3GPP TSG CN Plenary Meeting #18 **NP-020580**
4th – 6th December 2002 New Orleans, USA.

Source: TSG CN WG4

Title: Corrections on Multicall Release 99

Agenda item: 7.9

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	514	2	N4-021571	R99	Correction to the Service Handover parameters	F	3.14.0
29.002	515	2	N4-021572	Rel-4	Correction to the Service Handover parameters	A	4.9.0
29.002	516	2	N4-021573	Rel-5	Correction to the Service Handover parameters	A	5.3.0
29.010	082	3	N4-021579	R99	Correction to the Service Handover parameters	F	3.9.0
29.010	083	3	N4-021580	Rel-4	Correction to the Service Handover parameters	A	4.4.0
29.010	084	3	N4-021581	Rel-5	Correction to the Service Handover parameters	A	5.1.0

3GPP TSG CN WG4 Meeting #17 **N4-021571**
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **514** ⌘ **rev** **2** ⌘ Current version: **3.14.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Because of Multicall the BSSAP Service Handover List parameter should be added. Also the Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU. This is an essential correction.
Summary of change:	⌘	BSSAP Service Handover List parameter is added.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	7.6, 7.6.6.5A, 8.4.1, 8.4.4, 17.7.1

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications		29.010 CR 082
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

7.6 Definition of parameters

Following is an alphabetic list of parameters used in the common MAP-services in clauseclause 7.3:

Application context name	7.3.1	Refuse reason	7.3.1
Destination address	7.3.1	Release method	7.3.2
Destination reference	7.3.1	Responding address	7.3.1
Diagnostic information	7.3.4	Result	7.3.1
Originating address	7.3.1	Source	7.3.5
Originating reference	7.3.1	Specific information	7.3.1/7.3.2/7.3.4
Problem diagnostic	7.3.6	User reason	7.3.4
Provider reason	7.3.5		

Following is an alphabetic list of parameters contained in this clause:

CUG Subscription Flag	7.6.3.37
Current location area Id	7.6.2.6
Current password	7.6.4.21
eMLPP Information	7.6.4.41
Encryption Information	7.6.6.9
Equipment status	7.6.3.2
Extensible Basic Service Group	7.6.3.5
Extensible Bearer service	7.6.3.3
Extensible Call barring feature	7.6.3.21
Extensible Call barring information	7.6.3.20
Extensible Call barring information for CSE	7.6.3.79
Extensible Forwarding feature	7.6.3.16
Extensible Forwarding info	7.6.3.15
Extensible Forwarding information for CSE	7.6.3.80
Extensible Forwarding Options	7.6.3.18
Extensible No reply condition timer	7.6.3.19
Extensible QoS-Subscribed	7.6.3.74
Extensible SS-Data	7.6.3.29
Extensible SS-Info	7.6.3.14
Extensible SS-Status	7.6.3.17
Extensible Teleservice	7.6.3.4
External Signal Information	7.6.9.4
Failure Cause	7.6.7.9
Forwarded-to number	7.6.2.22
Forwarded-to subaddress	7.6.2.23
Forwarding feature	7.6.4.16
Forwarding information	7.6.4.15
Forwarding Options	7.6.4.6
GGSN address	7.6.2.40
GGSN number	7.6.2.41
GMSC CAMEL Subscription Info	7.6.3.34
GPRS enhancements support indicator	7.6.3.73
GPRS Node Indicator	7.6.8.14
GPRS Subscription Data	7.6.3.46
GPRS Subscription Data Withdraw	7.6.3.45
GPRS Support Indicator	7.6.8.15
Group Id	7.6.2.33
GSM bearer capability	7.6.3.6
Guidance information	7.6.4.22
Handover number	7.6.2.21
High Layer Compatibility	7.6.3.43
HLR Id	7.6.2.15
HLR number	7.6.2.13
HO-Number Not Required	7.6.6.7
IMEI	7.6.2.3
IMSI	7.6.2.1
Integrity Protection Information	7.6.6.8
Inter CUG options	7.6.3.27
Intra CUG restrictions	7.6.3.28
Relocation Number List	7.6.2.19A
Requested Info	7.6.3.31
Requested Subscription Info	7.6.3.86
Roaming number	7.6.2.19
Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Roaming Restriction Due To Unsupported Feature	7.6.3.13
Current Security Context	7.6.7.8
Selected RAB ID	7.6.2.56
Service centre address	7.6.2.27
Serving Cell Id	7.6.2.37
SGSN address	7.6.2.39
SGSN CAMEL Subscription Info	7.6.3.75
SGSN number	7.6.2.38
SIWF Number	7.6.2.35
SoLSA Support Indicator	7.6.3.57
SM Delivery Outcome	7.6.8.6
SM-RP-DA	7.6.8.1
SM-RP-MTI	7.6.8.16
SM-RP-OA	7.6.8.2
SM-RP-PRI	7.6.8.5
SM-RP-SMEA	7.6.8.17
SM-RP-UI	7.6.8.4
Sres	7.6.7.3
SS-Code	7.6.4.1
SS-Data	7.6.4.3
SS-Event	7.6.4.42
SS-Event-Data	7.6.4.43
SS-Info	7.6.4.24
SS-Status	7.6.4.2
Stored location area Id	7.6.2.5
Subscriber State	7.6.3.30
Subscriber Status	7.6.3.7
Super-Charger Supported in HLR	7.6.3.70
Super-Charger Supported in Serving Network Entity	7.6.3.71
Supported CAMEL Phases in VLR	7.6.3.36
Supported CAMEL Phases in SGSN	7.6.3.36A
Supported GAD Shapes	7.6.11.20
Suppress T-CSI	7.6.3.33
Suppression of Announcement	7.6.3.32
Target cell Id	7.6.2.8
Target location area Id	7.6.2.7
Target RNC Id	7.6.2.8A
Target MSC number	7.6.2.12
Teleservice	7.6.4.39
TMSI	7.6.2.2
Trace reference	7.6.10.2
Trace type	7.6.10.3
User error	7.6.1.4
USSD Data Coding Scheme	7.6.4.36
USSD String	7.6.4.37
UU Data	7.6.5.12
UUS CF Interaction	7.6.5.13
VBS Data	7.6.3.40
VGCS Data	7.6.3.39
VLR CAMEL Subscription Info	7.6.3.35
VLR number	7.6.2.14
VPLMN address allowed	7.6.3.48
Zone Code	7.6.2.28

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

7.6.6.5 BSSMAP Service Handover

This parameter refers to the Service Handover information element defined in GSM 08.08.

7.6.6.5A BSSMAP Service Handover List

This parameter refers to the list of Service Handover information elements defined in GSM 08.08.

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

8.4.1 MAP_PREPARE_HANDOVER 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_HANDOVER 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_HANDOVER

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(=)		
RAB ID	C	C(=)		
BSSMAP Service Handover	C	C(=)		
BSSMAP Service Handover List	C	C(=)		
RANAP Service Handover	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 clause 7.6.1.

Target Cell Id

For definition of this parameter see clause 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 3GPP TS 23.009.

Target RNC Id

For definition of this parameter see clause 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 3GPP TS 23.009.

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

For definition of this parameter see clause 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 clause 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 clause 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 clause 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 clause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see clause 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 UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 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 clause 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.

RAB ID

For definition of this parameter see subclause 7.6.2. This parameter shall be included when MSC-A supports multiple bearers and access network protocol is BSSAP and the RAB ID has a value other than 1.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is BSSAP.

Handover Number

For definition of this parameter see clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 7.6.1. The following errors defined in clause 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 clause 7.6.1.

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

8.4.4 MAP_FORWARD_ACCESS_SIGNALLING service

8.4.4.1 Definition

This service is used between MSC-A and MSC-B (E-interface) to pass information to be forwarded to the A-interface or Iu-interface of MSC-B.

The MAP_FORWARD_ACCESS_SIGNALLING service is a non-confirmed service using the primitives from table 8.4/4.

8.4.4.2 Service primitives

Table 8.4/4: MAP_FORWARD_ACCESS_SIGNALLING

Parameter name	Request	Indication
Invoke Id	M	M(=)
Integrity Protection Information	C	C(=)
Encryption Information	C	C(=)
Key Status	C	C(=)
AN-APDU	M	M(=)
Allowed GSM Algorithms	C	C(=)
Allowed UMTS Algorithms	C	C(=)
Radio Resource Information	C	C(=)
Radio Resource List	C	C(=)
BSSMAP Service Handover	C	C(=)
BSSMAP Service Handover List	C	C(=)
RANAP Service Handover	C	C(=)

8.4.4.3 Parameter use

For the definition and use of all parameters and errors, see clause 7.6.1.

Invoke Id

For definition of this parameter see clause 7.6.1.

Integrity Protection Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Encryption Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Key Status

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

This parameters includes allowed GSM algorithms. This GSM parameter shall be included if the encapsulated PDU is RANAP Security Mode Command and there is an indication that the UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if Integrity Protection Information and Encryption Information are not available and the encapsulated PDU is BSSMAP Cipher Mode Command.

Radio Resource Information

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request. If the parameter Radio Resource List is sent, the parameter Radio Resource Information shall not be sent.

Radio Resource List

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter Radio Resource Information is sent, the parameter Radio Resource List shall not be sent.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request ~~or BSSMAP Assignment Request~~. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6.. It shall be present if it is available and the encapsulated PDU is BSSMAP Assignment Request ~~or RANAP RAB Assignment Request~~.

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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
MAP-MS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-MS-DataTypes (11) version6 (6)}

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

   -- location registration types
   UpdateLocationArg,
   UpdateLocationRes,
   CancelLocationArg,
   CancelLocationRes,
   PurgeMS-Arg,
   PurgeMS-Res,
   SendIdentificationArg,
   SendIdentificationRes,
   UpdateGprsLocationArg,
   UpdateGprsLocationRes,
   IST-SupportIndicator,

   -- gprs location registration types
   GSN-Address,

   -- handover types
   ForwardAccessSignalling-Arg,
   PrepareHO-Arg,
   PrepareHO-Res,
   PrepareSubsequentHO-Arg,
   PrepareSubsequentHO-Res,
   ProcessAccessSignalling-Arg,
   SendEndSignal-Arg,
   SendEndSignal-Res,


   -- authentication management types
   SendAuthenticationInfoArg,
   SendAuthenticationInfoRes,
   AuthenticationFailureReportArg,
   AuthenticationFailureReportRes,

   -- security management types
   EquipmentStatus,
   Kc,

   -- subscriber management types
   InsertSubscriberDataArg,
   InsertSubscriberDataRes,
   LSAIdentity,
   DeleteSubscriberDataArg,
   DeleteSubscriberDataRes,
   Ext-QoS-Subscribed,
   SubscriberData,
   ODB-Data,
   SubscriberStatus,
   ZoneCodeList,
   maxNumOfZoneCodes,
   O-CSI,
   D-CSI,
   O-BcsmCamelTDPCriteriaList,
   T-BCSM-CAMEL-TDP-CriteriaList,
   SS-CSI,
   ServiceKey,
   DefaultCallHandling,
   CamelCapabilityHandling,
   BasicServiceCriteria,
```

```
   SupportedCamelPhases,
   maxNumOfCamelTDPData,
   CUG-Index,
   CUG-Info,
   CUG-Interlock,
   InterCUG-Restrictions,
   IntraCUG-Options,
   NotificationToMSUser,
   QoS-Subscribed,
   IST-AlertTimerValue,
   T-CSI,
   T-BcsmTriggerDetectionPoint,

   -- fault recovery types
   ResetArg,
   RestoreDataArg,
   RestoreDataRes,

   -- provide subscriber info types
   GeographicalInformation,

   -- subscriber information enquiry types
   ProvideSubscriberInfoArg,
   ProvideSubscriberInfoRes,
   SubscriberInfo,
   LocationInformation,
   SubscriberState,

   -- any time information enquiry types
   AnyTimeInterrogationArg,
   AnyTimeInterrogationRes,

   -- any time information handling types
   AnyTimeSubscriptionInterrogationArg,
   AnyTimeSubscriptionInterrogationRes,
   AnyTimeModificationArg,
   AnyTimeModificationRes,

   -- subscriber data modification notification types
   NoteSubscriberDataModifiedArg,
   NoteSubscriberDataModifiedRes,

   -- gprs location information retrieval types
   SendRoutingInfoForGprsArg,
   SendRoutingInfoForGprsRes,

   -- failure reporting types
   FailureReportArg,
   FailureReportRes,

   -- gprs notification types
   NoteMsPresentForGprsArg,
   NoteMsPresentForGprsRes,

   -- Mobility Management types
   NoteMM-EventArg,
   NoteMM-EventRes



;

IMPORTS
   maxNumOfSS,
   SS-SubscriptionOption,
   SS-List,
   SS-ForBS-Code,
   Password
FROM MAP-SS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-DataTypes (14) version6 (6)}

   SS-Code
FROM MAP-SS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-Code (15) version6 (6)}

   Ext-BearerServiceCode
FROM MAP-BS-Code {
```

```
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-BS-Code (20) version6 (6)}

   Ext-TeleserviceCode
FROM MAP-TS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-TS-Code (19) version6 (6)}


   AddressString,
   ISDN-AddressString,
   ISDN-SubaddressString,
   FTN-AddressString,
   AccessNetworkSignalInfo,
   IMSI,
   TMSI,
   HLR-List,
   LMSI,
   Identity,
   GlobalCellId,
   CellGlobalIdOrServiceAreaIdOrLAI,
   Ext-BasicServiceCode,
   NAEA-PreferredCI,
   EMLPP-Info,
   MC-SS-Info,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID,
   Ext-SS-Status



FROM MAP-CommonDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-CommonDataTypes (18) version6 (6)}

   ExtensionContainer
FROM MAP-ExtensionDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version6 (6)}

   AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ER-DataTypes (17) version6 (6)}


;


-- location registration types
```

```
UpdateLocationArg ::= SEQUENCE {
     imsi                                IMSI,

     msc-Number                          [1] ISDN-AddressString,
     vlr-Number                          ISDN-AddressString,
     lmsi                                [10] LMSI OPTIONAL,
     extensionContainer                  ExtensionContainer                OPTIONAL,
     ... ,
     vlr-Capability                      [6] VLR-Capability                OPTIONAL,
     informPreviousNetworkEntity         [11] NULL                         OPTIONAL }
```

```
VLR-Capability ::= SEQUENCE{
     supportedCamelPhases                [0] SupportedCamelPhases          OPTIONAL,
     extensionContainer                  ExtensionContainer                OPTIONAL,
     ... ,
     solsaSupportIndicator               [2] NULL                          OPTIONAL,
     istSupportIndicator                 [1] IST-SupportIndicator          OPTIONAL,
     superChargerSupportedInServingNetworkEntity   [3] SuperChargerInfo    OPTIONAL,
     longFTN-Supported                   [4]  NULL                         OPTIONAL }
```

```
SuperChargerInfo ::= CHOICE {
     sendSubscriberData                  [0] NULL,
     subscriberDataStored                [1] AgeIndicator }
```

```
AgeIndicator ::= OCTET STRING (SIZE (1..6))
```

```
    -- The internal structure of this parameter is implementation specific.
```

```
IST-SupportIndicator ::=  ENUMERATED {
    basicISTSupported                   (0),
    istCommandSupported                 (1),
    ...}
-- exception handling:
-- reception of values > 1 shall be mapped to ' istCommandSupported '
```

```
UpdateLocationRes ::= SEQUENCE {
    hlr-Number                          ISDN-AddressString,

    extensionContainer                  ExtensionContainer              OPTIONAL,
    ... }
```

```
CancelLocationArg ::= [3] SEQUENCE {
    identity                            Identity,
    cancellationType                    CancellationType                OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
CancellationType ::= ENUMERATED {
    updateProcedure                     (0),
    subscriptionWithdraw                (1),
    ...}
    -- The HLR shall not send values other than listed above
```

```
CancelLocationRes ::= SEQUENCE {
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
PurgeMS-Arg ::= [3] SEQUENCE {
    imsi                                IMSI,
    vlr-Number                          [0] ISDN-AddressString          OPTIONAL,
    sgsn-Number                         [1]  ISDN-AddressString         OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
PurgeMS-Res ::= SEQUENCE {
    freezeTMSI                          [0]  NULL                       OPTIONAL,
    freezeP-TMSI                        [1]  NULL                       OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
SendIdentificationArg ::= SEQUENCE {
    tmsi                                TMSI,
    numberOfRequestedVectors            NumberOfRequestedVectors        OPTIONAL,
    --  within a dialogue numberOfRequestedVectors shall be present in
    -- the first service request and shall not be present in subsequent
    -- service requests. If received in a subsequent  service request it
    -- shall be discarded.
    segmentationProhibited              NULL                            OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
SendIdentificationRes ::= [3] SEQUENCE {
    imsi                                IMSI                            OPTIONAL,
    -- IMSI shall be present in the first (or only) service response of a dialogue.
    -- If multiple service requests are present in a dialogue then IMSI
    -- shall not be present in any service response other than the first one.
    authenticationSetList               AuthenticationSetList           OPTIONAL,
    currentSecurityContext              [2]CurrentSecurityContext       OPTIONAL,
    extensionContainer                  [3] ExtensionContainer          OPTIONAL,
    ...}
```

```
-- authentication management types
```

```
AuthenticationSetList ::= CHOICE {
    tripletList                         [0] TripletList,
    quintupletList                      [1] QuintupletList }
```

```
TripletList ::= SEQUENCE SIZE (1..5) OF
                                        AuthenticationTriplet
```

```
QuintupletList ::= SEQUENCE SIZE (1..5) OF
                                        AuthenticationQuintuplet
```

```
AuthenticationTriplet ::= SEQUENCE {
     rand                               RAND,
     sres                               SRES,
     kc                                 Kc,
     ...}
```

```
AuthenticationQuintuplet ::= SEQUENCE {
     rand                               RAND,
     xres                               XRES,
     ck                                 CK,
     ik                                 IK,
     autn                               AUTN,
     ...}
```

```
CurrentSecurityContext ::= CHOICE {
     gsm-SecurityContextData            [0] GSM-SecurityContextData,
     umts-SecurityContextData           [1] UMTS-SecurityContextData }
```

```
GSM-SecurityContextData ::= SEQUENCE {
     kc                                 Kc,
     cksn                               Cksn,
     ... }
```

```
UMTS-SecurityContextData ::= SEQUENCE {
     ck                                 CK,
     ik                                 IK,
     ksi                                KSI,
     ... }
```

```
RAND ::= OCTET STRING (SIZE (16))
```

```
SRES ::= OCTET STRING (SIZE (4))
```

```
Kc ::= OCTET STRING (SIZE (8))
```

```
XRES ::= OCTET STRING (SIZE (4..16))
```

```
CK ::= OCTET STRING (SIZE (16))
```

```
IK ::= OCTET STRING (SIZE (16))
```

```
AUTN ::= OCTET STRING (SIZE (16))
```

```
AUTS ::= OCTET STRING (SIZE (14))
```

```
Cksn ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
KSI ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
AuthenticationFailureReportArg ::= SEQUENCE {
     imsi                               IMSI,
     failureCause                       FailureCause,
     extensionContainer                 ExtensionContainer              OPTIONAL,
     ...}
```

```
AuthenticationFailureReportRes ::= SEQUENCE {
     extensionContainer                 ExtensionContainer              OPTIONAL,
     ...}
```

```
FailureCause ::= ENUMERATED {
     wrongUserResponse  (0),
     wrongNetworkSignature  (1)}
```

```
-- gprs location registration types
```

```
UpdateGprsLocationArg ::= SEQUENCE {
    imsi                              IMSI,
    sgsn-Number                       ISDN-AddressString,
    sgsn-Address                      GSN-Address,
    extensionContainer                ExtensionContainer                OPTIONAL,
    ... ,
    sgsn-Capability                   [0] SGSN-Capability               OPTIONAL,
    informPreviousNetworkEntity       [1]  NULL                         OPTIONAL }
```

```
SGSN-Capability ::= SEQUENCE{
    solsaSupportIndicator             NULL                              OPTIONAL,
    extensionContainer                [1] ExtensionContainer            OPTIONAL,
    ... ,
    superChargerSupportedInServingNetworkEntity   [2] SuperChargerInfo  OPTIONAL ,
    gprsEnhancementsSupportIndicator  [3] NULL                          OPTIONAL,
    supportedCamelPhases              [4] SupportedCamelPhases          OPTIONAL }
```

```
GSN-Address ::= OCTET STRING (SIZE (5..17))
    -- Octets are coded according to 3GPP TS 23.003
```

```
UpdateGprsLocationRes ::= SEQUENCE {
    hlr-Number                        ISDN-AddressString,
    extensionContainer                ExtensionContainer                OPTIONAL,
    ...}
```

-- 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,
    ...,
    radioResourceList                 [7]  RadioResourceList            OPTIONAL,
    bssmap-ServiceHandover            [9]  BSSMAP-ServiceHandover       OPTIONAL,
    ranap-ServiceHandover             [8]  RANAP-ServiceHandover        OPTIONAL,
    bssmap-ServiceHandoverList        [x]  BSSMAP-ServiceHandoverList   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 3GPP TS 25.413, encoded according to the encoding scheme
    -- mandated by 3GPP TS 25.413
    -- Padding bits are included, if needed, in the least significant bits of the
    -- last octet of the octet string.
```

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

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

```
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,
    ... ,
    rab-Id                          [12] RAB-Id                         OPTIONAL,
    bssmap-ServiceHandover          [13] BSSMAP-ServiceHandover         OPTIONAL,
    ranap-ServiceHandover           [14] RANAP-ServiceHandover          OPTIONAL,
    bssmap-ServiceHandoverList      [xx] BSSMAP-ServiceHandoverList     OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2.. maxNumOfServiceHandovers) OF
                               BSSMAP-ServiceHandoverInfo
```

```
BSSMAP-ServiceHandoverInfo ::= SEQUENCE {
    bssmap-ServiceHandover          BSSMAP-ServiceHandover,
    rab-Id                          RAB-Id,
    -- RAB Identity is needed to relate the service handovers with the radio access bearers.
    ...}
```

```
maxNumOfServiceHandovers  INTEGER ::= 7
```

```
BSSMAP-ServiceHandover ::= OCTET STRING (SIZE (1))
    -- Octets are coded according the Service Handover information element in
    -- GSM 08.08.
```

```
RANAP-ServiceHandover ::= OCTET STRING (SIZE (1))
    -- Octet contains a complete Service-Handover data type
    -- as defined in 3GPP TS 25.413, encoded according to the encoding scheme
    -- mandated by 3GPP TS 25.413
    -- Padding bits are included in the least significant bits.
```

3GPP TSG CN WG4 Meeting #17 **N4-021572**
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **515** ⌘ **rev** **2** ⌘ Current version: **4.9.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 (GSM Phase 2)
R96 (Release 1996)
R97 (Release 1997)
R98 (Release 1998)
R99 (Release 1999)
Rel-4 (Release 4)
Rel-5 (Release 5)
Rel-6 (Release 6)

Reason for change:	⌘	Because of Multicall the BSSAP Service Handover List parameter should be added. Also the Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU.
Summary of change:	⌘	BSSAP Service Handover List parameter is added.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	7.6, 7.6.6.5A, 8.4.1, 8.4.4, 17.7.1

Other specs affected: ⌘

Y	N		
X		Other core specifications	⌘ 29.010 CR 083
	X	Test specifications	
	X	O&M Specifications	

Other comments: ⌘

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

7.6 Definition of parameters

Following is an alphabetic list of parameters used in the common MAP-services in clause 7.3:

Application context name	7.3.1	Refuse reason	7.3.1
Destination address	7.3.1	Release method	7.3.2
Destination reference	7.3.1	Responding address	7.3.1
Diagnostic information	7.3.4	Result	7.3.1
Originating address	7.3.1	Source	7.3.5
Originating reference	7.3.1	Specific information	7.3.1/7.3.2/7.3.4
Problem diagnostic	7.3.6	User reason	7.3.4
Provider reason	7.3.5		

Following is an alphabetic list of parameters contained in this clause:

Absent Subscriber Diagnostic SM	7.6.8.9	Invoke Id	7.6.1.1
Access connection status	7.6.9.3	ISDN Bearer Capability	7.6.3.41
		IST Alert Timer	7.6.3.66
		IST Information Withdrawn	7.6.3.68
		IST Support Indicator	7.6.3.69
Access signalling information	7.6.9.5	Kc	7.6.7.4
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Linked Id	7.6.1.2
Additional Location Estimate	7.6.11.21	LMSI	7.6.2.16
Additional number	7.6.2.46	Location Information	7.6.2.30
Additional signal info	7.6.9.10	Location update type	7.6.9.6
Additional SM Delivery Outcome	7.6.8.11	Long Forwarded-to Number	7.6.2.22A
		Long FTN Supported	7.6.2.22B
Age Indicator	7.6.3.72	Lower Layer Compatibility	7.6.3.42
		LSA Information	7.6.3.56
		LSA Information Withdraw	7.6.3.58
Alert Reason	7.6.8.8	MC Information	7.6.4.48
Alert Reason Indicator	7.6.8.10	MC Subscription Data	7.6.4.47
Alerting Pattern	7.6.3.44	Mobile Not Reachable Reason	7.6.3.51
All GPRS Data	7.6.3.53	Modification request for CSI	7.6.3.81
All Information Sent	7.6.1.5	Modification request for SS Information	7.6.3.82
AN-apdu	7.6.9.1	More Messages To Send	7.6.8.7
APN	7.6.2.42	MS ISDN	7.6.2.17
Authentication set list	7.6.7.1	MSC number	7.6.2.11
B-subscriber Address	7.6.2.36	MSIsdn-Alert	7.6.2.29
B subscriber Number	7.6.2.48	Multicall Bearer Information	7.6.2.52
B subscriber subaddress	7.6.2.49	Multiple Bearer Requested	7.6.2.53
Basic Service Group	7.6.4.40	Multiple Bearer Not Supported	7.6.2.54
Bearer service	7.6.4.38	MWD status	7.6.8.3
BSSMAP Service Handover	7.6.6.5		
BSSMAP Service Handover List	7.6.6.5A		
Call Barring Data	7.6.3.83	NbrUser	7.6.4.45
Call barring feature	7.6.4.19	Network Access Mode	7.6.3.50
Call barring information	7.6.4.18	Network node number	7.6.2.43
Call Direction	7.6.5.8	Network resources	7.6.10.1
Call Forwarding Data	7.6.3.84	Network signal information	7.6.9.8
Call Info	7.6.9.9	New password	7.6.4.20
Call reference	7.6.5.1	No reply condition timer	7.6.4.7

Call Termination Indicator	7.6.3.67
Called number	7.6.2.24
Calling number	7.6.2.25
CAMEL Subscription Info	7.6.3.78
CAMEL Subscription Info Withdraw	7.6.3.38
Cancellation Type	7.6.3.52
Category	7.6.3.1
CCBS Feature	7.6.5.8
CCBS Request State	7.6.4.49
Channel Type	7.6.5.9
Chosen Channel	7.6.5.10
Chosen Radio Resource Information	7.6.6.10B
Ciphering mode	7.6.7.7
Cksn	7.6.7.5
CLI Restriction	7.6.4.5
CM service type	7.6.9.2
Complete Data List Included	7.6.3.54
CS Allocation Retention priority	7.6.3.87
CUG feature	7.6.3.26
CUG index	7.6.3.25
CUG info	7.6.3.22
CUG interlock	7.6.3.24
CUG Outgoing Access indicator	7.6.3.8
CUG subscription	7.6.3.23
CUG Subscription Flag	7.6.3.37
Current location area Id	7.6.2.6
Current password	7.6.4.21
Deferred MT-LR Data	7.6.11.3
Deferred MT-LR Response Indicator	7.6.11.2
eMLPP Information	7.6.4.41
Encryption Information	7.6.6.9
Equipment status	7.6.3.2
Extensible Basic Service Group	7.6.3.5
Extensible Bearer service	7.6.3.3
Extensible Call barring feature	7.6.3.21
Extensible Call barring information	7.6.3.20
Extensible Call barring information for CSE	7.6.3.79
Extensible Forwarding feature	7.6.3.16
Extensible Forwarding info	7.6.3.15
Extensible Forwarding information for CSE	7.6.3.80
Extensible Forwarding Options	7.6.3.18
Extensible No reply condition timer	7.6.3.19
Extensible QoS-Subscribed	7.6.3.74
Extensible SS-Data	7.6.3.29
Extensible SS-Info	7.6.3.14
Extensible SS-Status	7.6.3.17
Extensible Teleservice	7.6.3.4
External Signal Information	7.6.9.4
Failure Cause	7.6.7.9
Forwarded-to number	7.6.2.22
Forwarded-to subaddress	7.6.2.23
Forwarding feature	7.6.4.16
Forwarding information	7.6.4.15
Forwarding Options	7.6.4.6
GGSN address	7.6.2.40
GGSN number	7.6.2.41
GMSC CAMEL Subscription Info	7.6.3.34
GPRS enhancements support indicator	7.6.3.73
GPRS Node Indicator	7.6.8.14
North American Equal Access preferred Carrier Id	7.6.2.34
Number Portability Status	7.6.5.14
ODB Data	7.6.3.85
ODB General Data	7.6.3.9
ODB HPLMN Specific Data	7.6.3.10
OMC Id	7.6.2.18
Originally dialled number	7.6.2.26
Originating entity number	7.6.2.10
Override Category	7.6.4.4
P-TMSI	7.6.2.47
PDP-Address	7.6.2.45
PDP-Context identifier	7.6.3.55
PDP-Type	7.6.2.44
Pre-paging supported	7.6.5.15
Previous location area Id	7.6.2.4
Protocol Id	7.6.9.7
Provider error	7.6.1.3
QoS-Subscribed	7.6.3.47
Radio Resource Information	7.6.6.10
Radio Resource List	7.6.6.10A
RANAP Service Handover	7.6.6.6
Rand	7.6.7.2
Regional Subscription Data	7.6.3.11
Regional Subscription Response	7.6.3.12
Relocation Number List	7.6.2.19A
Requested Info	7.6.3.31
Requested Subscription Info	7.6.3.86
Roaming number	7.6.2.19
Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Roaming Restriction Due To Unsupported Feature	7.6.3.13
Current Security Context	7.6.7.8
Selected RAB ID	7.6.2.56
Service centre address	7.6.2.27
Serving Cell Id	7.6.2.37
SGSN address	7.6.2.39
SGSN CAMEL Subscription Info	7.6.3.75
SGSN number	7.6.2.38
SIWF Number	7.6.2.35
SoLSA Support Indicator	7.6.3.57
SM Delivery Outcome	7.6.8.6
SM-RP-DA	7.6.8.1
SM-RP-MTI	7.6.8.16
SM-RP-OA	7.6.8.2
SM-RP-PRI	7.6.8.5
SM-RP-SMEA	7.6.8.17
SM-RP-UI	7.6.8.4
Sres	7.6.7.3
SS-Code	7.6.4.1
SS-Data	7.6.4.3
SS-Event	7.6.4.42
SS-Event-Data	7.6.4.43
SS-Info	7.6.4.24
SS-Status	7.6.4.2
Stored location area Id	7.6.2.5
Subscriber State	7.6.3.30
Subscriber Status	7.6.3.7
Super-Charger Supported in HLR	7.6.3.70
Super-Charger Supported in Serving Network Entity	7.6.3.71
Supported CAMEL Phases in VLR	7.6.3.36
Supported CAMEL Phases in SGSN	7.6.3.36A
Supported GAD Shapes	7.6.11.20
Supported LCS Capability Sets	7.6.11.17

GPRS Subscription Data	7.6.3.46
GPRS Subscription Data Withdraw	7.6.3.45
GPRS Support Indicator	7.6.8.15
Group Id	7.6.2.33
GSM bearer capability	7.6.3.6
Guidance information	7.6.4.22
Handover number	7.6.2.21
High Layer Compatibility	7.6.3.43
HLR Id	7.6.2.15
HLR number	7.6.2.13
HO-Number Not Required	7.6.6.7
IMEI	7.6.2.3
IMSI	7.6.2.1
Integrity Protection Information	7.6.6.8
Inter CUG options	7.6.3.27
Intra CUG restrictions	7.6.3.28
Suppress T-CSI	7.6.3.33
Suppression of Announcement	7.6.3.32
Target cell Id	7.6.2.8
Target location area Id	7.6.2.7
Target RNC Id	7.6.2.8A
Target MSC number	7.6.2.12
Teleservice	7.6.4.39
TMSI	7.6.2.2
Trace reference	7.6.10.2
Trace type	7.6.10.3
User error	7.6.1.4
USSD Data Coding Scheme	7.6.4.36
USSD String	7.6.4.37
UU Data	7.6.5.12
UUS CF Interaction	7.6.5.13
VBS Data	7.6.3.40
VGCS Data	7.6.3.39
VLR CAMEL Subscription Info	7.6.3.35
VLR number	7.6.2.14
VPLMN address allowed	7.6.3.48
Zone Code	7.6.2.28

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

7.6.6.5 BSSMAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 48.008

7.6.6.5A BSSMAP Service Handover List

This parameter refers to the list of Service Handover information elements defined in 3GPP TS 48.008.

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

8.4.1 MAP_PREPARE_HANDOVER 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_HANDOVER 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_HANDOVER

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(=)		
RAB ID	C	C(=)		
BSSMAP Service Handover	C	C(=)		
BSSMAP Service Handover List	C	C(=)		
RANAP Service Handover	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 clause 7.6.1.

Target Cell Id

For definition of this parameter see clause 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 3GPP TS 23.009.

Target RNC Id

For definition of this parameter see clause 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 3GPP TS 23.009.

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

- 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 clause 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 clause 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 clause 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 clause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see clause 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 UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 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 clause 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.

RAB ID

For definition of this parameter see subclause 7.6.2. This parameter shall be included when MSC-A supports multiple bearers and access network protocol is BSSAP and the RAB ID has a value other than 1.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is BSSAP.

Handover Number

For definition of this parameter see clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 7.6.1. The following errors defined in clause 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 clause 7.6.1.

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

8.4.4 MAP_FORWARD_ACCESS_SIGNALLING service

8.4.4.1 Definition

This service is used between MSC-A and MSC-B (E-interface) to pass information to be forwarded to the A-interface or Iu-interface of MSC-B.

The MAP_FORWARD_ACCESS_SIGNALLING service is a non-confirmed service using the primitives from table 8.4/4.

8.4.4.2 Service primitives

Table 8.4/4: MAP_FORWARD_ACCESS_SIGNALLING

Parameter name	Request	Indication
Invoke Id	M	M(=)
Integrity Protection Information	C	C(=)
Encryption Information	C	C(=)
Key Status	C	C(=)
AN-APDU	M	M(=)
Allowed GSM Algorithms	C	C(=)
Allowed UMTS Algorithms	C	C(=)
Radio Resource Information	C	C(=)
Radio Resource List	C	C(=)
BSSMAP Service Handover	C	C(=)
BSSMAP Service Handover List	C	C(=)
RANAP Service Handover	C	C(=)

8.4.4.3 Parameter use

For the definition and use of all parameters and errors, see clause 7.6.1.

Invoke Id

For definition of this parameter see clause 7.6.1.

Integrity Protection Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Encryption Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Key Status

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

This parameters includes allowed GSM algorithms. This GSM parameter shall be included if the encapsulated PDU is RANAP Security Mode Command and there is an indication that the UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if Integrity Protection Information and Encryption Information are not available and the encapsulated PDU is BSSMAP Cipher Mode Command.

Radio Resource Information

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request. If the parameter Radio Resource List is sent, the parameter Radio Resource Information shall not be sent.

Radio Resource List

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter Radio Resource Information is sent, the parameter Radio Resource List shall not be sent.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request ~~or BSSMAP Assignment Request~~. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is BSSMAP Assignment Request ~~or RANAP RAB Assignment Request~~.

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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
MAP-MS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-MS-DataTypes (11) version7 (7)}

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

   -- location registration types
   UpdateLocationArg,
   UpdateLocationRes,
   CancelLocationArg,
   CancelLocationRes,
   PurgeMS-Arg,
   PurgeMS-Res,
   SendIdentificationArg,
   SendIdentificationRes,
   UpdateGprsLocationArg,
   UpdateGprsLocationRes,
```

```
   IST-SupportIndicator,
   SupportedLCS-CapabilitySets,

   -- gprs location registration types
   GSN-Address,

   -- handover types
   ForwardAccessSignalling-Arg,
   PrepareHO-Arg,
   PrepareHO-Res,
   PrepareSubsequentHO-Arg,
   PrepareSubsequentHO-Res,
   ProcessAccessSignalling-Arg,
   SendEndSignal-Arg,
   SendEndSignal-Res,


   -- authentication management types
   SendAuthenticationInfoArg,
   SendAuthenticationInfoRes,
   AuthenticationFailureReportArg,
   AuthenticationFailureReportRes,

   -- security management types
   EquipmentStatus,
   Kc,

   -- subscriber management types
   InsertSubscriberDataArg,
   InsertSubscriberDataRes,
   LSAIdentity,
   DeleteSubscriberDataArg,
   DeleteSubscriberDataRes,
   Ext-QoS-Subscribed,
   SubscriberData,
   ODB-Data,
   SubscriberStatus,
   ZoneCodeList,
   maxNumOfZoneCodes,
   O-CSI,
   D-CSI,
   O-BcsmCamelTDPCriteriaList,
   T-BCSM-CAMEL-TDP-CriteriaList,
   SS-CSI,
   ServiceKey,
   DefaultCallHandling,
   CamelCapabilityHandling,
   BasicServiceCriteria,
   SupportedCamelPhases,
   maxNumOfCamelTDPData,
   CUG-Index,
   CUG-Info,
   CUG-Interlock,
   InterCUG-Restrictions,
   IntraCUG-Options,
   NotificationToMSUser,
   QoS-Subscribed,
   IST-AlertTimerValue,
   T-CSI,
   T-BcsmTriggerDetectionPoint,
   APN,

   -- fault recovery types
   ResetArg,
   RestoreDataArg,
   RestoreDataRes,

-- provide subscriber info types
   GeographicalInformation,


   -- subscriber information enquiry types
   ProvideSubscriberInfoArg,
   ProvideSubscriberInfoRes,
   SubscriberInfo,
   LocationInformation,
   SubscriberState,
```

```
   -- any time information enquiry types
   AnyTimeInterrogationArg,
   AnyTimeInterrogationRes,

   -- any time information handling types
   AnyTimeSubscriptionInterrogationArg,
   AnyTimeSubscriptionInterrogationRes,
   AnyTimeModificationArg,
   AnyTimeModificationRes,

   -- subscriber data modification notification types
   NoteSubscriberDataModifiedArg,
   NoteSubscriberDataModifiedRes,

   -- gprs location information retrieval types
   SendRoutingInfoForGprsArg,
   SendRoutingInfoForGprsRes,

   -- failure reporting types
   FailureReportArg,
   FailureReportRes,

   -- gprs notification types
   NoteMsPresentForGprsArg,
   NoteMsPresentForGprsRes,

   -- Mobility Management types
   NoteMM-EventArg,
   NoteMM-EventRes



;

IMPORTS
   maxNumOfSS,
   SS-SubscriptionOption,
   SS-List,
   SS-ForBS-Code,
   Password
FROM MAP-SS-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-DataTypes (14) version7 (7)}

   SS-Code
FROM MAP-SS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-Code (15) version7 (7)}

   Ext-BearerServiceCode
FROM MAP-BS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-BS-Code (20) version7 (7)}

   Ext-TeleserviceCode
FROM MAP-TS-Code {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-TS-Code (19) version7 (7)}


   AddressString,
   ISDN-AddressString,
   ISDN-SubaddressString,
   FTN-AddressString,
   AccessNetworkSignalInfo,
   IMSI,
   TMSI,
   HLR-List,
   LMSI,
   Identity,
   GlobalCellId,
   CellGlobalIdOrServiceAreaIdOrLAI,
   Ext-BasicServiceCode,
   NAEA-PreferredCI,
   EMLPP-Info,
   MC-SS-Info,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
```

```
   LCSClientInternalID,
   Ext-SS-Status



FROM MAP-CommonDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-CommonDataTypes (18) version7 (7)}

   ExtensionContainer
FROM MAP-ExtensionDataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version7 (7)}

   AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
   ccitt identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ER-DataTypes (17) version7 (7)}


;


-- location registration types
```

```
UpdateLocationArg ::= SEQUENCE {
     imsi                              IMSI,

     msc-Number                        [1] ISDN-AddressString,
     vlr-Number                        ISDN-AddressString,
     lmsi                              [10] LMSI OPTIONAL,
     extensionContainer                ExtensionContainer                OPTIONAL,
     ... ,
     vlr-Capability                    [6] VLR-Capability                OPTIONAL,
     informPreviousNetworkEntity       [11] NULL                         OPTIONAL }
```

```
VLR-Capability ::= SEQUENCE{
     supportedCamelPhases              [0] SupportedCamelPhases          OPTIONAL,
     extensionContainer                ExtensionContainer                OPTIONAL,
     ... ,
     solsaSupportIndicator             [2] NULL                          OPTIONAL,
     istSupportIndicator               [1] IST-SupportIndicator          OPTIONAL,
     superChargerSupportedInServingNetworkEntity   [3] SuperChargerInfo  OPTIONAL,
     longFTN-Supported                 [4]  NULL                         OPTIONAL,
     supportedLCS-CapabilitySets       [5]  SupportedLCS-CapabilitySets  OPTIONAL }
```

```
SuperChargerInfo ::= CHOICE {
     sendSubscriberData                [0] NULL,
     subscriberDataStored              [1] AgeIndicator }
```

```
AgeIndicator ::= OCTET STRING (SIZE (1..6))
     -- The internal structure of this parameter is implementation specific.
```

```
IST-SupportIndicator ::=  ENUMERATED {
     basicISTSupported                 (0),
     istCommandSupported               (1),
     ...}
-- exception handling:
-- reception of values > 1 shall be mapped to ' istCommandSupported '
```

```
SupportedLCS-CapabilitySets ::= BIT STRING {
     lcsCapabilitySet1 (0),
     lcsCapabilitySet2 (1) } (SIZE (2..16))
-- Core network signalling capability set1 indicates LCS Release98 or Release99 version.
-- Core network signalling capability set2 indicates LCS Release4 or later version.
-- A node shall mark in the BIT STRING all LCS capability sets it supports.
-- If no bit is set then the sending node does not support LCS.
-- If the parameter is not sent by an VLR then the VLR may support at most capability set1.
-- If the parameter is not sent by an SGSN then no support for LCS is assumed.
-- An SGSN is not allowed to indicate support of capability set1.
-- Other bits than listed above shall be discarded.
```

```
UpdateLocationRes ::= SEQUENCE {
    hlr-Number                          ISDN-AddressString,

    extensionContainer                  ExtensionContainer              OPTIONAL,
    ... }
```

```
CancelLocationArg ::= [3] SEQUENCE {
    identity                            Identity,
    cancellationType                    CancellationType                OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
CancellationType ::= ENUMERATED {
    updateProcedure                     (0),
    subscriptionWithdraw                (1),
    ...}
    -- The HLR shall not send values other than listed above
```

```
CancelLocationRes ::= SEQUENCE {
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
PurgeMS-Arg ::= [3] SEQUENCE {
    imsi                                IMSI,
    vlr-Number                          [0] ISDN-AddressString          OPTIONAL,
    sgsn-Number                         [1]  ISDN-AddressString         OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
PurgeMS-Res ::= SEQUENCE {
    freezeTMSI                          [0]  NULL                       OPTIONAL,
    freezeP-TMSI                        [1]  NULL                       OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
SendIdentificationArg ::= SEQUENCE {
    tmsi                                TMSI,
    numberOfRequestedVectors            NumberOfRequestedVectors        OPTIONAL,
    -- within a dialogue numberOfRequestedVectors shall be present in
    -- the first service request and shall not be present in subsequent
    -- service requests. If received in a subsequent service request it
    -- shall be discarded.
    segmentationProhibited              NULL                            OPTIONAL,
    extensionContainer                  ExtensionContainer              OPTIONAL,
    ...}
```

```
SendIdentificationRes ::= [3] SEQUENCE {
    imsi                                IMSI                            OPTIONAL,
    -- IMSI shall be present in the first (or only) service response of a dialogue.
    -- If multiple service requests are present in a dialogue then IMSI
    -- shall not be present in any service response other than the first one.
    authenticationSetList               AuthenticationSetList           OPTIONAL,
    currentSecurityContext              [2]CurrentSecurityContext       OPTIONAL,
    extensionContainer                  [3] ExtensionContainer          OPTIONAL,
    ...}
```

```
-- authentication management types
```

```
AuthenticationSetList ::= CHOICE {
    tripletList                         [0] TripletList,
    quintupletList                      [1] QuintupletList }
```

```
TripletList ::= SEQUENCE SIZE (1..5) OF
                                        AuthenticationTriplet
```

```
QuintupletList ::= SEQUENCE SIZE (1..5) OF
                                        AuthenticationQuintuplet
```

```
AuthenticationTriplet ::= SEQUENCE {
    rand                                RAND,
    sres                                SRES,
    kc                                  Kc,
    ...}
```

```
AuthenticationQuintuplet ::= SEQUENCE {
     rand                                RAND,
     xres                                XRES,
     ck                                  CK,
     ik                                  IK,
     autn                                AUTN,
     ...}
```

```
CurrentSecurityContext ::= CHOICE {
     gsm-SecurityContextData             [0] GSM-SecurityContextData,
     umts-SecurityContextData            [1] UMTS-SecurityContextData }
```

```
GSM-SecurityContextData ::= SEQUENCE {
     kc                                  Kc,
     cksn                                Cksn,
     ... }
```

```
UMTS-SecurityContextData ::= SEQUENCE {
     ck                                  CK,
     ik                                  IK,
     ksi                                 KSI,
     ... }
```

```
RAND ::= OCTET STRING (SIZE (16))
```

```
SRES ::= OCTET STRING (SIZE (4))
```

```
Kc ::= OCTET STRING (SIZE (8))
```

```
XRES ::= OCTET STRING (SIZE (4..16))
```

```
CK ::= OCTET STRING (SIZE (16))
```

```
IK ::= OCTET STRING (SIZE (16))
```

```
AUTN ::= OCTET STRING (SIZE (16))
```

```
AUTS ::= OCTET STRING (SIZE (14))
```

```
Cksn ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
KSI ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
AuthenticationFailureReportArg ::= SEQUENCE {
     imsi                                IMSI,
     failureCause                        FailureCause,
     extensionContainer                  ExtensionContainer              OPTIONAL,
     ... ,
     re-attempt                          BOOLEAN                         OPTIONAL,
     accessType                          AccessType                      OPTIONAL,
     rand                                RAND                            OPTIONAL,
     vlr-Number                          [0] ISDN-AddressString          OPTIONAL,
     sgsn-Number                         [1] ISDN-AddressString          OPTIONAL }
```

```
AccessType ::= ENUMERATED {
     call (0),
     emergencyCall (1),
     locationUpdating (2),
     supplementaryService (3),
     shortMessage (4),
     gprsAttach (5),
     routingAreaUpdating (6),
     serviceRequest (7),
     pdpContextActivation (8),
     pdpContextDeactivation (9),
     ...}
     -- exception handling:
     -- received values greater than 9 shall be ignored.
```

```
AuthenticationFailureReportRes ::= SEQUENCE {
     extensionContainer                  ExtensionContainer              OPTIONAL,
     ...}
```

```
FailureCause ::= ENUMERATED {
```

```
    wrongUserResponse  (0),
    wrongNetworkSignature  (1)}
```

-- gprs location registration types

```
UpdateGprsLocationArg ::= SEQUENCE {
    imsi                              IMSI,
    sgsn-Number                       ISDN-AddressString,
    sgsn-Address                      GSN-Address,
    extensionContainer                ExtensionContainer                OPTIONAL,
    ... ,
    sgsn-Capability                   [0] SGSN-Capability               OPTIONAL,
    informPreviousNetworkEntity       [1]  NULL                         OPTIONAL }
```

```
SGSN-Capability ::= SEQUENCE{
    solsaSupportIndicator             NULL                              OPTIONAL,
    extensionContainer                [1] ExtensionContainer            OPTIONAL,
    ... ,
    superChargerSupportedInServingNetworkEntity   [2] SuperChargerInfo  OPTIONAL ,
    gprsEnhancementsSupportIndicator  [3] NULL                          OPTIONAL,
    supportedCamelPhases              [4] SupportedCamelPhases          OPTIONAL,
    supportedLCS-CapabilitySets       [5]  SupportedLCS-CapabilitySets  OPTIONAL }
```

```
GSN-Address ::= OCTET STRING (SIZE (5..17))
    -- Octets are coded according to TS 3GPP TS 23.003 [17]
```

```
UpdateGprsLocationRes ::= SEQUENCE {
    hlr-Number                        ISDN-AddressString,
    extensionContainer                ExtensionContainer                OPTIONAL,
    ...}
```

-- 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,
    ...,
    radioResourceList                 [7]  RadioResourceList            OPTIONAL,
    bssmap-ServiceHandover            [9]  BSSMAP-ServiceHandover       OPTIONAL,
    ranap-ServiceHandover             [8]  RANAP-ServiceHandover        OPTIONAL,
    bssmap-ServiceHandoverList        [x]  BSSMAP-ServiceHandoverList   OPTIONAL }
```

```
AllowedGSM-Algorithms ::= OCTET STRING (SIZE (1))
    -- internal structure is coded as Algorithm identifier octet from
    -- Permitted Algorithms defined in 3GPP 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 3GPP TS 25.413, encoded according to the encoding scheme
    -- mandated by 3GPP TS 25.413.
    -- Padding bits are included, if needed, in the least significant bits of the
    -- last octet of the octet string.
```

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

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

```
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,
    ... ,
    rab-Id                          [12] RAB-Id                       OPTIONAL,
    bssmap-ServiceHandover          [13] BSSMAP-ServiceHandover       OPTIONAL,
    ranap-ServiceHandover           [14] RANAP-ServiceHandover        OPTIONAL,
    bssmap-ServiceHandoverList      [xx] BSSMAP-ServiceHandoverList   OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2.. maxNumOfServiceHandovers) OF
                               BSSMAP-ServiceHandoverInfo
```

```
BSSMAP-ServiceHandoverInfo ::= SEQUENCE {
    bssmap-ServiceHandover          BSSMAP-ServiceHandover,
    rab-Id                          RAB-Id,
    -- RAB Identity is needed to relate the service handovers with the radio access bearers.
    ...}
```

```
maxNumOfServiceHandovers  INTEGER ::= 7
```

```
BSSMAP-ServiceHandover ::= OCTET STRING (SIZE (1))
    -- Octets are coded according the Service Handover information element in
    -- 3GPP TS 48.008.
```

```
RANAP-ServiceHandover ::= OCTET STRING (SIZE (1))
    -- Octet contains a complete Service-Handover data type
    -- as defined in 3GPP TS 25.413, encoded according to the encoding scheme
    -- mandated by 3GPP TS 25.413
    -- Padding bits are included in the least significant bits.
```

3GPP TSG CN WG4 Meeting #17 **N4-021573**
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **516** ⌘ **rev** **2** ⌘ Current version: **5.3.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	Because of Multicall the BSSAP Service Handover List parameter should be added. Also the Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU.
Summary of change:	⌘	BSSAP Service Handover List parameter is added.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	7.6, 7.6.6.5A, 8.4.1, 8.4.4, 17.7.1

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications	⌘	29.010 CR 084
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

7.6 Definition of parameters

Following is an alphabetic list of parameters used in the common MAP-services in clause 7.3:

Application context name	7.3.1	Refuse reason	7.3.1
Destination address	7.3.1	Release method	7.3.2
Destination reference	7.3.1	Responding address	7.3.1
Diagnostic information	7.3.4	Result	7.3.1
Originating address	7.3.1	Source	7.3.5
Originating reference	7.3.1	Specific information	7.3.1/7.3.2/7.3.4
Problem diagnostic	7.3.6	User reason	7.3.4
Provider reason	7.3.5		

Following is an alphabetic list of parameters contained in this clause:

Absent Subscriber Diagnostic SM	7.6.8.9	Invoke Id	7.6.1.1
Access connection status	7.6.9.3	ISDN Bearer Capability	7.6.3.41
		IST Alert Timer	7.6.3.66
		IST Information Withdrawn	7.6.3.68
		IST Support Indicator	7.6.3.69
		LCS Codeword	7.6.11.18
		LCS Codeword Applicability	7.6.11.19
		LCS Information	7.6.3.60
		LCS Service Type Id	7.6.11.15
		LCS Codeword Notification	7.6.11.22
Access signalling information	7.6.9.5	Kc	7.6.7.4
Additional Absent Subscriber Diagnostic SM	7.6.8.12	Linked Id	7.6.1.2
Additional Location Estimate	7.6.11.21	LMSI	7.6.2.16
Additional number	7.6.2.46	Location Information	7.6.2.30
		Location Information for GPRS	7.6.2.30a
Additional signal info	7.6.9.10	Location update type	7.6.9.6
Additional SM Delivery Outcome	7.6.8.11	Long Forwarded-to Number	7.6.2.22A
		Long FTN Supported	7.6.2.22B
Age Indicator	7.6.3.72	Lower Layer Compatibility	7.6.3.42
		LSA Information	7.6.3.56
		LSA Information Withdraw	7.6.3.58
Alert Reason	7.6.8.8	MC Information	7.6.4.48
Alert Reason Indicator	7.6.8.10	MC Subscription Data	7.6.4.47
Alerting Pattern	7.6.3.44	Mobile Not Reachable Reason	7.6.3.51
All GPRS Data	7.6.3.53	Modification request for CSI	7.6.3.81
All Information Sent	7.6.1.5	Modification request for SS Information	7.6.3.82
AN-apdu	7.6.9.1	More Messages To Send	7.6.8.7
APN	7.6.2.42	MS ISDN	7.6.2.17
Authentication set list	7.6.7.1	MSC number	7.6.2.11
B-subscriber Address	7.6.2.36	MSIsdn-Alert	7.6.2.29
B subscriber Number	7.6.2.48	Multicall Bearer Information	7.6.2.52
B subscriber subaddress	7.6.2.49	Multiple Bearer Requested	7.6.2.53
Basic Service Group	7.6.4.40	Multiple Bearer Not Supported	7.6.2.54
Bearer service	7.6.4.38	MWD status	7.6.8.3
BSSMAP Service Handover	7.6.6.5		
BSSMAP Service Handover List	7.6.6.5A		
Call Barring Data	7.6.3.83	NbrUser	7.6.4.45

Call barring feature	7.6.4.19
Call barring information	7.6.4.18
Call Direction	7.6.5.8
Call Forwarding Data	7.6.3.84
Call Info	7.6.9.9
Call reference	7.6.5.1
Call Termination Indicator	7.6.3.67
Called number	7.6.2.24
Calling number	7.6.2.25
CAMEL Subscription Info	7.6.3.78
CAMEL Subscription Info Withdraw	7.6.3.38
Cancellation Type	7.6.3.52
Category	7.6.3.1
CCBS Feature	7.6.5.8
CCBS Request State	7.6.4.49
Channel Type	7.6.5.9
Chosen Channel	7.6.5.10
Chosen Radio Resource Information	7.6.6.10B
Ciphering mode	7.6.7.7
Cksn	7.6.7.5
CLI Restriction	7.6.4.5
CM service type	7.6.9.2
Complete Data List Included	7.6.3.54
CS Allocation Retention priority	7.6.3.87
CS LCS Not Supported by UE	7.6.11.9
CUG feature	7.6.3.26
CUG index	7.6.3.25
CUG info	7.6.3.22
CUG interlock	7.6.3.24
CUG Outgoing Access indicator	7.6.3.8
CUG subscription	7.6.3.23
CUG Subscription Flag	7.6.3.37
Current location area Id	7.6.2.6
Current password	7.6.4.21
Deferred MT-LR Data	7.6.11.3
Deferred MT-LR Response Indicator	7.6.11.2
eMLPP Information	7.6.4.41
Encryption Information	7.6.6.9
Equipment status	7.6.3.2
Extensible Basic Service Group	7.6.3.5
Extensible Bearer service	7.6.3.3
Extensible Call barring feature	7.6.3.21
Extensible Call barring information	7.6.3.20
Extensible Call barring information for CSE	7.6.3.79
Extensible Forwarding feature	7.6.3.16
Extensible Forwarding info	7.6.3.15
Extensible Forwarding information for CSE	7.6.3.80
Extensible Forwarding Options	7.6.3.18
Extensible No reply condition timer	7.6.3.19
Extensible QoS-Subscribed	7.6.3.74
Extensible SS-Data	7.6.3.29
Extensible SS-Info	7.6.3.14
Extensible SS-Status	7.6.3.17
Extensible Teleservice	7.6.3.4
External Signal Information	7.6.9.4
Failure Cause	7.6.7.9
Forwarded-to number	7.6.2.22
Forwarded-to subaddress	7.6.2.23
Forwarding feature	7.6.4.16
Forwarding information	7.6.4.15
Network Access Mode	7.6.3.50
Network node number	7.6.2.43
Network resources	7.6.10.1
Network signal information	7.6.9.8
New password	7.6.4.20
No reply condition timer	7.6.4.7
North American Equal Access preferred Carrier Id	7.6.2.34
Number Portability Status	7.6.5.14
ODB Data	7.6.3.85
ODB General Data	7.6.3.9
ODB HPLMN Specific Data	7.6.3.10
OMC Id	7.6.2.18
Originally dialled number	7.6.2.26
Originating entity number	7.6.2.10
Override Category	7.6.4.4
P-TMSI	7.6.2.47
PDP-Address	7.6.2.45
PDP-Context identifier	7.6.3.55
PDP-Type	7.6.2.44
Pre-paging supported	7.6.5.15
Previous location area Id	7.6.2.4
Protocol Id	7.6.9.7
Provider error	7.6.1.3
PS LCS Not Supported by UE	7.6.11.10
QoS-Subscribed	7.6.3.47
Radio Resource Information	7.6.6.10
Radio Resource List	7.6.6.10A
RANAP Service Handover	7.6.6.6
Rand	7.6.7.2
Regional Subscription Data	7.6.3.11
Regional Subscription Response	7.6.3.12
Relocation Number List	7.6.2.19A
Requested Info	7.6.3.31
Requested Subscription Info	7.6.3.86
Roaming number	7.6.2.19
Roaming Restricted In SGSN Due To Unsupported Feature	7.6.3.49
Roaming Restriction Due To Unsupported Feature	7.6.3.13
Current Security Context	7.6.7.8
Selected RAB ID	7.6.2.56
Service centre address	7.6.2.27
Serving Cell Id	7.6.2.37
SGSN address	7.6.2.39
SGSN CAMEL Subscription Info	7.6.3.75
SGSN number	7.6.2.38
SIWF Number	7.6.2.35
SoLSA Support Indicator	7.6.3.57
SM Delivery Outcome	7.6.8.6
SM-RP-DA	7.6.8.1
SM-RP-MTI	7.6.8.16
SM-RP-OA	7.6.8.2
SM-RP-PRI	7.6.8.5
SM-RP-SMEA	7.6.8.17
SM-RP-UI	7.6.8.4
Sres	7.6.7.3
SS-Code	7.6.4.1
SS-Data	7.6.4.3
SS-Event	7.6.4.42
SS-Event-Data	7.6.4.43
SS-Info	7.6.4.24
SS-Status	7.6.4.2
Stored location area Id	7.6.2.5
Subscriber State	7.6.3.30
Subscriber Status	7.6.3.7

Forwarding Options	7.6.4.6
GERAN Classmark	7.6.6.4
GGSN address	7.6.2.40
GGSN number	7.6.2.41
GMSC CAMEL Subscription Info	7.6.3.34
GPRS enhancements support indicator	7.6.3.73
GPRS Node Indicator	7.6.8.14
GPRS Subscription Data	7.6.3.46
GPRS Subscription Data Withdraw	7.6.3.45
GPRS Support Indicator	7.6.8.15
Group Id	7.6.2.33
GSM bearer capability	7.6.3.6
gsmSCF Address	7.6.2.58
gsmSCF Initiated Call	7.6.3.c
Guidance information	7.6.4.22
Handover number	7.6.2.21
High Layer Compatibility	7.6.3.43
HLR Id	7.6.2.15
HLR number	7.6.2.13
HO-Number Not Required	7.6.6.7
IMEI	7.6.2.3
IMSI	7.6.2.1
Integrity Protection Information	7.6.6.8
Inter CUG options	7.6.3.27
Intra CUG restrictions	7.6.3.28
Super-Charger Supported in HLR	7.6.3.70
Super-Charger Supported in Serving Network Entity	7.6.3.71
Offered Camel4 CSIs	7.6.3.36D
Offered Camel4 CSIs in GMSC	
Offered Camel4 CSIs in VMSC	7.6.3.36E
Offered Camel4 CSIs in VLR	
Offered Camel4 CSIs in SGSN	7.6.3.36F
Offered Camel4 Functionalities	
	7.6.3.36B
	7.6.3.36C
	7.6.3.36G
Supported CAMEL Phases in VLR	7.6.3.36
Supported CAMEL Phases in SGSN	7.6.3.36A
Supported GAD Shapes	7.6.11.20
Supported LCS Capability Sets	7.6.11.17
Suppress Incoming Call Barring	7.6.3.b
Suppress T-CSI	7.6.3.33
Suppress VT-CSI	7.6.3.a
Suppression of Announcement	7.6.3.32
Target cell Id	7.6.2.8
Target location area Id	7.6.2.7
Target RNC Id	7.6.2.8A
Target MSC number	7.6.2.12
Teleservice	7.6.4.39
TMSI	7.6.2.2
Trace reference	7.6.10.2
Trace type	7.6.10.3
User error	7.6.1.4
USSD Data Coding Scheme	7.6.4.36
USSD String	7.6.4.37
UU Data	7.6.5.12
UUS CF Interaction	7.6.5.13
VBS Data	7.6.3.40
VGCS Data	7.6.3.39
VLR CAMEL Subscription Info	7.6.3.35
VLR number	7.6.2.14
VPLMN address allowed	7.6.3.48
Zone Code	7.6.2.28

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

7.6.6.5 BSSMAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 48.008

7.6.6.5A BSSMAP Service Handover List

This parameter refers to the list of Service Handover information elements defined in 3GPP TS 48.008.

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

8.4.1 MAP_PREPARE_HANDOVER 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_HANDOVER 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_HANDOVER

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(=)		
RAB ID	C	C(=)		
GERAN Classmark	C	C(=)		
BSSMAP Service Handover	C	C(=)		
BSSMAP Service Handover List	C	C(=)		
RANAP Service Handover	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 clause 7.6.1.

Target Cell Id

For definition of this parameter see clause 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 3GPP TS 23.009.

Target RNC Id

For definition of this parameter see clause 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 3GPP TS 23.009.

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

- 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 clause 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 clause 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 clause 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 clause 7.6.9.

Allowed GSM Algorithms

For definition of this parameter see clause 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 UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 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 clause 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.

RAB ID

For definition of this parameter see subclause 7.6.2. This parameter shall be included when MSC-A supports multiple bearers and access network protocol is BSSAP and the RAB ID has a value other than 1.

GERAN Classmark

For definition of this parameter see subclause 7.6.6 This parameter shall be included if available.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is RANAP. This parameter shall be sent when MSC-A requests multiple bearers to MSC-B. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the access network protocol is BSSAP.

Handover Number

For definition of this parameter see clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 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 clause 7.6.1. The following errors defined in clause 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 clause 7.6.1.

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

8.4.4 MAP_FORWARD_ACCESS_SIGNALLING service

8.4.4.1 Definition

This service is used between MSC-A and MSC-B (E-interface) to pass information to be forwarded to the A-interface or Iu-interface of MSC-B.

The MAP_FORWARD_ACCESS_SIGNALLING service is a non-confirmed service using the primitives from table 8.4/4.

8.4.4.2 Service primitives

Table 8.4/4: MAP_FORWARD_ACCESS_SIGNALLING

Parameter name	Request	Indication
Invoke Id	M	M(=)
Integrity Protection Information	C	C(=)
Encryption Information	C	C(=)
Key Status	C	C(=)
AN-APDU	M	M(=)
Allowed GSM Algorithms	C	C(=)
Allowed UMTS Algorithms	C	C(=)
Radio Resource Information	C	C(=)
Radio Resource List	C	C(=)
BSSMAP Service Handover	C	C(=)
BSSMAP Service Handover List	C	C(=)
RANAP Service Handover	C	C(=)

8.4.4.3 Parameter use

For the definition and use of all parameters and errors, see clause 7.6.1.

Invoke Id

For definition of this parameter see clause 7.6.1.

Integrity Protection Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Encryption Information

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

Key Status

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if available and if the encapsulated PDU is BSSMAP Cipher Mode Command.

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

This parameters includes allowed GSM algorithms. This GSM parameter shall be included if the encapsulated PDU is RANAP Security Mode Command and there is an indication that the UE also supports GSM.

Allowed UMTS Algorithms

For definition of this parameter see clause 7.6.6. This UMTS parameter shall be included if Integrity Protection Information and Encryption Information are not available and the encapsulated PDU is BSSMAP Cipher Mode Command.

Radio Resource Information

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request. If the parameter Radio Resource List is sent, the parameter Radio Resource Information shall not be sent.

Radio Resource List

For definition of this parameter see clause 7.6.6. This parameter shall be sent if the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter Radio Resource Information is sent, the parameter Radio Resource List shall not be sent.

BSSMAP Service Handover

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request ~~or BSSMAP Assignment Request~~. If the parameter BSSMAP Service Handover List is sent, the parameter BSSMAP Service Handover shall not be sent.

BSSMAP Service Handover List

For definition of this parameter see clause 7.6.6. It shall be present if it is available and the encapsulated PDU is RANAP RAB Assignment Request and MSC-A requests modification of multiple bearers. If the parameter BSSMAP Service Handover is sent, the parameter BSSMAP Service Handover List shall not be sent.

RANAP Service Handover

For definition of this parameter see clause 7.6.6.. It shall be present if it is available and the encapsulated PDU is BSSMAP Assignment Request ~~or RANAP RAB Assignment Request~~.

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

17.7 MAP constants and data types

17.7.1 Mobile Service data types

```
MAP-MS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-MS-DataTypes (11) version8 (8)}

DEFINITIONS

IMPLICIT TAGS

::=

BEGIN

EXPORTS

   -- location registration types
   UpdateLocationArg,
   UpdateLocationRes,
   CancelLocationArg,
   CancelLocationRes,
   PurgeMS-Arg,
   PurgeMS-Res,
   SendIdentificationArg,
   SendIdentificationRes,
   UpdateGprsLocationArg,
   UpdateGprsLocationRes,
   IST-SupportIndicator,
   SupportedLCS-CapabilitySets,

   -- gprs location registration types
   GSN-Address,

   -- handover types
   ForwardAccessSignalling-Arg,
   PrepareHO-Arg,
   PrepareHO-Res,
   PrepareSubsequentHO-Arg,
   PrepareSubsequentHO-Res,
   ProcessAccessSignalling-Arg,
   SendEndSignal-Arg,
   SendEndSignal-Res,


   -- authentication management types
   SendAuthenticationInfoArg,
   SendAuthenticationInfoRes,
   AuthenticationFailureReportArg,
   AuthenticationFailureReportRes,

   -- security management types
   EquipmentStatus,
   Kc,

   -- subscriber management types
   InsertSubscriberDataArg,
   InsertSubscriberDataRes,
   LSAIdentity,
   DeleteSubscriberDataArg,
   DeleteSubscriberDataRes,
   Ext-QoS-Subscribed,
   SubscriberData,
   ODB-Data,
   SubscriberStatus,
   ZoneCodeList,
   maxNumOfZoneCodes,
   O-CSI,
   D-CSI,
   O-BcsmCamelTDPCriteriaList,
   T-BCSM-CAMEL-TDP-CriteriaList,
   SS-CSI,
   ServiceKey,
   DefaultCallHandling,
   CamelCapabilityHandling,
```

```
   BasicServiceCriteria,
   SupportedCamelPhases,
   OfferedCamel4CSIs,
   OfferedCamel4Functionalities,
   maxNumOfCamelTDPData,
   CUG-Index,
   CUG-Info,
   CUG-Interlock,
   InterCUG-Restrictions,
   IntraCUG-Options,
   NotificationToMSUser,
   QoS-Subscribed,
   IST-AlertTimerValue,
   T-CSI,
   T-BcsmTriggerDetectionPoint,
   APN,

   -- fault recovery types
   ResetArg,
   RestoreDataArg,
   RestoreDataRes,

-- provide subscriber info types
   GeographicalInformation,
   MS-Classmark2,
   GPRSMSClass,

   -- subscriber information enquiry types
   ProvideSubscriberInfoArg,
   ProvideSubscriberInfoRes,
   SubscriberInfo,
   LocationInformation,
   LocationInformationGPRS,
   RAIdentity,
   SubscriberState,
   GPRSChargingID,

   -- any time information enquiry types
   AnyTimeInterrogationArg,
   AnyTimeInterrogationRes,

   -- any time information handling types
   AnyTimeSubscriptionInterrogationArg,
   AnyTimeSubscriptionInterrogationRes,
   AnyTimeModificationArg,
   AnyTimeModificationRes,

   -- subscriber data modification notification types
   NoteSubscriberDataModifiedArg,
   NoteSubscriberDataModifiedRes,

   -- gprs location information retrieval types
   SendRoutingInfoForGprsArg,
   SendRoutingInfoForGprsRes,

   -- failure reporting types
   FailureReportArg,
   FailureReportRes,

   -- gprs notification types
   NoteMsPresentForGprsArg,
   NoteMsPresentForGprsRes,

   -- Mobility Management types
   NoteMM-EventArg,
   NoteMM-EventRes



;

IMPORTS
   maxNumOfSS,
   SS-SubscriptionOption,
   SS-List,
   SS-ForBS-Code,
   Password
FROM MAP-SS-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
```

```
   gsm-Network (1) modules (3) map-SS-DataTypes (14) version8 (8)}

   SS-Code
FROM MAP-SS-Code {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-SS-Code (15) version8 (8)}

   Ext-BearerServiceCode
FROM MAP-BS-Code {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-BS-Code (20) version8 (8)}

   Ext-TeleserviceCode
FROM MAP-TS-Code {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-TS-Code (19) version8 (8)}


   AddressString,
   ISDN-AddressString,
   ISDN-SubaddressString,
   FTN-AddressString,
   AccessNetworkSignalInfo,
   IMSI,
   IMEI,
   TMSI,
   HLR-List,
   LMSI,
   Identity,
   GlobalCellId,
   CellGlobalIdOrServiceAreaIdOrLAI,
   Ext-BasicServiceCode,
   NAEA-PreferredCI,
   EMLPP-Info,
   MC-SS-Info,
   SubscriberIdentity,
   AgeOfLocationInformation,
   LCSClientExternalID,
   LCSClientInternalID,
   Ext-SS-Status,
   LCSServiceTypeID



FROM MAP-CommonDataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-CommonDataTypes (18) version8 (8)}

   ExtensionContainer
FROM MAP-ExtensionDataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ExtensionDataTypes (21) version8 (8)}

   AbsentSubscriberDiagnosticSM
FROM MAP-ER-DataTypes {
   itu-t identified-organization (4) etsi (0) mobileDomain (0)
   gsm-Network (1) modules (3) map-ER-DataTypes (17) version8 (8)}


;


-- location registration types
```

```
UpdateLocationArg ::= SEQUENCE {
    imsi                              IMSI,

    msc-Number                        [1] ISDN-AddressString,
    vlr-Number                        ISDN-AddressString,
    lmsi                              [10] LMSI OPTIONAL,
    extensionContainer                ExtensionContainer                OPTIONAL,
    ... ,
    vlr-Capability                    [6] VLR-Capability                OPTIONAL,
    informPreviousNetworkEntity       [11] NULL                         OPTIONAL,
    cs-LCS-NotSupportedByUE           [12] NULL                         OPTIONAL }
```

```
VLR-Capability ::= SEQUENCE{
    supportedCamelPhases                [0] SupportedCamelPhases          OPTIONAL,
    extensionContainer                  ExtensionContainer                OPTIONAL,
    ... ,
    solsaSupportIndicator               [2] NULL                          OPTIONAL,
    istSupportIndicator                 [1] IST-SupportIndicator          OPTIONAL,
    superChargerSupportedInServingNetworkEntity   [3] SuperChargerInfo    OPTIONAL,
    longFTN-Supported                   [4]  NULL                         OPTIONAL,
    supportedLCS-CapabilitySets         [5]  SupportedLCS-CapabilitySets  OPTIONAL,
    offeredCamel4CSIs                   [6] OfferedCamel4CSIs             OPTIONAL }
```

```
SuperChargerInfo ::= CHOICE {
    sendSubscriberData                  [0] NULL,
    subscriberDataStored                [1] AgeIndicator }
```

```
AgeIndicator ::= OCTET STRING (SIZE (1..6))
    -- The internal structure of this parameter is implementation specific.
```

```
IST-SupportIndicator ::=  ENUMERATED {
    basicISTSupported                   (0),
    istCommandSupported                 (1),
    ...}
-- exception handling:
-- reception of values > 1 shall be mapped to ' istCommandSupported '
```

```
SupportedLCS-CapabilitySets ::= BIT STRING {
    lcsCapabilitySet1 (0),
    lcsCapabilitySet2 (1),
    lcsCapabilitySet3 (2) } (SIZE (2..16))
-- Core network signalling capability set1 indicates LCS Release98 or Release99 version.
-- Core network signalling capability set2 indicates LCS Release4.
-- Core network signalling capability set3 indicates LCS Release5 or later version.
-- A node shall mark in the BIT STRING all LCS capability sets it supports.
-- If no bit is set then the sending node does not support LCS.
-- If the parameter is not sent by an VLR then the VLR may support at most capability set1.
-- If the parameter is not sent by an SGSN then no support for LCS is assumed.
-- An SGSN is not allowed to indicate support of capability set1.
-- Other bits than listed above shall be discarded.
```

```
UpdateLocationRes ::= SEQUENCE {
    hlr-Number                          ISDN-AddressString,

    extensionContainer                  ExtensionContainer                OPTIONAL,
    ... }
```

```
CancelLocationArg ::= [3] SEQUENCE {
    identity                            Identity,
    cancellationType                    CancellationType                  OPTIONAL,
    extensionContainer                  ExtensionContainer                OPTIONAL,
    ...}
```

```
CancellationType ::= ENUMERATED {
    updateProcedure                     (0),
    subscriptionWithdraw                (1),
    ...}
    -- The HLR shall not send values other than listed above
```

```
CancelLocationRes ::= SEQUENCE {
    extensionContainer                  ExtensionContainer                OPTIONAL,
    ...}
```

```
PurgeMS-Arg ::= [3] SEQUENCE {
    imsi                                IMSI,
    vlr-Number                          [0] ISDN-AddressString            OPTIONAL,
    sgsn-Number                         [1]  ISDN-AddressString           OPTIONAL,
    extensionContainer                  ExtensionContainer                OPTIONAL,
    ...}
```

```
PurgeMS-Res ::= SEQUENCE {
    freezeTMSI                          [0]  NULL                         OPTIONAL,
    freezeP-TMSI                        [1]  NULL                         OPTIONAL,
    extensionContainer                  ExtensionContainer                OPTIONAL,
    ...}
```

```
SendIdentificationArg ::= SEQUENCE {
    tmsi                            TMSI,
    numberOfRequestedVectors        NumberOfRequestedVectors        OPTIONAL,
    -- within a dialogue numberOfRequestedVectors shall be present in
    -- the first service request and shall not be present in subsequent service requests.
    -- If received in a subsequent service request it shall be discarded.
    segmentationProhibited          NULL                            OPTIONAL,
    extensionContainer              ExtensionContainer              OPTIONAL,
    ...}
```

```
SendIdentificationRes ::= [3] SEQUENCE {
    imsi                            IMSI                            OPTIONAL,
    -- IMSI shall be present in the first (or only) service response of a dialogue.
    -- If multiple service requests are present in a dialogue then IMSI
    -- shall not be present in any service response other than the first one.
    authenticationSetList           AuthenticationSetList           OPTIONAL,
    currentSecurityContext          [2]CurrentSecurityContext       OPTIONAL,
    extensionContainer              [3] ExtensionContainer          OPTIONAL,
    ...}
```

```
-- authentication management types
```

```
AuthenticationSetList ::= CHOICE {
    tripletList                     [0] TripletList,
    quintupletList                  [1] QuintupletList }
```

```
TripletList ::= SEQUENCE SIZE (1..5) OF
                                    AuthenticationTriplet
```

```
QuintupletList ::= SEQUENCE SIZE (1..5) OF
                                    AuthenticationQuintuplet
```

```
AuthenticationTriplet ::= SEQUENCE {
    rand                            RAND,
    sres                            SRES,
    kc                              Kc,
    ...}
```

```
AuthenticationQuintuplet ::= SEQUENCE {
    rand                            RAND,
    xres                            XRES,
    ck                              CK,
    ik                              IK,
    autn                            AUTN,
    ...}
```

```
CurrentSecurityContext ::= CHOICE {
    gsm-SecurityContextData         [0] GSM-SecurityContextData,
    umts-SecurityContextData        [1] UMTS-SecurityContextData }
```

```
GSM-SecurityContextData ::= SEQUENCE {
    kc                              Kc,
    cksn                            Cksn,
    ... }
```

```
UMTS-SecurityContextData ::= SEQUENCE {
    ck                              CK,
    ik                              IK,
    ksi                             KSI,
    ... }
```

```
RAND ::= OCTET STRING (SIZE (16))
```

```
SRES ::= OCTET STRING (SIZE (4))
```

```
Kc ::= OCTET STRING (SIZE (8))
```

```
XRES ::= OCTET STRING (SIZE (4..16))
```

```
CK ::= OCTET STRING (SIZE (16))
```

```
IK ::= OCTET STRING (SIZE (16))
```

```
AUTN ::= OCTET STRING (SIZE (16))
```

```
AUTS ::= OCTET STRING (SIZE (14))
```

```
Cksn ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
KSI ::= OCTET STRING (SIZE (1))
     -- The internal structure is defined in 3GPP TS 24.008
```

```
AuthenticationFailureReportArg ::= SEQUENCE {
     imsi                              IMSI,
     failureCause                      FailureCause,
     extensionContainer                ExtensionContainer              OPTIONAL,
     ... ,
     re-attempt                        BOOLEAN                         OPTIONAL,
     accessType                        AccessType                      OPTIONAL,
     rand                              RAND                            OPTIONAL,
     vlr-Number                        [0] ISDN-AddressString          OPTIONAL,
     sgsn-Number                       [1] ISDN-AddressString          OPTIONAL }
```

```
AccessType ::= ENUMERATED {
     call (0),
     emergencyCall (1),
     locationUpdating (2),
     supplementaryService (3),
     shortMessage (4),
     gprsAttach (5),
     routingAreaUpdating (6),
     serviceRequest (7),
     pdpContextActivation (8),
     pdpContextDeactivation (9),
     ...}
     -- exception handling:
     -- received values greater than 9 shall be ignored.
```

```
AuthenticationFailureReportRes ::= SEQUENCE {
     extensionContainer                ExtensionContainer              OPTIONAL,
     ...}
```

```
FailureCause ::= ENUMERATED {
     wrongUserResponse  (0),
     wrongNetworkSignature  (1)}
```

-- gprs location registration types

```
UpdateGprsLocationArg ::= SEQUENCE {
     imsi                              IMSI,
     sgsn-Number                       ISDN-AddressString,
     sgsn-Address                      GSN-Address,
     extensionContainer                ExtensionContainer              OPTIONAL,
     ... ,
     sgsn-Capability                   [0] SGSN-Capability             OPTIONAL,
     informPreviousNetworkEntity       [1]  NULL                       OPTIONAL,
     ps-LCS-NotSupportedByUE           [2]  NULL                       OPTIONAL }
```

```
SGSN-Capability ::= SEQUENCE{
     solsaSupportIndicator             NULL                            OPTIONAL,
     extensionContainer                [1] ExtensionContainer          OPTIONAL,
     ... ,
     superChargerSupportedInServingNetworkEntity   [2] SuperChargerInfo     OPTIONAL ,
     gprsEnhancementsSupportIndicator  [3] NULL                        OPTIONAL,
     supportedCamelPhases              [4] SupportedCamelPhases        OPTIONAL,
     supportedLCS-CapabilitySets       [5]  SupportedLCS-CapabilitySets  OPTIONAL,
     offeredCamel4CSIs                 [6] OfferedCamel4CSIs           OPTIONAL }
```

```
GSN-Address ::= OCTET STRING (SIZE (5..17))
     -- Octets are coded according to TS 3GPP TS 23.003 [17]
```

```
UpdateGprsLocationRes ::= SEQUENCE {
     hlr-Number                        ISDN-AddressString,
     extensionContainer                ExtensionContainer              OPTIONAL,
     ...}
```

```
-- 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,
    ...,
    radioResourceList                [7]  RadioResourceList              OPTIONAL,
    bssmap-ServiceHandover           [9]  BSSMAP-ServiceHandover         OPTIONAL,
    ranap-ServiceHandover            [8]  RANAP-ServiceHandover          OPTIONAL,
    bssmap-ServiceHandoverList       [x]  BSSMAP-ServiceHandoverList     OPTIONAL }

AllowedGSM-Algorithms ::= OCTET STRING (SIZE (1))
    -- internal structure is coded as Algorithm identifier octet from
    -- Permitted Algorithms defined in 3GPP 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 3GPP TS 25.413, encoded according to the encoding scheme
    -- mandated by 3GPP TS 25.413.
    -- Padding bits are included, if needed, in the least significant bits of the
    -- last octet of the octet string.

maxPermittedIntegrityProtectionAlgorithmsLength INTEGER ::= 9

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

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,
     ... ,
     rab-Id                              [12] RAB-Id                         OPTIONAL,
     bssmap-ServiceHandover              [13] BSSMAP-ServiceHandover         OPTIONAL,
     ranap-ServiceHandover               [14] RANAP-ServiceHandover          OPTIONAL,
     geran-classmark                     [15] GERAN-Classmark                OPTIONAL,
     bssmap-ServiceHandoverList          [xx] BSSMAP-ServiceHandoverList     OPTIONAL
      }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2.. maxNumOfServiceHandovers) OF
                               BSSMAP-ServiceHandoverInfo
```

```
BSSMAP-ServiceHandoverInfo ::= SEQUENCE {
     bssmap-ServiceHandover              BSSMAP-ServiceHandover,
     rab-Id                              RAB-Id,
     -- RAB Identity is needed to relate the service handovers with the radio access bearers.
     ...}
```

```
maxNumOfServiceHandovers  INTEGER ::= 7
```

```
BSSMAP-ServiceHandover ::= OCTET STRING (SIZE (1))
     -- Octets are coded according the Service Handover information element in
     -- 3GPP TS 48.008.
```

```
RANAP-ServiceHandover ::= OCTET STRING (SIZE (1))
     -- Octet contains a complete Service-Handover data type
     -- as defined in 3GPP TS 25.413, encoded according to the encoding scheme
     -- mandated by 3GPP TS 25.413
     -- Padding bits are included in the least significant bits.
```

3GPP TSG CN WG4 Meeting #17 ***N4-021579***
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.010** **CR** **082** ⌘ **rev** **3** ⌘ Current version: **3.9.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU. Also there would be a need to add RANAP Service Handover List parameter to MAP in the same manner as BSSAP Service Handover List for multicall in case of RANAP Relocation for multiple bearers if also the RANAP Service Handover parameters would be sent on MAP level. This is an essential correction.
Summary of change:	⌘	The Service Handover parameters spesific to the radio access used in E-interface are changed to be transferred inside RAN spesific messages.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	4.5.5.10, 4.7.5.8, 4.8.5.9

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications		29.002 CR 514
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

4.5.5.10 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP Assignment ~~message~~procedure.

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

4.7.5.8 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP ~~message~~Assignment procedure.

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

4.8.5.9 RANAP Service Handover

This information shall be stored by 3G_MSC-B and sent to an RNS in Relocation Request during the basic inter-MSC relocation or when 3G_MSC-B performs a subsequent intra-MSC relocation or handover to UMTS.

Transfer of information:

The RANAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare Handover~~Relocation Request ~~M~~RANAP message.

If a new assignment of a Radio Access Bearer after an inter-MSC relocation is to be performed, the information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request MAP message~~RANAP RAB Assignment procedure.

~~–~~

3GPP TSG CN WG4 Meeting #17 **N4-021580**
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.010** **CR** **083** ⌘ **rev** **3** ⌘ Current version: **4.4.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:
2 *(GSM Phase 2)*
R96 *(Release 1996)*
R97 *(Release 1997)*
R98 *(Release 1998)*
R99 *(Release 1999)*
Rel-4 *(Release 4)*
Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	The Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU.
Summary of change:	⌘	The Service Handover parameters spesific to the radio access used in E-interface are changed to be transferred inside RAN spesific messages. Also there would be a need to add RANAP Service Handover List parameter to MAP in the same manner as BSSAP Service Handover List for multicall in case of RANAP Relocation for multiple bearers if also the RANAP Service Handover parameters would be sent on MAP level.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	4.5.5.10, 4.7.5.8, 4.8.5.9

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications		29.002 CR 515
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
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2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

4.5.5.10 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP Assignment ~~message~~procedure.

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

4.7.5.8 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP ~~message~~Assignment procedure.

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

4.8.5.9 RANAP Service Handover

This information shall be stored by 3G_MSC-B and sent to an RNS in Relocation Request during the basic inter-MSC relocation or when 3G_MSC-B performs a subsequent intra-MSC relocation or handover to UMTS.

Transfer of information:

The RANAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare Handover~~Relocation Request ~~M~~RANAP message.

If a new assignment of a Radio Access Bearer after an inter-MSC relocation is to be performed, the information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request MAP message~~RANAP RAB Assignment procedure.

3GPP TSG CN WG4 Meeting #17 **N4-021581**
Bangkok, THAILAND, 11th – 15th November 2002

CR-Form-v7

CHANGE REQUEST

⌘ **29.010** **CR** **084** ⌘ **rev** **3** ⌘ Current version: **5.1.0** ⌘

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

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

Title:	⌘	Correction to the Service Handover parameters
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	15/11/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
Detailed explanations of the above categories can be found in 3GPP TR 21.900.

Use one of the following releases:

2	*(GSM Phase 2)*
R96	*(Release 1996)*
R97	*(Release 1997)*
R98	*(Release 1998)*
R99	*(Release 1999)*
Rel-4	*(Release 4)*
Rel-5	*(Release 5)*
Rel-6	*(Release 6)*

Reason for change:	⌘	The Service Handover parameters should not be duplicated to the MAP level if they are included in the RAN-APDU. Also there would be a need to add RANAP Service Handover List parameter to MAP in the same manner as BSSAP Service Handover List for multicall in case of RANAP Relocation for multiple bearers if also the RANAP Service Handover parameters would be sent on MAP level.
Summary of change:	⌘	The Service Handover parameters spesific to the radio access used in E-interface are changed to be transferred inside RAN spesific messages.
Consequences if not approved:	⌘	Service based handover is not possible for multicall.

Clauses affected:	⌘	4.5.5.10, 4.7.5.8, 4.8.5.9

Other specs affected:	⌘	Y	N		⌘	
		X		Other core specifications		29.002 CR 516
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

How to create CRs using this form:
Comprehensive information and tips about how to create CRs can be found at http://www.3gpp.org/specs/CR.htm.
Below is a brief summary:

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

4.5.5.10 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP Assignment ~~message~~procedure.

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

4.7.5.8 BSSMAP Service Handover

This information shall be stored by 3G_MSC-B and sent to a BSS in Handover Request, when 3G_MSC-B performs handover to GSM.

Transfer of information:

The BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare~~ Handover Request BSSMAP message.

If a new assignment of a TCH after an inter-MSC handover is to be performed, the BSSMAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request~~ BSSMAP ~~message~~Assignment procedure.

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

4.8.5.9 RANAP Service Handover

This information shall be stored by 3G_MSC-B and sent to an RNS in Relocation Request during the basic inter-MSC relocation or when 3G_MSC-B performs a subsequent intra-MSC relocation or handover to UMTS.

Transfer of information:

The RANAP Service Handover information is transferred to 3G_MSC-B in:

– the ~~Prepare Handover~~Relocation Request ~~M~~RANAP message.

If a new assignment of a Radio Access Bearer after an inter-MSC relocation is to be performed, the information is transferred to 3G_MSC-B in:

– the ~~Forward Access Signalling Request MAP message~~RANAP RAB Assignment procedure.