2] AccessNetworkSignalInfo    OPTIONAL,
    multicallBearerInfo         [3] MulticallBearerInfo        OPTIONAL,
    multipleBearerNotSupported  NULL                        OPTIONAL,
    selectedUMTS-Algorithms     [5] SelectedUMTS-Algorithms   OPTIONAL,
    chosenRadioResourceInformation [6] ChosenRadioResourceInformation OPTIONAL,
    extensionContainer          [4] ExtensionContainer         OPTIONAL,
    ...}

```

```

SelectedUMTS-Algorithms ::= SEQUENCE {
    integrityProtectionAlgorithm [0] ChosenIntegrityProtectionAlgorithm OPTIONAL,
    encryptionAlgorithm         [1] ChosenEncryptionAlgorithm  OPTIONAL,
    extensionContainer           [2] ExtensionContainer         OPTIONAL,
    ...}

```

```

ChosenIntegrityProtectionAlgorithm ::= OCTET STRING (SIZE (1))
-- Octet contains a complete IntegrityProtectionAlgorithm data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included in the least significant bits.
-- Octet is coded according to 3G TS 25.413

```

```

ChosenEncryptionAlgorithm ::= OCTET STRING (SIZE (1))
-- Octet contains a complete EncryptionAlgorithm data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included in the least significant bits.
-- Octet is coded according to 3G TS 25.413

```

```

ChosenRadioResourceInformation ::= SEQUENCE {
    chosenChannelInfo           [0] ChosenChannelInfo          OPTIONAL,
    chosenSpeechVersion         [1] ChosenSpeechVersion        OPTIONAL,
    ...}

```

```
ChosenChannelInfo ::= OCTET STRING (SIZE (2))
-- Octets are coded according the Chosen Channel information element in 3G TS 48.008
```

```
ChosenSpeechVersion ::= OCTET STRING (SIZE (2))
-- Octets are coded according the Speech Version (chosen) information element in 3G TS
-- 48.008
```

```
PrepareSubsequentHO-Arg ::= [3] SEQUENCE {
targetCellId [0] GlobalCellId OPTIONAL,
targetMSC-Number [1] ISDN-AddressString,
targetRNCId [2] RNCId OPTIONAL,
an-APDU [3] AccessNetworkSignalInfo OPTIONAL,
selectedRab-Id [4] RAB-Id OPTIONAL,
extensionContainer [5] ExtensionContainer OPTIONAL,
...}
```

```
PrepareSubsequentHO-Res ::= [3] SEQUENCE {
an-APDU AccessNetworkSignalInfo,
extensionContainer [0] ExtensionContainer OPTIONAL,
...}
```

```
ProcessAccessSignalling-Arg ::= [3] SEQUENCE {
an-APDU AccessNetworkSignalInfo,
selectedUMTS-Algorithms [1] SelectedUMTS-Algorithms OPTIONAL,
selectedGSM-Algorithm [2] SelectedGSM-Algorithm OPTIONAL,
chosenRadioResourceInformation [3] ChosenRadioResourceInformation OPTIONAL,
selectedRab-Id [4] RAB-Id OPTIONAL,
extensionContainer [0] ExtensionContainer OPTIONAL,
...}
```

```
SelectedGSM-Algorithm ::= OCTET STRING (SIZE (1))
-- internal structure is coded as Algorithm identifier octet from Chosen Encryption
-- Algorithm defined in 3G TS 48.008
-- A node shall mark only the selected GSM algorithm
```

```
SendEndSignal-Arg ::= [3] SEQUENCE {
an-APDU AccessNetworkSignalInfo,
extensionContainer [0] ExtensionContainer OPTIONAL,
...}
```

```
SendEndSignal-Res ::= SEQUENCE {
extensionContainer [0] ExtensionContainer OPTIONAL,
...}
```

```
RNCId ::= OCTET STRING (SIZE (7))
-- Refers to the Target RNC-ID in the Target ID in 3G TS 25.413.
-- The internal structure is defined as follows:
-- PLMN-ID 3 octets
-- LAC 2 octets
-- RNC-ID 2 octets
```

```
RelocationNumberList ::= SEQUENCE SIZE (1..maxNumOfRelocationNumber) OF
RelocationNumber
```

```
MulticallBearerInfo ::= INTEGER (1..maxNumOfRelocationNumber)
```

```
RelocationNumber ::= SEQUENCE {
handoverNumber ISDN-AddressString,
rab-Id RAB-Id,
-- RAB Identity is needed to relate the calls with the radio access bearers.
...}
```

```
RAB-Id ::= INTEGER (1..maxNrOfRABs)
```

```
maxNrOfRABs INTEGER ::= 255
```

```
maxNumOfRelocationNumber INTEGER ::= 7
```

```
RadioResourceInformation ::= OCTET STRING (SIZE (5..15))
-- Octets are coded according the Channel Type information element in 3G TS 48.008
```

```
IntegrityProtectionInformation ::= OCTET STRING (SIZE (18..maxNumOfIntegrityInfo))
-- Octets contain a complete IntegrityProtectionInformation data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to 3G TS 25.413
```

```
maxNumOfIntegrityInfo INTEGER ::= 100
```

```
EncryptionInformation ::= OCTET STRING (SIZE (18..maxNumOfEncryptionInfo))
-- Octets contain a complete EncryptionInformation data type
-- as defined in 3G TS 25.413, encoded according to the encoding scheme
-- mandated by 3G TS 25.413
-- Padding bits are included, if needed, in the least significant bits of the
-- last octet of the octet string.
-- Octets are coded according to 3G TS 25.413
```

```
maxNumOfEncryptionInfo INTEGER ::= 100
```

.... Text removed for clarity

**** END OF MODIFICATIONS ****

CHANGE REQUEST

⌘ **29.002** **CR 335** ⌘ 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:	⌘ Correction to the Allowed GSM Algorithms parameter		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 8.10.2001
Category:	⌘ F (Essential correction)	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:	⌘ The condition for the inclusion of the parameter Allowed GSM Algorithms is erroneous, the condition that 'MS supports UMTS' should be that 'UE supports GSM'.
Summary of change:	⌘
Consequences if not approved:	⌘ The condition for the parameter is erroneous and may cause misinterpretations.

Clauses affected:	⌘ 8.4.1	
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.

8.4.1 MAP_PREPARE_HANOVER service

8.4.1.1 Definition

This service is used between MSC-A and MSC-B (E-interface) when a call is to be handed over or relocated from MSC-A to MSC-B.

The MAP_PREPARE_HANOVER service is a confirmed service using the primitives from table 8.4/1.

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANOVER

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
Target Cell Id	C	C(=)		
Target RNC Id	C	C(=)		
HO-NumberNotRequired	C	C(=)		
IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see subclause 7.6.1.

Target Cell Id

For definition of this parameter see subclause 7.6.2. This parameter is only included if the service is not in an ongoing transaction. This parameter shall also be excluded if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

Target RNC Id

For definition of this parameter see subclause 7.6.2. This parameter shall be included if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

HO-Number Not Required

For definition of this parameter see subclause 7.6.6.

IMSI

For definition of this parameter see subclause 7.6.2. This UMTS parameter shall be included if:

- it is available and
- if the access network protocol is BSSAP and
- there is an indication that the MS also supports UMTS.

Integrity Protection Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Encryption Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Radio Resource Information

For definition of this parameter see subclause 7.6.6. This GSM parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. If the parameter Radio Resource List is sent , the parameter Radio Resource Information shall not be sent.

AN-APDU

For definition of this parameter see subclause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes allowed GSM algorithms. This GSM parameter shall be included if:

- the service is a part of the Inter-MSC SRNS Relocation procedure and
- Ciphering or Security Mode Setting procedure has been performed.and
- there is an indication that the ~~UEMS~~ also supports ~~GSM~~UMTS.

Allowed UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if all of the following conditions apply:

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and
- Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter Radio Resource Information is sent , the parameter Radio Resource List shall not be sent.

Handover Number

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at handover, unless the parameter HO-NumberNotRequired is sent. If the parameter Handover Number is returned, the parameter Relocation Number List shall not be returned.

Relocation Number List

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation, unless the parameter HO-NumberNotRequired is sent. If the parameter Relocation Number List is returned, the parameter Handover Number shall not be returned.

Multicall Bearer Information

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation in the case that MSC-B supports multiple bearers.

Multiple Bearer Requested

For a definition of this parameter see subclause 7.6.2. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B.

Multiple Bearer Not Supported

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation when MSC-B receives Multiple Bearer Requested parameter and MSC-B does not support multiple bearers.

Selected UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes the UMTS integrity and optionally encryption algorithms selected by RNC under the control of MSC-B. This UMTS parameter shall be included if the service is a part of the inter MSC inter system handover from GSM to UMTS.

Chosen Radio Resource Information

For definition of this parameter see subclause 7.6.6. This parameter shall be returned at relocation if the encapsulated PDU is RANAP RAB Assignment Response and MS is in GSM access.

User error

For definition of this parameter see subclause 7.6.1. The following errors defined in subclause 7.6.1 may be used, depending on the nature of the fault:

- No handover number available.
- Target cell outside group call area;
- System failure.
- Unexpected data value.
- Data Missing.

Provider error

See definition of provider errors in subclause 7.6.1.

CHANGE REQUEST

⌘ **29.002** **CR 336** ⌘ 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:	⌘ Correction to the Allowed GSM Algorithms parameter		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 8.10.2001
Category:	⌘ A	Release:	⌘ Rel-4
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.		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:	⌘ The condition for the inclusion of the parameter Allowed GSM Algorithms is erroneous, the condition that 'MS supports UMTS' should be that 'UE supports GSM'.
Summary of change:	⌘
Consequences if not approved:	⌘ The condition for the parameter is erroneous and may cause misinterpretations.

Clauses affected:	⌘ 8.4.1
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.

8.4.1 MAP_PREPARE_HANOVER service

8.4.1.1 Definition

This service is used between MSC-A and MSC-B (E-interface) when a call is to be handed over or relocated from MSC-A to MSC-B.

The MAP_PREPARE_HANOVER service is a confirmed service using the primitives from table 8.4/1.

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANOVER

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
Target Cell Id	C	C(=)		
Target RNC Id	C	C(=)		
HO-NumberNotRequired	C	C(=)		
IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see subclause 7.6.1.

Target Cell Id

For definition of this parameter see subclause 7.6.2. This parameter is only included if the service is not in an ongoing transaction. This parameter shall also be excluded if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

Target RNC Id

For definition of this parameter see subclause 7.6.2. This parameter shall be included if the service is a part of the Inter-MSC SRNS Relocation procedure or the inter-system handover GSM to UMTS procedure described in 3G TS 23.009.

HO-Number Not Required

For definition of this parameter see subclause 7.6.6.

IMSI

For definition of this parameter see subclause 7.6.2. This UMTS parameter shall be included if:

- it is available and
- if the access network protocol is BSSAP and
- there is an indication that the MS also supports UMTS.

Integrity Protection Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Encryption Information

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if available and if the access network protocol is BSSAP.

Radio Resource Information

For definition of this parameter see subclause 7.6.6. This GSM parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. If the parameter Radio Resource List is sent , the parameter Radio Resource Information shall not be sent.

AN-APDU

For definition of this parameter see subclause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes allowed GSM algorithms. This GSM parameter shall be included if:

- the service is a part of the Inter-MSC SRNS Relocation procedure and
- Ciphering or Security Mode Setting procedure has been performed.and
- there is an indication that the ~~UEMS~~ also supports ~~GSM~~UMTS.

Allowed UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This UMTS parameter shall be included if all of the following conditions apply:

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and
- Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the access network protocol is RANAP and there is an indication that the UE also supports GSM. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter Radio Resource Information is sent , the parameter Radio Resource List shall not be sent.

Handover Number

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at handover, unless the parameter HO-NumberNotRequired is sent. If the parameter Handover Number is returned, the parameter Relocation Number List shall not be returned.

Relocation Number List

For definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation, unless the parameter HO-NumberNotRequired is sent. If the parameter Relocation Number List is returned, the parameter Handover Number shall not be returned.

Multicall Bearer Information

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation in the case that MSC-B supports multiple bearers.

Multiple Bearer Requested

For a definition of this parameter see subclause 7.6.2. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B.

Multiple Bearer Not Supported

For a definition of this parameter see subclause 7.6.2. This parameter shall be returned at relocation when MSC-B receives Multiple Bearer Requested parameter and MSC-B does not support multiple bearers.

Selected UMTS Algorithms

For definition of this parameter see subclause 7.6.6. This parameters includes the UMTS integrity and optionally encryption algorithms selected by RNC under the control of MSC-B. This UMTS parameter shall be included if the service is a part of the inter MSC inter system handover from GSM to UMTS.

Chosen Radio Resource Information

For definition of this parameter see subclause 7.6.6. This parameter shall be returned at relocation if the encapsulated PDU is RANAP RAB Assignment Response and MS is in GSM access.

User error

For definition of this parameter see subclause 7.6.1. The following errors defined in subclause 7.6.1 may be used, depending on the nature of the fault:

- No handover number available.
- Target cell outside group call area;
- System failure.
- Unexpected data value.
- Data Missing.

Provider error

See definition of provider errors in subclause 7.6.1.

CHANGE REQUEST

⌘ **29.002 CR 353** ⌘ rev **1** ⌘ 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:	⌘ Minimum MAP application context for G2G inter-MSC handover		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 01-11-14
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:	⌘ To ensure multi-vendor inter-working for GSM to GSM handover, and to allow subsequent MSC handovers to UMTS a minimum MAP Application Context for the relevant handover operations needs to be defined.
Summary of change:	⌘ Minimum applicable MAP AC for inter-MSC GSM BSS to GSM BSS handover shall be MAP handover AC version 1. Note: If MAP AC version 2 or lower is used, subsequent handover to UTRAN is not possible.
Consequences if not approved:	⌘ The minimum MAP Application Context required to establish Inter MSC handover is not clearly specified which could lead to multi-vendor interworking problems.

Clauses affected:	⌘ 19.2.1		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘ <input type="checkbox"/>	⌘ <input type="checkbox"/>
	<input type="checkbox"/> Test specifications	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/> O&M Specifications	<input type="checkbox"/>	<input type="checkbox"/>
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://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.

19.2 Handover procedure

It should be noted that procedures related to the B-interface have not been updated for Release 99. The B-interface is not fully operational specified. It is strongly recommended not to implement the B-interface as an external interface.

19.2.1 General

The handover or relocation between different MSCs is called Inter-MSC handover. The interfaces involved for Inter-MSC handover are shown in figure 19.2/1. Following two Inter-MSC handover procedures apply:

1) Basic Inter-MSC handover:

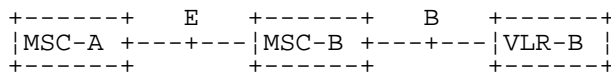
The call is handed over from the controlling MSC, called MSC-A to another MSC, called MSC-B (figure 19.2/1a).

Figure 19.2/2 shows a successful handover between MSC-A and MSC-B including a request for handover number allocation by MSC-B to VLR-B.

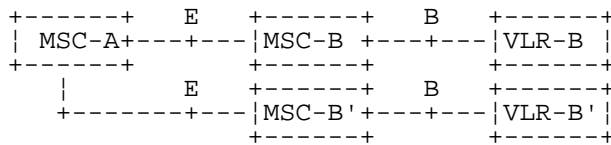
2) Subsequent Inter-MSC handover:

After the call has been handed over from MSC-A to MSC-B, a handover to either MSC-A (figure 19.2/1a) or to a third MSC (MSC-B') (figure 19.2/1b) is necessary in order to continue the connection.

Figure 19.2/3 shows a successful subsequent handover.



a) Basic handover procedure MSC-A to MSC-B and subsequent handover procedure MSC-B to MSC-A.



b) Subsequent handover procedure MSC-B to MSC-B'.

Figure 19.2/1: Interface structure for handover

The MAP handover procedures achieve the functionality required to set up an MSC-MSC dialogue, to optionally allocate a handover number or one or several relocation numbers and to transport BSSAP or RANAP messages.

Minimum applicable MAP AC for intersystem inter-MSC GSM BSS to UTRAN handover shall be MAP handover AC version 3.

Minimum applicable MAP AC for intersystem inter-MSC UTRAN to GSM BSS handover shall be MAP handover AC version 2.

NOTE: If MAP AC version 2 is used, subsequent handover to ~~an MSC~~ UTRAN is not possible.

Minimum applicable MAP AC for inter-MSC GSM BSS to GSM BSS handover should be MAP handover AC version 2.

NOTE: If MAP AC version 2 or lower is used, subsequent handover to UTRAN is not possible.

The transported BSSAP or RANAP messages are controlled and handled by the Handover Control Application in the MSCs. This information will be transparent to the MAP protocol. If the MSC receives via the MAP protocol BSSAP or RANAP messages, this information will be forwarded to the Handover Control Application (shown in the handover SDL diagrams with the internal HO_CA signalling, it is an internal process in the MSC) and vice versa if the Handover Control Application requires the sending of BSSAP or RANAP messages via the MAP protocol.

For detailed interworking between the A-interface and MAP procedures or the Iu-interface and MAP procedures, see 3GPP TS 23.009 and 3GPP TS 29.010.

CHANGE REQUEST

⌘ **29.002 CR 354** ⌘ rev **1** ⌘ 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:	⌘ Minimum MAP application context for G2G inter-MSC handover		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 01-11-14
Category:	⌘ A	Release:	⌘ Rel-4
	<i>Use <u>one</u> 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 <u>one</u> 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:	⌘ To ensure multi-vendor inter-working for GSM to GSM handover, and to allow subsequent MSC handovers to UMTS a minimum MAP Application Context for the relevant handover operations needs to be defined.		
Summary of change:	⌘ Minimum applicable MAP AC for inter-MSC GSM BSS to GSM BSS handover shall be MAP handover AC version 1. Note: If MAP AC version 2 or lower is used, subsequent handover to UTRAN is not possible.		
Consequences if not approved:	⌘ The minimum MAP Application Context required to establish Inter MSC handover is not clearly specified which could lead to multi-vendor interworking problems.		

Clauses affected:	⌘ 19.2.1		
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://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.

19.2 Handover procedure

It should be noted that procedures related to the B-interface have not been updated for Release 99. The B-interface is not fully operational specified. It is strongly recommended not to implement the B-interface as an external interface.

19.2.1 General

The handover or relocation between different MSCs is called Inter-MSC handover. The interfaces involved for Inter-MSC handover are shown in figure 19.2/1. Following two Inter-MSC handover procedures apply:

1) Basic Inter-MSC handover:

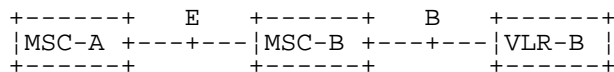
The call is handed over from the controlling MSC, called MSC-A to another MSC, called MSC-B (figure 19.2/1a).

Figure 19.2/2 shows a successful handover between MSC-A and MSC-B including a request for handover number allocation by MSC-B to VLR-B.

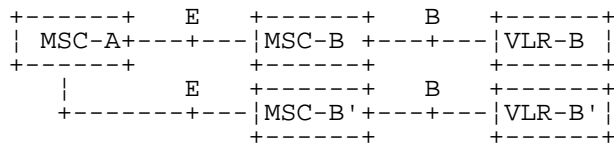
2) Subsequent Inter-MSC handover:

After the call has been handed over from MSC-A to MSC-B, a handover to either MSC-A (figure 19.2/1a) or to a third MSC (MSC-B') (figure 19.2/1b) is necessary in order to continue the connection.

Figure 19.2/3 shows a successful subsequent handover.



a) Basic handover procedure MSC-A to MSC-B and subsequent handover procedure MSC-B to MSC-A.



b) Subsequent handover procedure MSC-B to MSC-B'.

Figure 19.2/1: Interface structure for handover

The MAP handover procedures achieve the functionality required to set up an MSC-MSC dialogue, to optionally allocate a handover number or one or several relocation numbers and to transport BSSAP or RANAP messages.

Minimum applicable MAP AC for intersystem inter-MSC GSM BSS to UTRAN handover shall be MAP handover AC version 3.

Minimum applicable MAP AC for intersystem inter-MSC UTRAN to GSM BSS handover shall be MAP handover AC version 2.

NOTE: If MAP AC version 2 is used, subsequent handover to ~~an MSC~~-UTRAN is not possible.

Minimum applicable MAP AC for inter-MSC GSM BSS to GSM BSS handover should be MAP handover AC version 2.

NOTE: If MAP AC version 2 or lower is used, subsequent handover to UTRAN is not possible.

The transported BSSAP or RANAP messages are controlled and handled by the Handover Control Application in the MSCs. This information will be transparent to the MAP protocol. If the MSC receives via the MAP protocol BSSAP or RANAP messages, this information will be forwarded to the Handover Control Application (shown in the handover SDL diagrams with the internal HO_CA signalling, it is an internal process in the MSC) and vice versa if the Handover Control Application requires the sending of BSSAP or RANAP messages via the MAP protocol.

For detailed interworking between the A-interface and MAP procedures or the Iu-interface and MAP procedures, see 3GPP TS 23.009 and 3GPP TS 29.010.

CHANGE REQUEST

⌘ **29.010 CR 035** ⌘ rev **2** ⌘ 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: ⌘ LCS/HO Location Reporting – GSM to GSM, UMTS to GSM and UMTS to UMTS

Source: ⌘ Lucent Technologies, L.M. Ericsson

Work item code: ⌘ Handover **Date:** ⌘ 27 September 2001

Category: ⌘ **F** Essential Correction **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)

Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

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

Reason for change: ⌘ In case of completed GSM to GSM inter MSC handover, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The 3G-MSC must forward the request to the non-anchor MSC by encapsulating BSSMAP messages on the E-interface.

In case of completed UMTS to GSM inter MSC handover, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The 3G-MSC must forward the request to the non-anchor MSC by encapsulating BSSMAP messages on the E-interface.

In case of a completed UMTS to UMTS SRNSrelocation, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The anchor 3G-MSC must forward the request to the non-anchor 3G-MSC by encapsulating RANAP messages on the E-interface.

Summary of change: ⌘ Add signalling diagrams for GMLC to MSC to MSC case, GMLC to 3G-MSC to MSC case and GMLC to 3G-MSC to 3G-MSC case.

Consequences if not approved: ⌘ The handling of a position request after a MSC to MSC or 3G-MSC to MSC or 3G-MSC to 3G-MSC handover would be ambiguous, leading to manufacturer-specific implementations.

Clauses affected: ⌘ 4.9.1, 4.9.2, and 4.9.3 split into subclauses

Other specs affected: ⌘ Other core specifications ⌘ Test specifications
 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 ****

4.9 Location Services

The general principles of the location services procedures are given in Technical Specification GSM 03.71 and 3GPP TS 23.171.

3GPP TS 29.010 gives the necessary information for interworking between the 3GPP TS 25.413 RANAP protocol and the GSM 08.08 BSSMAP protocol. The interworking is necessary for positioning requests issued after a completed GSM to UMTS inter system handover. BSSMAP messages carried by MAP over the E-interface must be mapped by the non-anchor 3G-MSC into the corresponding RANAP messages to be sent over the Iu-interface and vice versa. In case of Inter-MSC GSM to GSM Handover and Inter-MSC UMTS to UMTS SRNS Relocation no mapping between the 3GPP TS 25.413 RANAP protocol and the GSM 08.08 BSSMAP protocol is necessary, but only the interworking with the MAP protocol over the E-interface needs to be described.

4.9.1 Completed Location Acquisition

**** First New Section ****

4.9.1.1 Inter-MSC Handover (GSM to GSM)

After a successful Inter-MSC handover, any positioning request received by the anchor MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor MSC playing the role of the MSC and the non anchor MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor MSC the received BSSMAP messages are forwarded to the BSS, and the received BSSMAP messages are sent over the E-interface to the anchor MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65a.

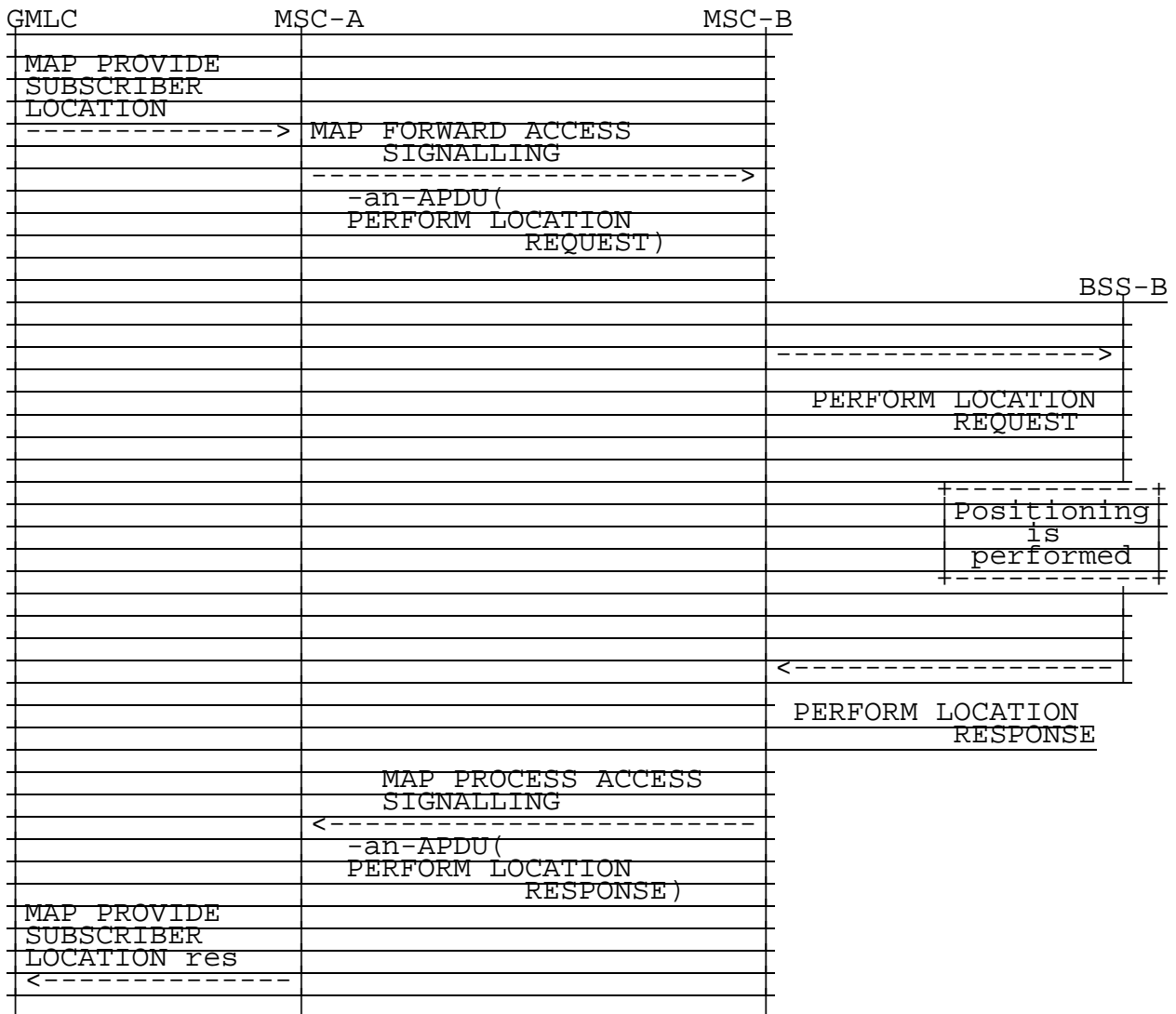


Figure 65a: Signalling for a completed Location Acquisition procedure

**** Next Modified Section ****

4.9.1.24 Inter-MSC Handover (GSM to UMTS) InterSystem Handover

After a successful Inter-MSC GSM to UMTS inter system handover, any positioning request received by the anchor MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor MSC playing the role of the MSC and the non anchor 3G MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor 3G MSC the received BSSMAP messages are mapped into the corresponding RANAP messages to be sent to the RNS, and the received RANAP messages are mapped into the corresponding BSSMAP messages to be sent over the E-interface to the anchor MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65.

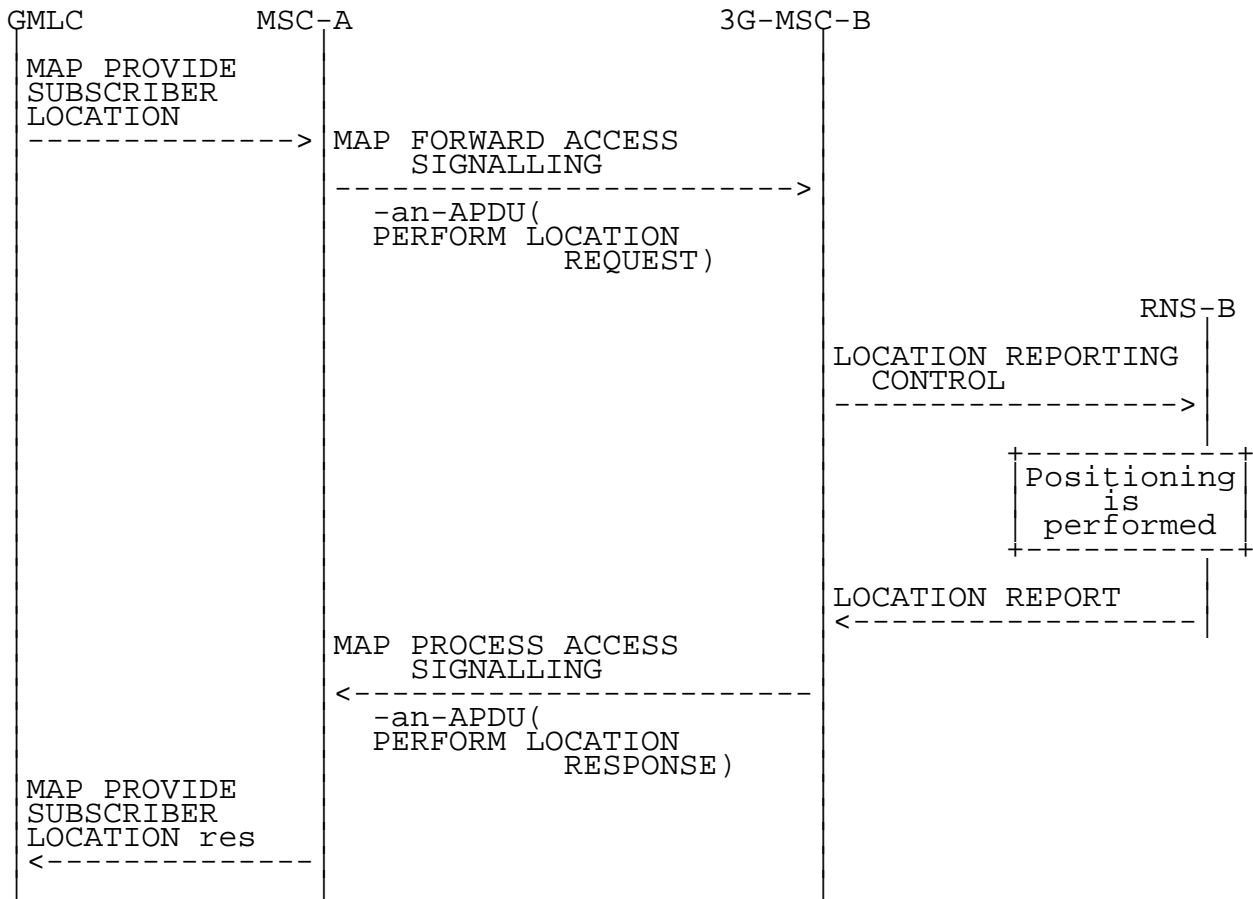


Figure 65: Signalling for a completed Location Acquisition procedure

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 -an-APDU(PERFORM LOCATION REQUEST) BSSMAP information elements: Location Type >Current Geographic Location Cell Identifier Classmark Inf. Type3 LCS Client Type Chosen Channel LCS Priority LCS QoS GPS Assistance Data APDU	LOCATION REPORTING CONTROL RANAP information elements: Request Type >Event = Direct >Report Area = Geo. Coord. ---- ---- ---- ---- ---- Request Type >Accuracy Code ---- ----	1
Result	MAP PROCESS ACCESS SIG. request -an-APDU(PERFORM LOCATION RESPONSE) BSSMAP information elements: Location Estimate Positioning Data Deciphering Keys LCS Cause ----	LOCATION REPORT RANAP information elements: Area Identity >Geographical Area ---- ---- Cause Request Type	

NOTE 1: All other Location Type possibilities are not supported by UMTS positioning,

****** Next New Sections ******

4.9.1.32 Inter-MSC Handover (UMTS to GSM)-InterSystem Handover

After a successful Inter-MSC UMTS to GSM inter system handover, any positioning request received by the anchor 3G-MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor 3G-MSC playing the role of the 3G-MSC and the non anchor MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor MSC the received BSSMAP messages are forwarded to the BSS, and the received BSSMAP messages are sent over the E-interface to the anchor 3G-MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65b.

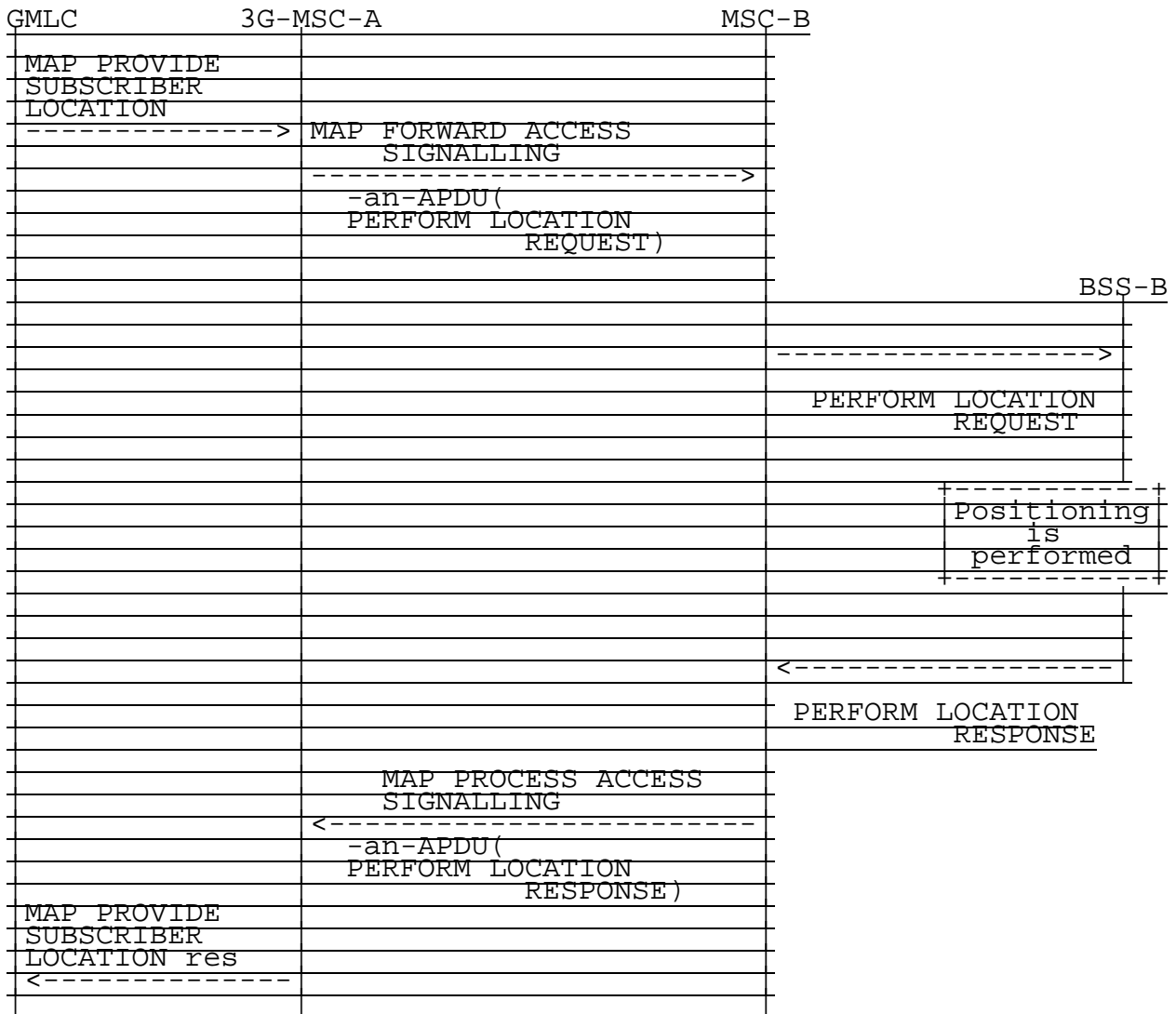


Figure 65b: Signalling for a completed Location Acquisition procedure

4.9.1.43 Inter-MSC SRNSUMTS to UMTS InterSystem HandoverRelocation

After a successful Inter-MSC SRNS RelocationUMTS to UMTS inter system handover, any positioning request received by the anchor 3G-MSC via the MAP message Provide Subscriber Location triggers the RANAP procedure Location Reporting Control described in TS 25.413. In case of handover this procedure is executed according to 23.009 with the anchor 3G-MSC playing the role of the 3G-MSC and the non anchor 3G-MSC playing the role of the RNS.

The needed RANAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor 3G-MSC the received RANAP messages are forwarded to the RNS, and the received RANAPmessages are sent over the E-interface to the anchor 3G-MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65c.

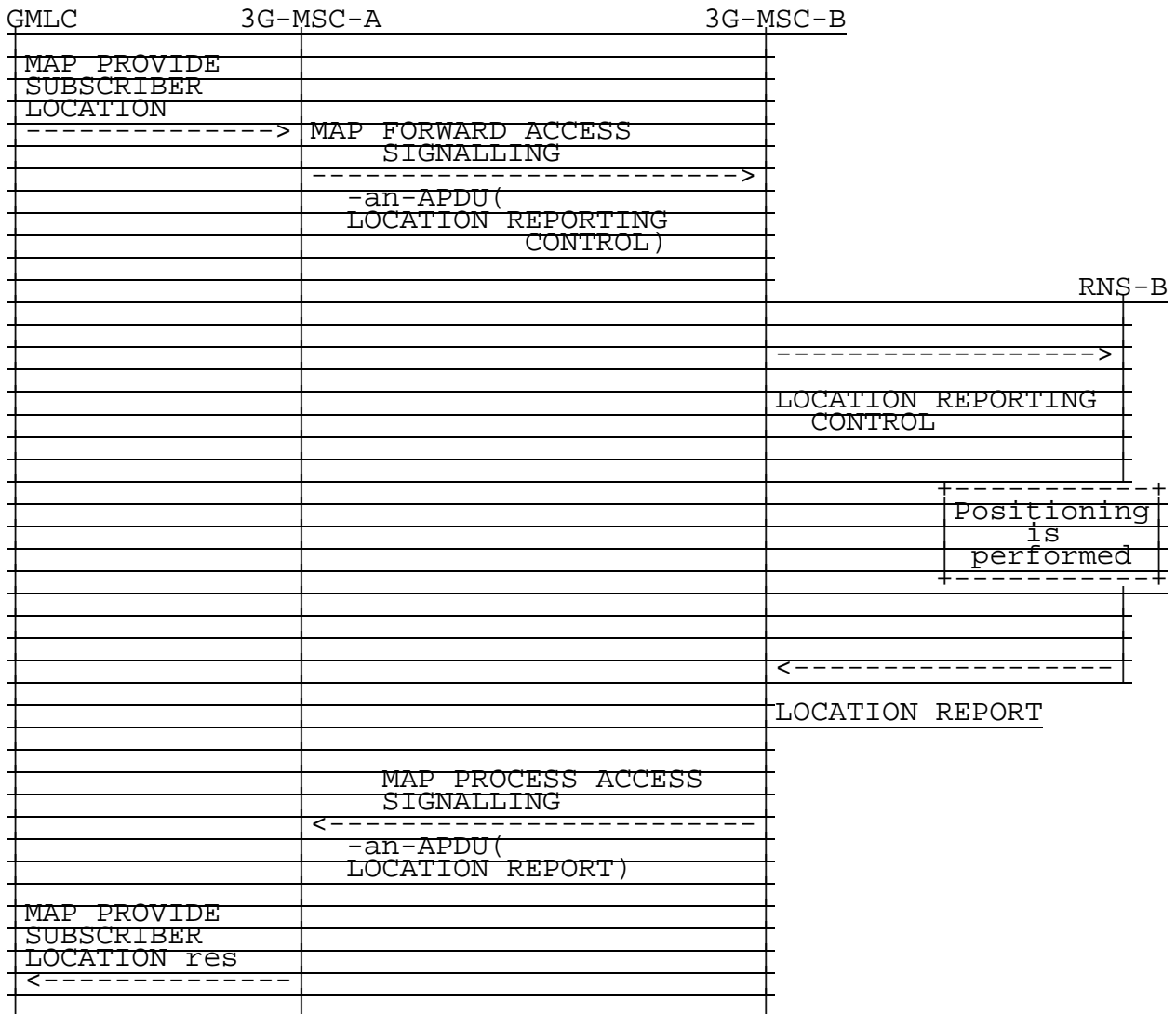


Figure 65c: Signalling for a completed Location Acquisition procedure

4.9.2 Cause Code Mapping

4.9.2.1 Inter-MSC Handover(GSM to GSM)

When a mobile station is handed over from GSM to GSM, no mapping of cause codes is required. The MSC shall use the cause codes specified in GSM 08.08.

4.9.2.24 Inter-MSC Handover (GSM to UMTS) InterSystem Handover

****** Next Modified Section ******

When a Mobile Station is handed over between GSM and UMTS, a mapping of the cause codes used in the RANAP and the BSSMAP protocols is needed. The mapping described here is applicable to the BSSMAP protocol even when used inside MAP in the E-interface.

The mapping between the cause codes received in RANAP Location Report and the LCS cause codes sent in BSSMAP Perform Location Response is as follows:

25.413	08.08	Notes
LOCATION REPORT	PERFORM LOCATION RESPONSE	
- Requested Report Type not Supported	- Position method failure	
- Requested Information not Available	- System Failure	
- all other cause codes	- System Failure	

**** Next New Sections ****

4.9.2.32 Inter-MSC Handover (UMTS to GSM)-InterSystem Handover

When a mobile station is handed over from UMTS to GSM, no mapping of cause codes is required. The 3G-MSC shall use the cause codes specified in GSM 08.08.

4.9.2.43 Inter-MSC SRNS RelocationUMTS to UMTS InterSystem Handover

When a mobile station is handed over from UMTS to UMTS, no mapping of cause codes is required. Both 3G-MSCs shall use the cause codes specified in TS 25.413.

4.9.3 Aborted Location Acquisition

4.9.3.1 Inter-MSC Handover (GSM to GSM)

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

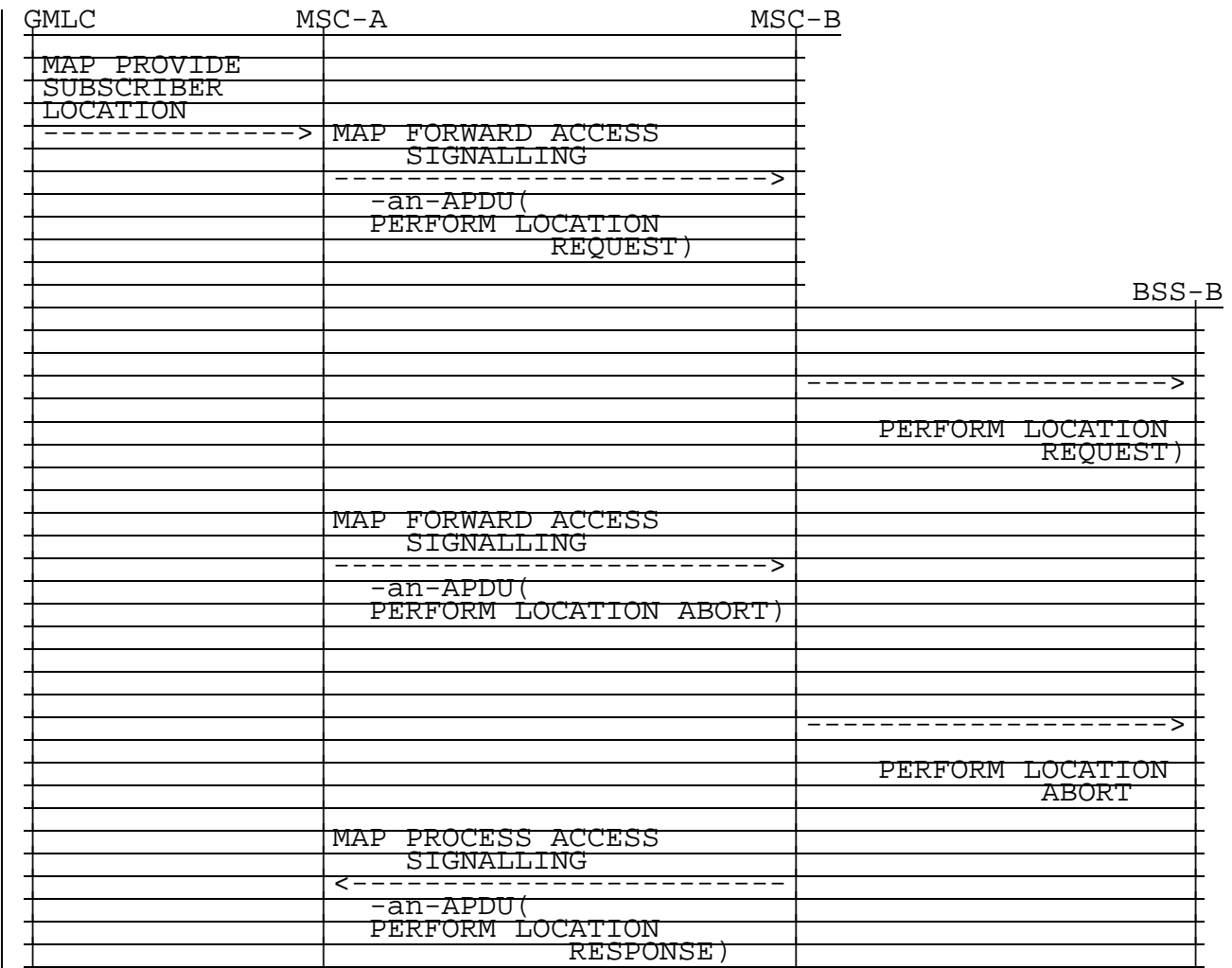


Figure 66a: Signalling for an aborted Location Acquisition procedure

**** Last Modified Section ****

4.9.3.42 Inter-MSC Handover (GSM to UMTS) ~~Inter System Handover~~

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.

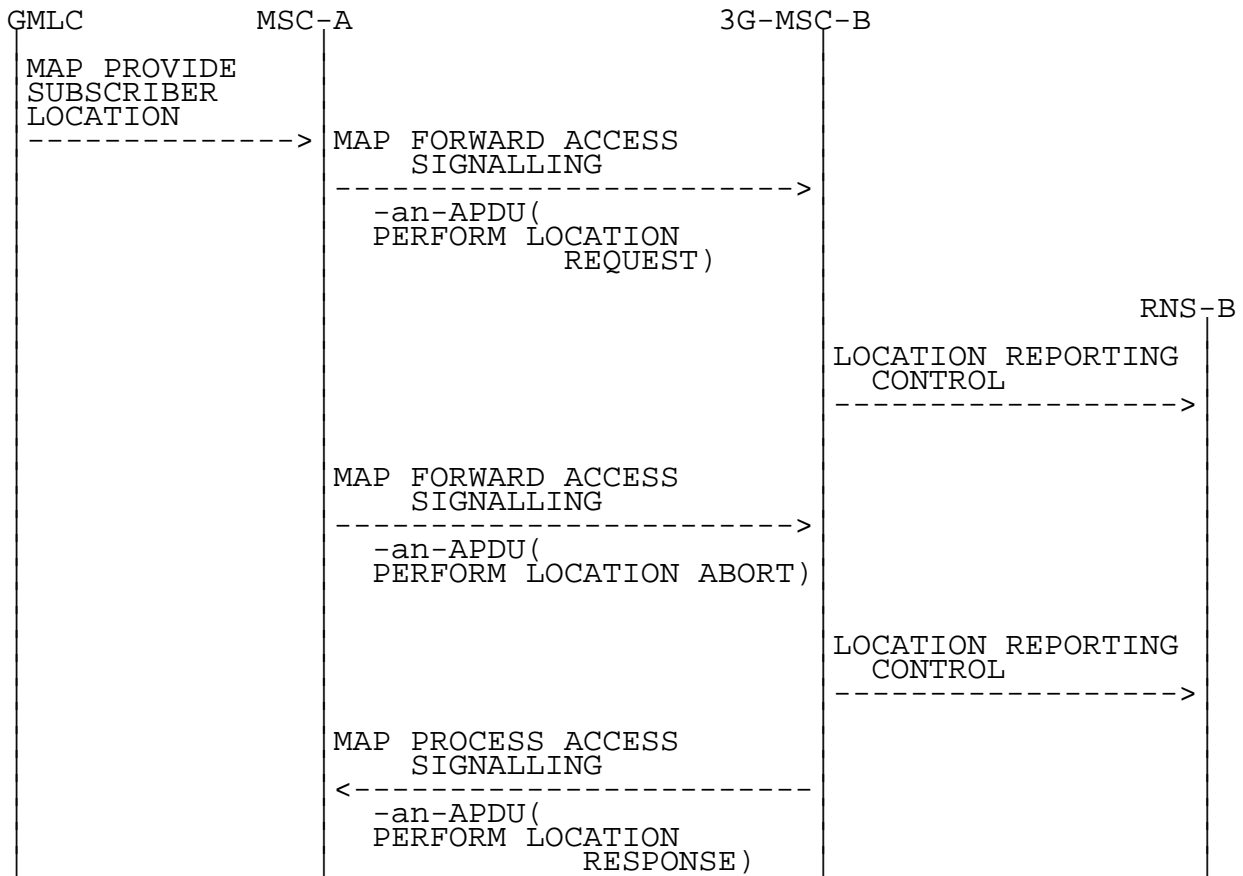


Figure 66: Signalling for an aborted Location Acquisition procedure

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

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

**** Last New Sections ****

4.9.3.32 Inter-MSC Handover (UMTS to GSM) InterSystem Handover

When for any reason the on going location acquisition procedure needs to be aborted, the anchor 3G-MSC sends the BSSMAP message Perform Location Abort over the E-interface.

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

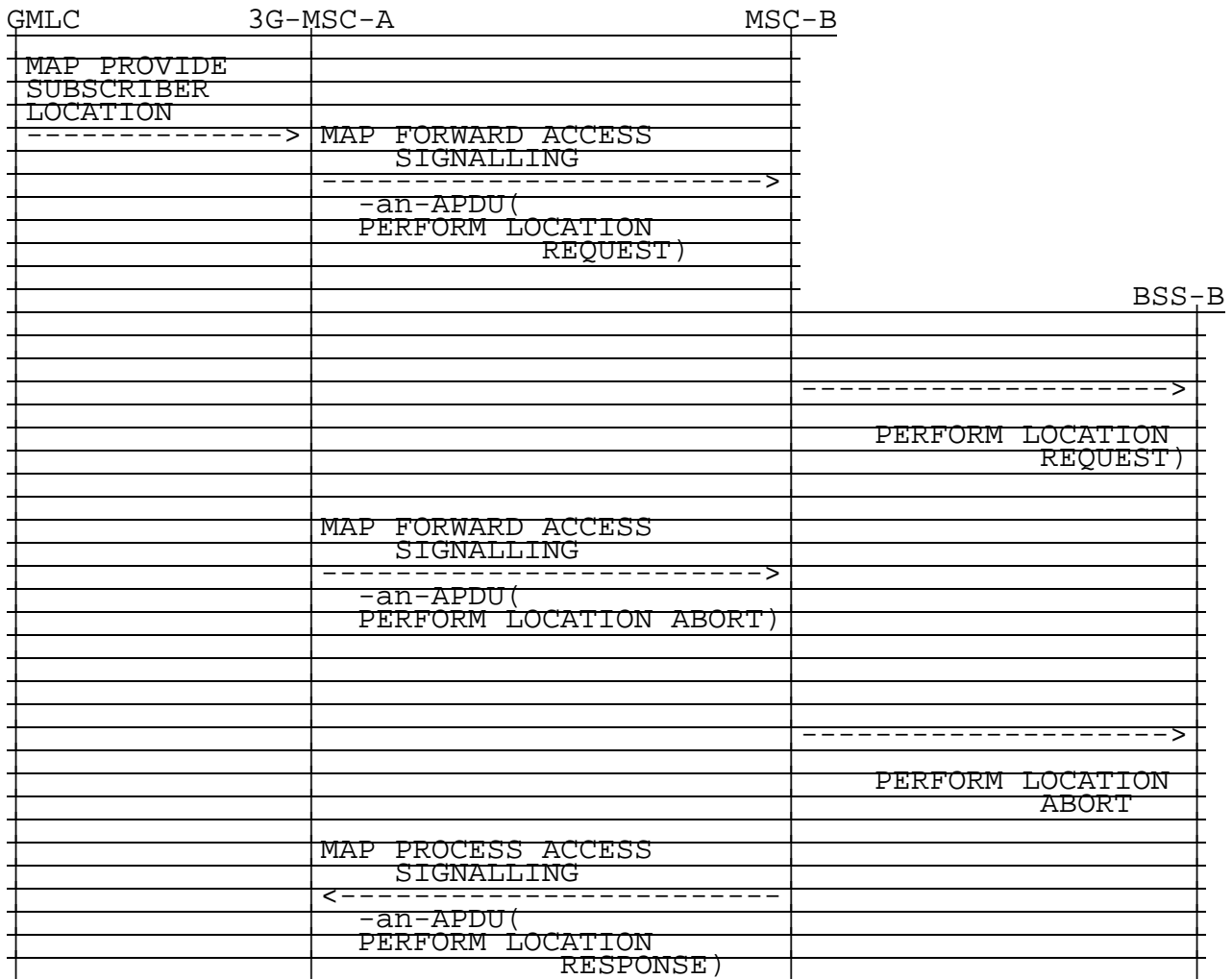


Figure 66b: Signalling for an aborted Location Acquisition procedure

4.9.3.43 Inter-MSC SRNS Relocation UMTS to UMTS InterSystem Handover

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 Abort over the E-interface.

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

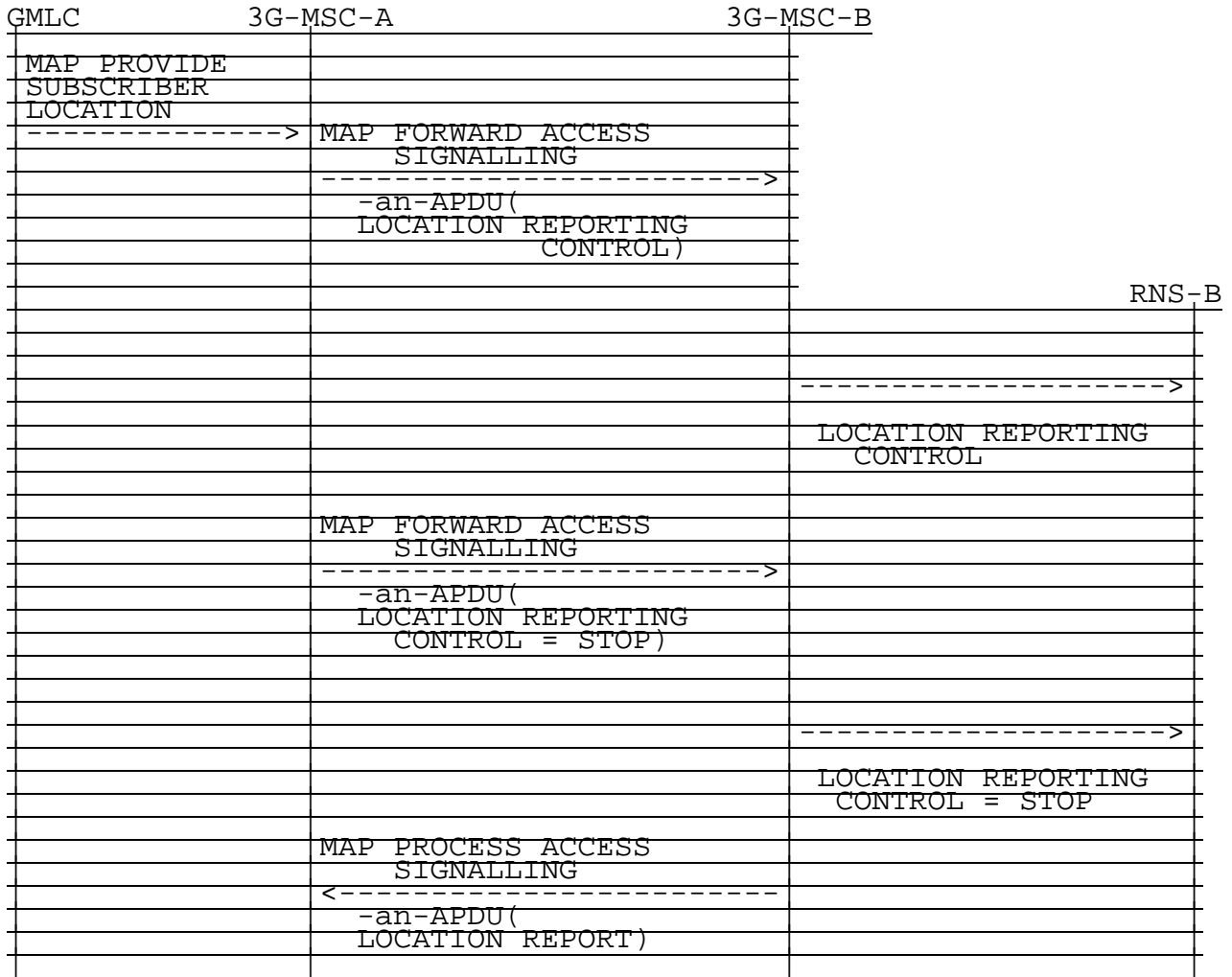


Figure 66c: Signalling for an aborted Location Acquisition procedure

*** END OF MODIFICATIONS ***

CHANGE REQUEST

⌘ **29.010 CR 036** ⌘ rev **2** ⌘ Current version: **4.1.0** ⌘

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:	⌘ LCS/HO Location Reporting – GSM to GSM, UMTS to GSM and UMTS to UMTS		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 27 September 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:	⌘ Mirror changes to R99.
	<p>In case of completed GSM to GSM inter MSC handover, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The 3G-MSC must forward the request to the non-anchor MSC by encapsulating BSSMAP messages on the E-interface.</p> <p>In case of completed UMTS to GSM inter MSC handover, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The 3G-MSC must forward the request to the non-anchor MSC by encapsulating BSSMAP messages on the E-interface.</p> <p>In case of a completed UMTS to UMTS SRNS relocation, a positioning request issued by a GMLC will be handled by the anchor 3G-MSC. The anchor 3G-MSC must forward the request to the non-anchor 3G-MSC by encapsulating RANAP messages on the E-interface.</p>
Summary of change:	⌘ Add signalling diagrams for GMLC to MSC to MSC case, GMLC to 3G-MSC to MSC case and GMLC to 3G-MSC to 3G-MSC case.
Consequences if not approved:	⌘ The handling of a position request after a MSC to MSC or 3G-MSC to MSC or 3G-MSC to 3G-MSC handover would be ambiguous, leading to manufacturer-specific implementations.

Clauses affected:	⌘ 4.9.1, 4.9.2, and 4.9.3 split into subclauses		
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 ****

4.9 Location Services

The general principles of the location services procedures are given in Technical Specification 3GPP TS 23.271.

3GPP TS 29.010 gives the necessary information for interworking between the 3GPP TS 25.413 RANAP protocol and the GSM 08.08 BSSMAP protocol. The interworking is necessary for positioning requests issued after a completed GSM to UMTS inter system handover. BSSMAP messages carried by MAP over the E-interface must be mapped by the non-anchor 3G-MSC into the corresponding RANAP messages to be sent over the Iu-interface and vice versa. In case of Inter-MSC GSM to GSM Handover and Inter-MSC UMTS to UMTS SRNS Relocation no mapping between the 3GPP TS 25.413 RANAP protocol and the GSM 08.08 BSSMAP protocol is necessary, but only the interworking with the MAP protocol over the E-interface needs to be described.

4.9.1 Completed Location Acquisition

**** ~~First Modified~~ New Section ****

4.9.1.1 Inter-MSC Handover (GSM to GSM)

After a successful Inter-MSC handover, any positioning request received by the anchor MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor MSC playing the role of the MSC and the non anchor MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor MSC the received BSSMAP messages are forwarded to the BSS, and the received BSSMAP messages are sent over the E-interface to the anchor MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65a.

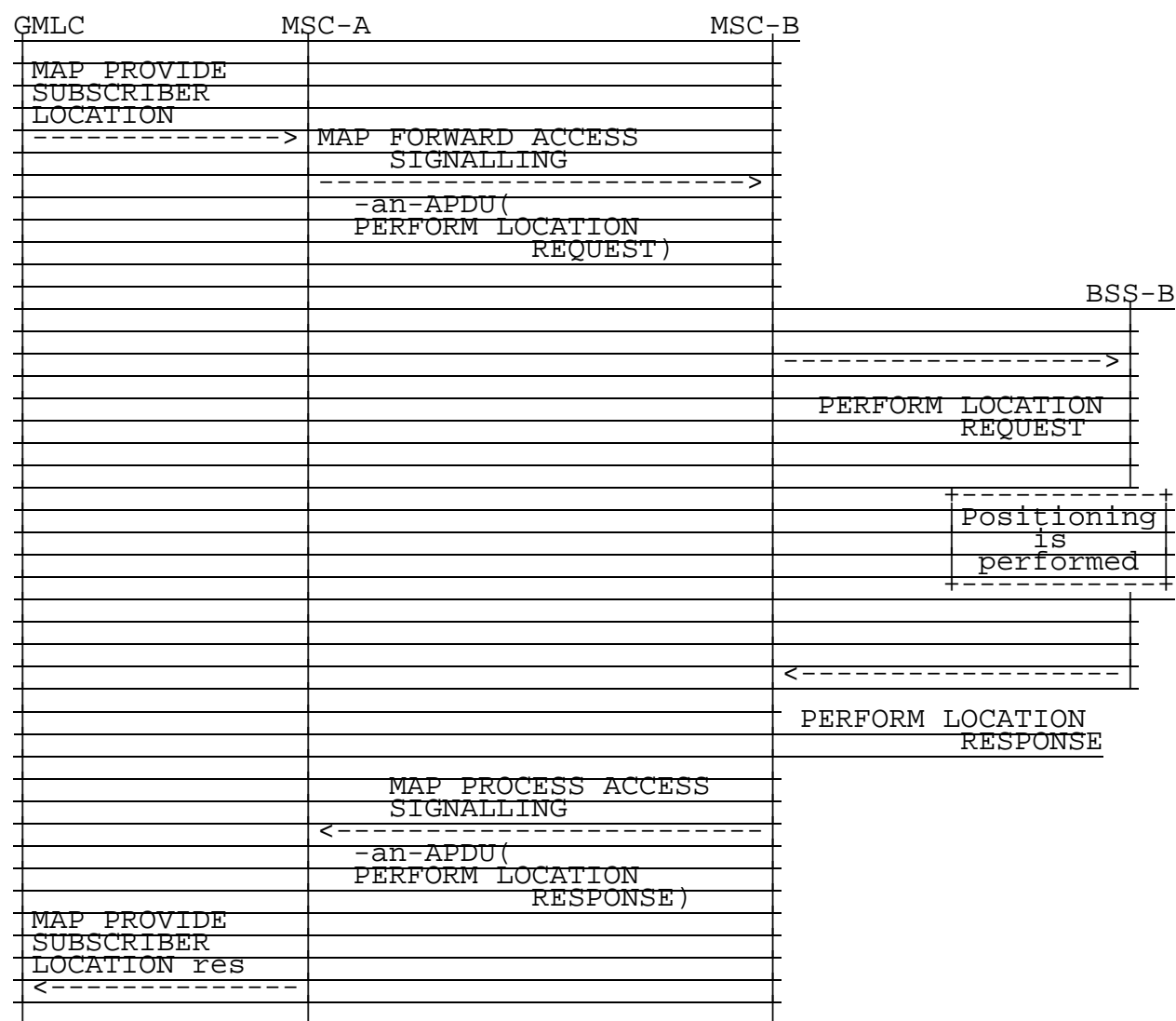


Figure 65a: Signalling for a completed Location Acquisition procedure

**** Next Modified Section ****

4.9.1.2 Inter-MSC Handover (GSM to UMTS)

After a successful Inter-MSC GSM to UMTS inter system handover, any positioning request received by the anchor MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor MSC playing the role of the MSC and the non anchor 3G MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor 3G MSC the received BSSMAP messages are mapped into the corresponding RANAP messages to be sent to the RNS, and the received RANAP messages are mapped into the corresponding BSSMAP messages to be sent over the E-interface to the anchor MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65.

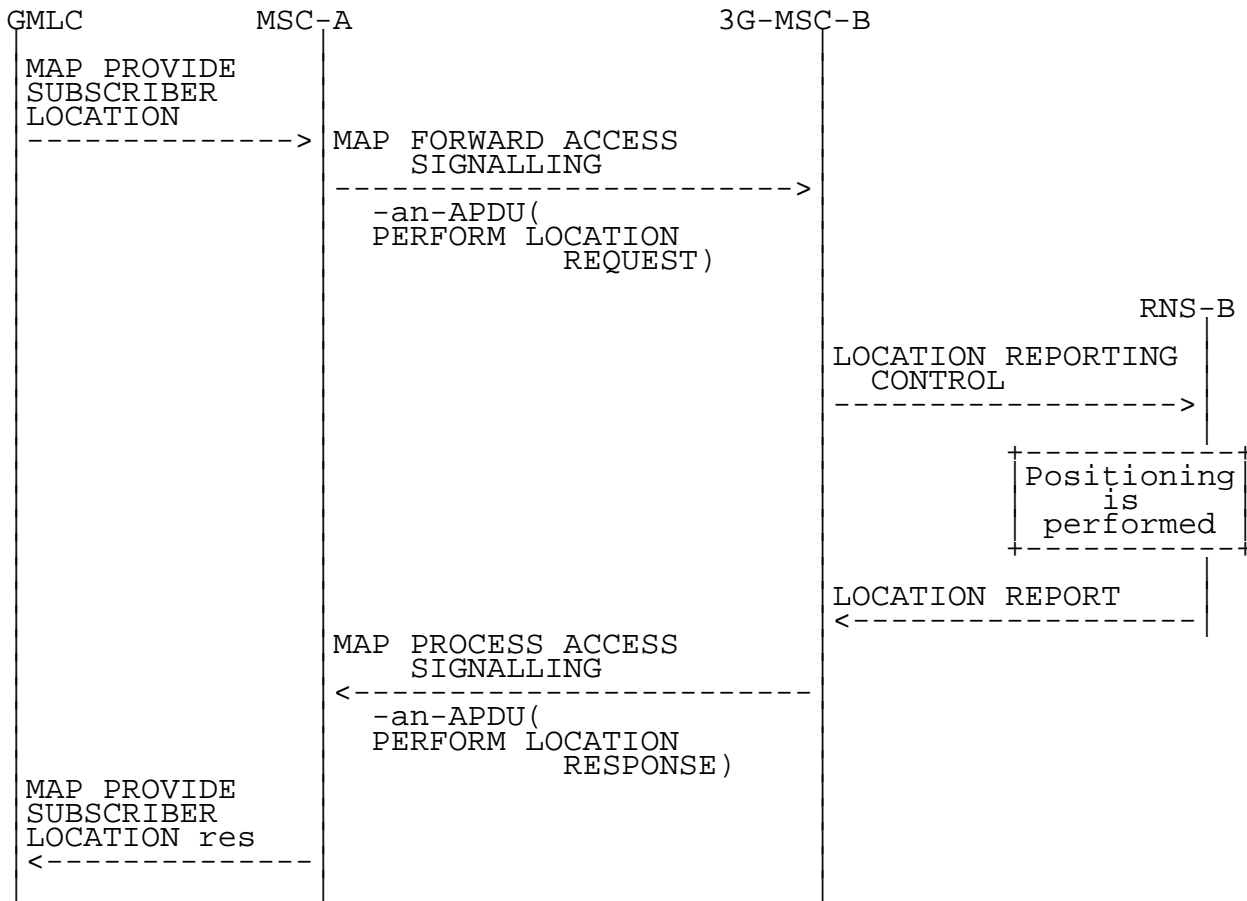


Figure 65: Signalling for a completed Location Acquisition procedure

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 -an-APDU(PERFORM LOCATION REQUEST) BSSMAP information elements: Location Type >Current Geographic Location Cell Identifier Classmark Inf. Type3 LCS Client Type Chosen Channel LCS Priority LCS QoS GPS Assistance Data APDU	LOCATION REPORTING CONTROL RANAP information elements: Request Type >Event = Direct >Report Area = Geo. Coord. ---- ---- ---- ---- Request Type >Accuracy Code ---- ----	1
Result	MAP PROCESS ACCESS SIG. request -an-APDU(PERFORM LOCATION RESPONSE) BSSMAP information elements: Location Estimate Positioning Data Deciphering Keys LCS Cause ----	LOCATION REPORT RANAP information elements: Area Identity >Geographical Area ---- ---- Cause Request Type	

NOTE 1: All other Location Type possibilities are not supported by UMTS positioning

****** Next New Sections ******

4.9.1.3 Inter-MSC Handover (UMTS to GSM)

After a successful Inter-MSC UMTS to GSM inter system handover, any positioning request received by the anchor 3G-MSC via the MAP message Provide Subscriber Location triggers the BSSMAP procedure Location Acquisition described in GSM 08.08. In case of handover this procedure is executed according to GSM 09.08 with the anchor 3G-MSC playing the role of the 3G-MSC and the non anchor MSC playing the role of the BSS.

The needed BSSMAP signalling is sent over the E-interface encapsulated in the MAP messages Process Access Signalling and Forward Access Signalling.

At the non anchor MSC the received BSSMAP messages are forwarded to the BSS, and the received BSSMAP messages are sent over the E-interface to the anchor 3G-MSC.

The signalling for a completed Location Acquisition procedure is shown in figures 65b.

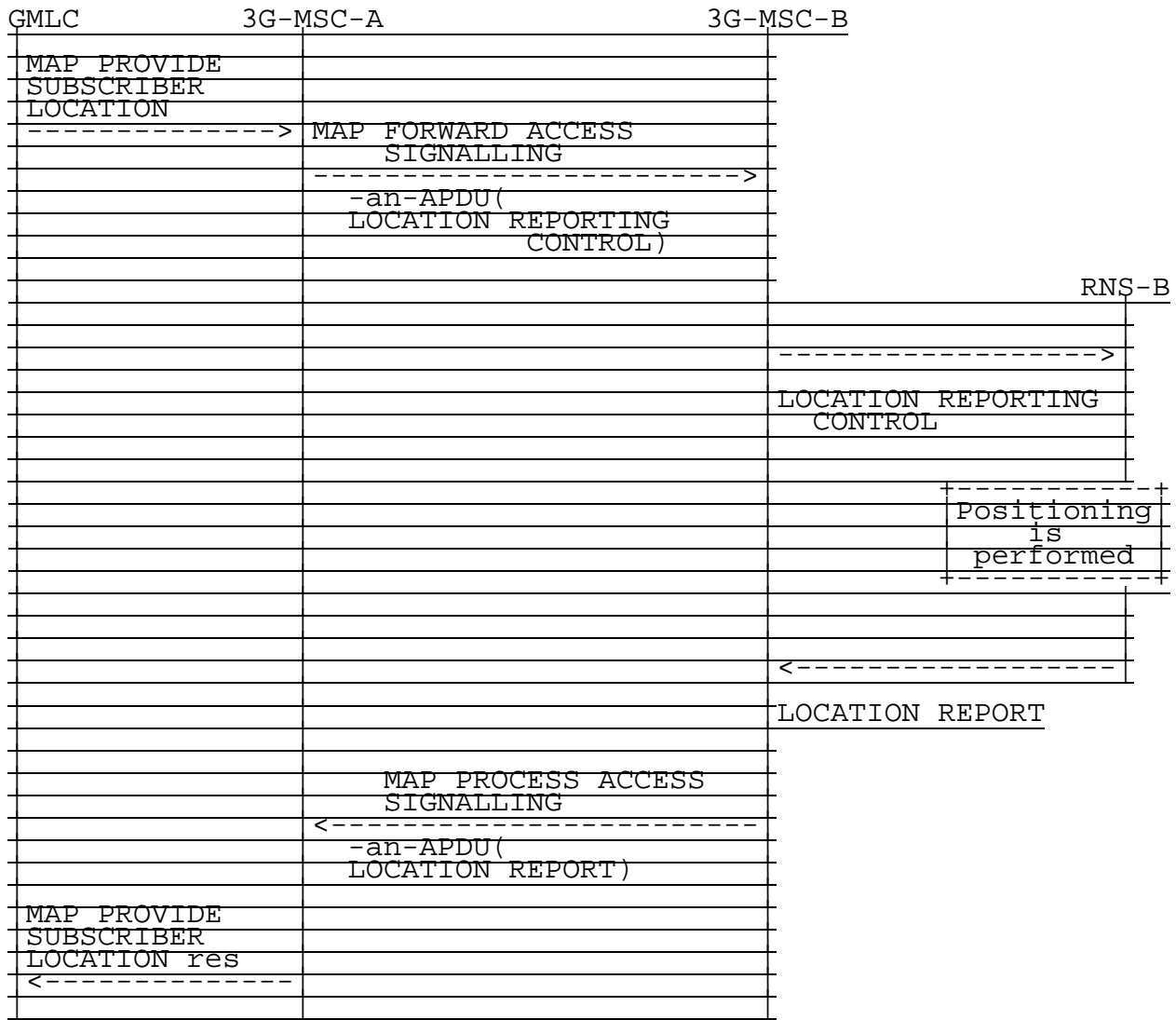


Figure 65c: Signalling for a completed Location Acquisition procedure

4.9.2 Cause Code Mapping

4.9.2.1 Inter-MS-C Handover (GSM to GSM)

When a mobile station is handed over from GSM to GSM, no mapping of cause codes is required. The MSC shall use the cause codes specified in GSM 08.08.

**** Next Modified Section ****

4.9.2.2 Inter-MS-C Handover (GSM to UMTS)

When a Mobile Station is handed over between GSM and UMTS, a mapping of the cause codes used in the RANAP and the BSSMAP protocols is needed. The mapping described here is applicable to the BSSMAP protocol even when used inside MAP in the E-interface.

The mapping between the cause codes received in RANAP Location Report and the LCS cause codes sent in BSSMAP Perform Location Response is as follows:

25.413	08.08	Notes
LOCATION REPORT	PERFORM LOCATION RESPONSE	
- Requested Report Type not Supported	- Position method failure	
- Requested Information not Available	- System Failure	
- all other cause codes	- System Failure	

****** Next New Section ******

4.9.2.3 Inter-MSC Handover (UMTS to GSM)

When a mobile station is handed over from UMTS to GSM, no mapping of cause codes is required. The 3G-MSC shall use the cause codes specified in GSM 08.08.

4.9.2.4 Inter-MSC SRNS Relocation

When a mobile station is handed over from UMTS to UMTS, no mapping of cause codes is required. Both 3G-MSCs shall use the cause codes specified in TS 25.413.

4.9.3 Aborted Location Acquisition

****** Next New Section ******

4.9.3.1 Inter-MSC Handover (GSM to GSM)

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

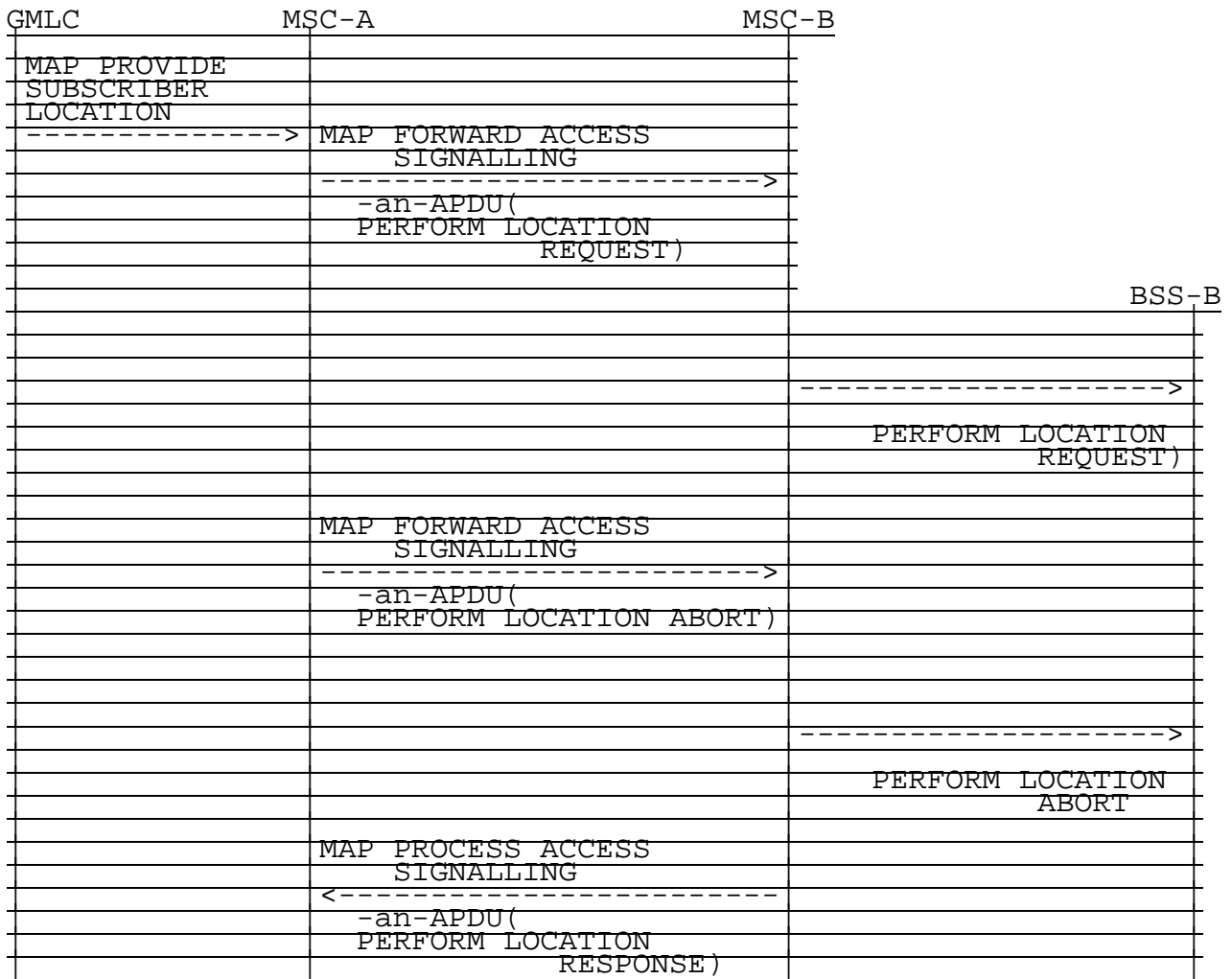


Figure 66a: Signalling for an aborted Location Acquisition procedure

**** Last Modified Section ****

4.9.3.2 Inter-MSB Handover (GSM to UMTS)

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

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

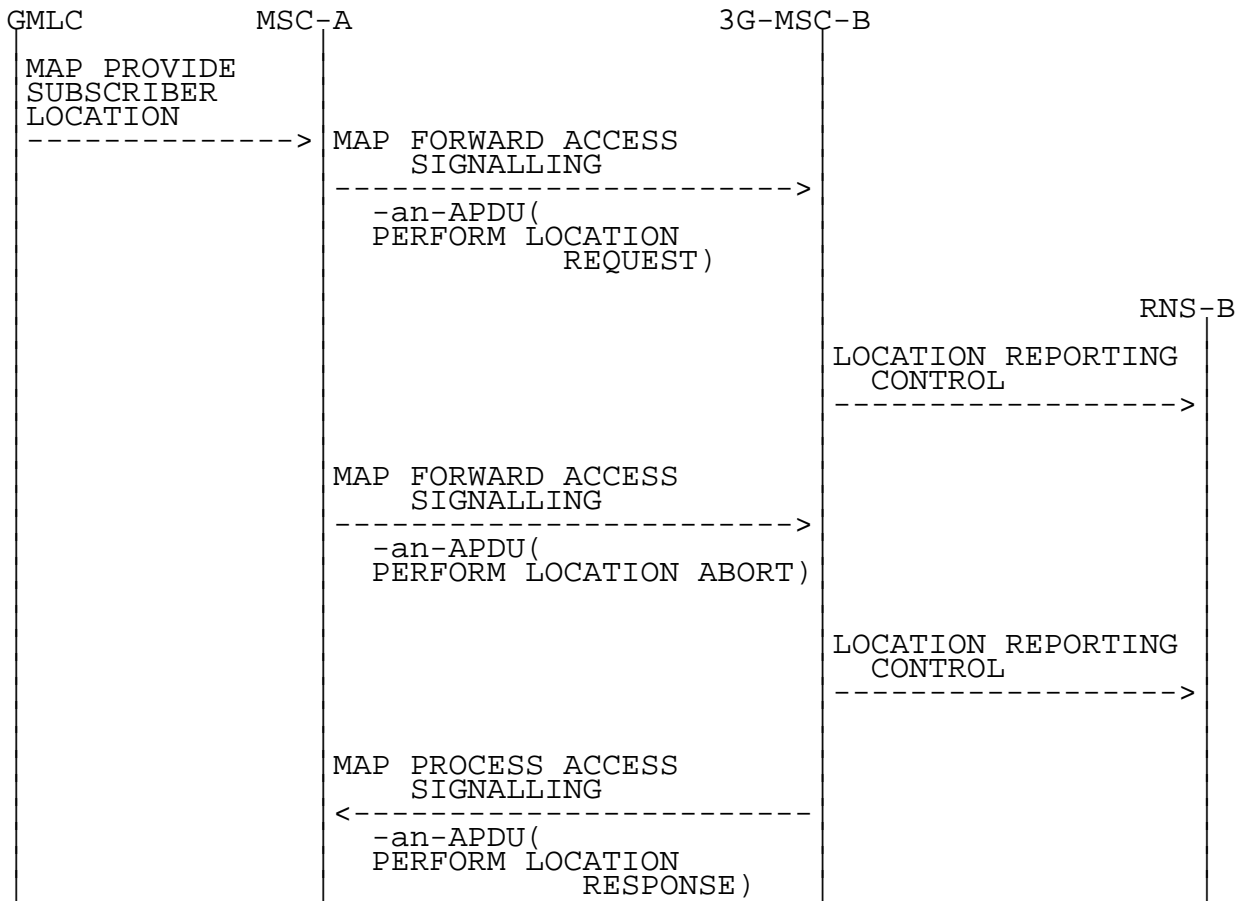


Figure 66: Signalling for an aborted Location Acquisition procedure

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

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

**** Last New Sections ****

4.9.3.3 Inter-MSC Handover (UMTS to GSM)

When for any reason the on going location acquisition procedure needs to be aborted, the anchor 3G-MSC sends the BSSMAP message Perform Location Abort over the E-interface.

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

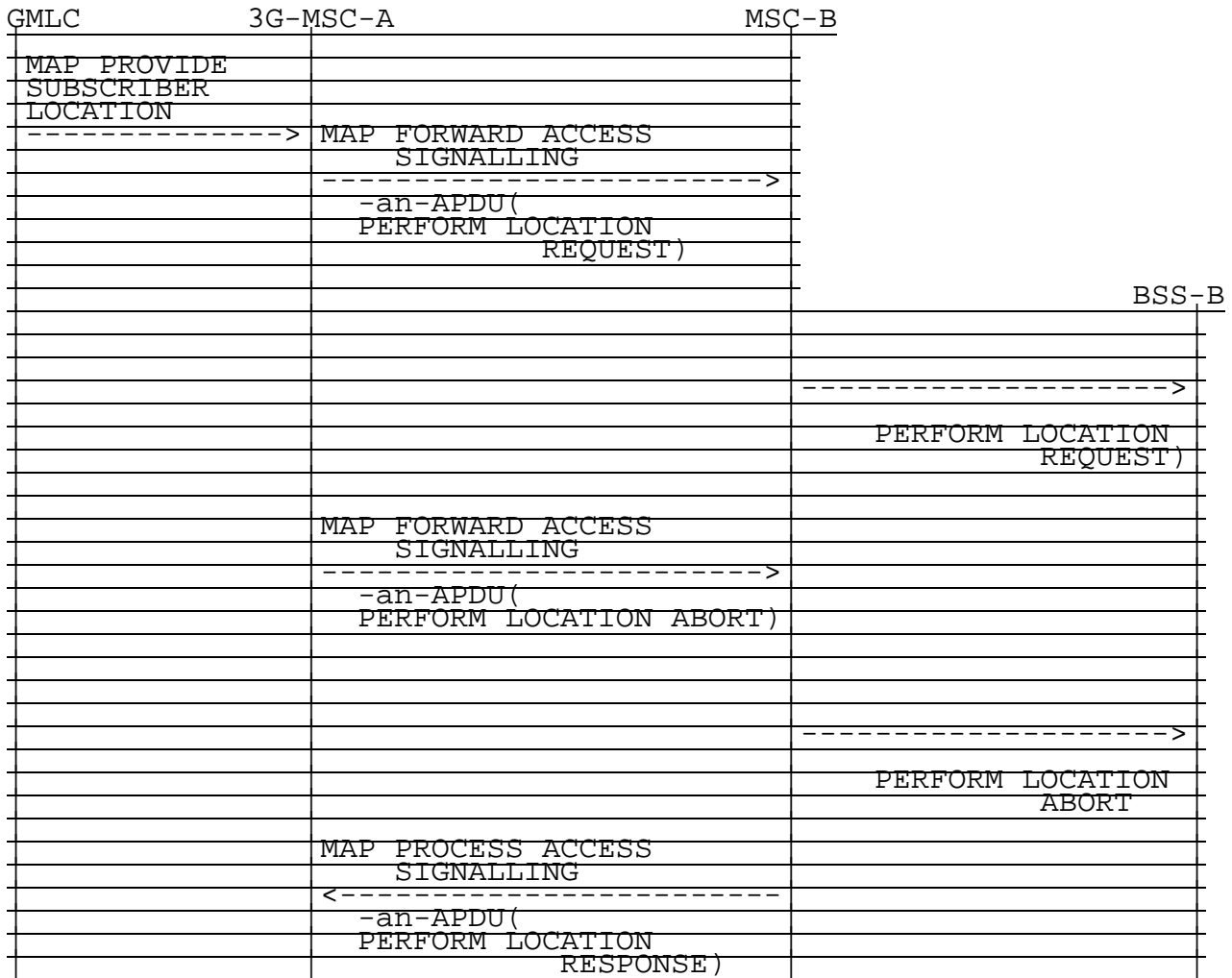


Figure 66b: Signalling for an aborted Location Acquisition procedure

4.9.3.4 Inter-MSC 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 Abort over the E-interface.

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

CHANGE REQUEST

⌘ **29.010 CR 039** ⌘ rev **-** ⌘ 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:	⌘ Global replace of BSS-APDU with AN-APDU		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
Category:	⌘ F (Agreed by Consensus)	Release:	⌘ R99
	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)		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)
	Detailed explanations of the above categories can be found in 3GPP TR 21.900.		

Reason for change:	⌘ Up to release 98 the MAP Operations included in the handoverControlContext AC v1 and v2 contained the parameter BSS-APDU which could be used to encapsulate BSSMAP messages. In rel99 the AC version has been raised to v3 and BSS-APDU has been replaced by AN-APDU which can transport BSSMAP and RANAP messages. 29.010 has not been updated to reflect this replacement, and still refers to BSS-APDU. This can cause confusion on what is actually meant or implied by 29.010.
Summary of change:	⌘ Replace every instance of BSS-APDU with AN-APDU.
Consequences if not approved:	⌘ Misalignment with 29.002 and consequent possible confusion in interpreting 29.010

Clauses affected:	⌘ 4.5.1, 4.5.2, 4.5.3, 4.5.4, 4.6.1, 4.6.2, 4.6.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications		
Other comments:	⌘ Instead of detailing in the CR every single change by including the impacted sections, I'd like to ask the editor of the CR to perform a global replacement of BSS-APDU with AN-APDU. The editor could also take the chance to line up the following TS references throughout the text: <ul style="list-style-type: none"> • 03.09 → 23.009 • 04.08 → 24.008 • 09.02 → 29.002 • 09.07 → 29.007 		

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 ******

BSS APDUAN-PDU

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

CHANGE REQUEST

⌘ **29.010 CR 040** ⌘ rev **-** ⌘ Current version: **4.1.0** ⌘

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:	⌘ Global replace of BSS-APDU with AN-APDU		
Source:	⌘ CN4		
Work item code:	⌘ Handover	Date:	⌘ 18/9/2001
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:	⌘ Up to release 98 the MAP Operations included in the handoverControlContext AC v1 and v2 contained the parameter BSS-APDU which could be used to encapsulate BSSMAP messages. In rel99 the AC version has been raised to v3 and BSS-APDU has been replaced by AN-APDU which can transport BSSMAP and RANAP messages. 29.010 has not been updated to reflect this replacement, and still refers to BSS-APDU. This can cause confusion on what is actually meant or implied by 29.010.
Summary of change:	⌘ Replace every instance of BSS-APDU with AN-APDU.
Consequences if not approved:	⌘ Misalignment with 29.002 and consequent possible confusion in interpreting 29.010

Clauses affected:	⌘ 4.5.1, 4.5.2, 4.5.3, 4.5.4, 4.6.1, 4.6.2, 4.6.3
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications
Other comments:	⌘ Instead of detailing in the CR every single change by including the impacted sections, I'd like to ask the editor of the CR to perform a global replacement of BSS-APDU with AN-APDU. The editor could also take the chance to line up the following TS references throughout the text: <ul style="list-style-type: none"> • 03.09 → 23.009 • 04.08 → 24.008 • 08.08 → 48.008 • 09.02 → 29.002 • 09.07 → 29.007 • 09.08 → 49.008

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 ******

BSS APDUAN-PDU

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