3GPP TSG CN Plenary Meeting #19 **NP-030099**
12th – 14th March 2003 Birmingham, UK.

Source: TSG CN WG4

Title: Corrections on Multicall

Agenda item: 7.9

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	530	1	N4-030298	R99	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List	F	3.15.0
29.002	531	1	N4-030299	Rel-4	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List	A	4.10.0
29.002	532	1	N4-030300	Rel-5	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List	A	5.4.0
29.002	533	1	N4-030301	Rel-6	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List	A	6.0.0

3GPP TSG CN WG4 Meeting #18 **N4-030298**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **530** ⌘ **rev** **1** ⌘ Current version: **3.15.0** ⌘

*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 definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2. **Essential Correction.**
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.4 Void

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in GSM 08.08.

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in GSM 08.08. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in GSM 08.08.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. The coding of this parameter is defined in GSM 08.08.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in GSM 08.08.

****** 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        [10] 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           [15] BSSMAP-ServiceHandoverList   OPTIONAL
      }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                     RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030299**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **531** ⌘ **rev** **1** ⌘ Current version: **4.10.0** ⌘

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

Title:	⌘	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

Other specs affected: ⌘	Y	N		⌘
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Other comments:	⌘	

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.4 Void

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in GSM 08.08.

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in GSM 08.08. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in GSM 08.08.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. The coding of this parameter is defined in GSM 08.08.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in GSM 08.08.

****** 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        [10] 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           [15] BSSMAP-ServiceHandoverList   OPTIONAL
      }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                     RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030300**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **532** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

*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 definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2.
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.3 Void

7.6.6.4 GERAN Classmark

This information element is sent from one MSC to the other MSC in the signalling for inter MSC handover. It is used to convey information related to cell capabilities, as defined in 3GPP TS 48.008.

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in 3GPP TS 48.008 [49].

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in 3GPP TS 48.008. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in 3GPP TS 48.008.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.16 Currently Used Codec

This parameter indicates the currently used codec in MSC-A.

7.6.6.17 Available Codecs List

This parameter indicates the available codecs in MSC-A and the associated modes in priority order (the first entry being the highest priority codec). MSC-B uses this information to select the associated transcoder resources.

7.6.6.18 Selected Codec

This parameter indicates the codec selected by MSC-B.

7.6.6.19 RAB Configuration Indicator

This parameter indicates by its presence that MSC-A (or MSC-B in case of subsequent handover) has generated the RAB parameters according to the preferred codec (first entry in the Available Codecs List).

****** 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          [10] 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      [15] BSSMAP-ServiceHandoverList     OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (21.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030301**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **533** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

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

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

Title:	⌘	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	31/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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

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

Reason for change:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2.
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.3 Void

7.6.6.4 GERAN Classmark

This information element is sent from one MSC to the other MSC in the signalling for inter MSC handover. It is used to convey information related to cell capabilities, as defined in 3GPP TS 48.008.

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in 3GPP TS 48.008 [49].

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in 3GPP TS 48.008. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in 3GPP TS 48.008.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.16 Currently Used Codec

This parameter indicates the currently used codec in MSC-A.

7.6.6.17 Available Codecs List

This parameter indicates the available codecs in MSC-A and the associated modes in priority order (the first entry being the highest priority codec). MSC-B uses this information to select the associated transcoder resources.

7.6.6.18 Selected Codec

This parameter indicates the codec selected by MSC-B.

7.6.6.19 RAB Configuration Indicator

This parameter indicates by its presence that MSC-A (or MSC-B in case of subsequent handover) has generated the RAB parameters according to the preferred codec (first entry in the Available Codecs List).

****** 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      [10] 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      [15] BSSMAP-ServiceHandoverList   OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (~~2~~1.. maxNumOfRadioResources) OF
                                RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030298**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **530** ⌘ **rev** **1** ⌘ Current version: **3.15.0** ⌘

*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 definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**F**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2. **Essential Correction.**
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.4 Void

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in GSM 08.08.

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in GSM 08.08. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in GSM 08.08.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. The coding of this parameter is defined in GSM 08.08.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in GSM 08.08.

****** 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        [10] 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           [15] BSSMAP-ServiceHandoverList   OPTIONAL
      }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                     RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030299**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **531** ⌘ **rev** **1** ⌘ Current version: **4.10.0** ⌘

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

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

Title:	⌘	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2.
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.4 Void

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in GSM 08.08.

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in GSM 08.08. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in GSM 08.08.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. The coding of this parameter is defined in GSM 08.08.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in GSM 08.08.

****** 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        [10] 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           [15] BSSMAP-ServiceHandoverList   OPTIONAL
      }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (2~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                     RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030300**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **532** ⌘ **rev** **1** ⌘ Current version: **5.4.0** ⌘

*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 definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	13/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*
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:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2.
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.3 Void

7.6.6.4 GERAN Classmark

This information element is sent from one MSC to the other MSC in the signalling for inter MSC handover. It is used to convey information related to cell capabilities, as defined in 3GPP TS 48.008.

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in 3GPP TS 48.008 [49].

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in 3GPP TS 48.008. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in 3GPP TS 48.008.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.16 Currently Used Codec

This parameter indicates the currently used codec in MSC-A.

7.6.6.17 Available Codecs List

This parameter indicates the available codecs in MSC-A and the associated modes in priority order (the first entry being the highest priority codec). MSC-B uses this information to select the associated transcoder resources.

7.6.6.18 Selected Codec

This parameter indicates the codec selected by MSC-B.

7.6.6.19 RAB Configuration Indicator

This parameter indicates by its presence that MSC-A (or MSC-B in case of subsequent handover) has generated the RAB parameters according to the preferred codec (first entry in the Available Codecs List).

****** 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          [10] 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      [15] BSSMAP-ServiceHandoverList     OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (21.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (21.. maxNumOfRadioResources) OF
                                RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```

3GPP TSG CN WG4 Meeting #18 **N4-030301**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **533** ⌘ **rev** **1** ⌘ Current version: **6.0.0** ⌘

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

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

Title:	⌘	Correction to the definitions of Radio Resource List and BSSMAP Service Handover List
Source:	⌘	CN4
Work item code:	⌘	Multicall
Date:	⌘	31/02/2003
Category:	⌘	**A**
Release:	⌘	Rel-6

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

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

Reason for change:	⌘	If more than one bearer is involved in relocation and only one of the bearers has an associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level, because the lower limit for Radio Resource List and BSSMAP Service Handover List parameters is defined as 2.
Summary of change:	⌘	The lower limit of Radio Resource List and BSSMAP Service Handover List parameters is changed from 2 to 1.
Consequences if not approved:	⌘	In multicall scenario if there is only one bearer with associated Radio Resource or BSSMAP Service Handover parameter then that parameter can not be transferred on MAP level in case of relocation.

Clauses affected:	⌘	7.6.6, 17.7.1

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

Other comments:	⌘	

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

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

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

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

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

7.6.6 Radio parameters

7.6.6.1 - 7.6.6.3 Void

7.6.6.4 GERAN Classmark

This information element is sent from one MSC to the other MSC in the signalling for inter MSC handover. It is used to convey information related to cell capabilities, as defined in 3GPP TS 48.008.

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. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated BSSMAP Service Handover parameter.

7.6.6.6 RANAP Service Handover

This parameter refers to the Service Handover information element defined in 3GPP TS 25.413.

7.6.6.7 HO-Number Not Required

This parameter indicates that no handover or relocation number allocation is necessary.

7.6.6.8 Integrity Protection Information

This parameter refers to the Integrity Protection Information element defined in 3GPP TS 25.413.

7.6.6.9 Encryption Information

This parameter refers to the Encryption Information element defined in 3GPP TS 25.413.

7.6.6.10 Radio Resource Information

This parameter refers to the Channel Type information element defined in 3GPP TS 48.008 [49].

7.6.6.10A Radio Resource List

This parameter refers to list of RAB-id's and their associated Channel Type information elements defined in 3GPP TS 48.008. This parameter shall be used when there are multiple bearers and at least one of the bearers has an associated Radio Resource Information parameter.

7.6.6.10B Chosen Radio Resource Information

This parameter refers to the Chosen Channel and Speech Version information elements defined in 3GPP TS 48.008.

7.6.6.11 Key Status

This parameter refers to the Key Status element defined in 3GPP TS 25.413.

7.6.6.12 Selected UMTS Algorithms

This parameters identifies the UMTS integrity and optionally encryption algorithms selected by MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.13 Allowed GSM Algorithms

This parameters identifies the allowed GSM algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.14 Allowed UMTS Algorithms

This parameters identifies the allowed UMTS algorithms in MSC-B. Coding of this parameter is defined in 3GPP TS 25.413.

7.6.6.15 Selected GSM Algorithm

This parameter identifies the GSM algorithm selected by GSM BSC controlled by MSC-B. Coding of this parameter is defined in 3GPP TS 48.008.

7.6.6.16 Currently Used Codec

This parameter indicates the currently used codec in MSC-A.

7.6.6.17 Available Codecs List

This parameter indicates the available codecs in MSC-A and the associated modes in priority order (the first entry being the highest priority codec). MSC-B uses this information to select the associated transcoder resources.

7.6.6.18 Selected Codec

This parameter indicates the codec selected by MSC-B.

7.6.6.19 RAB Configuration Indicator

This parameter indicates by its presence that MSC-A (or MSC-B in case of subsequent handover) has generated the RAB parameters according to the preferred codec (first entry in the Available Codecs List).

****** 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      [10] 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      [15] BSSMAP-ServiceHandoverList   OPTIONAL
     }
```

```
BSSMAP-ServiceHandoverList ::= SEQUENCE SIZE (~~2~~1.. 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.
```

```
RadioResourceList ::= SEQUENCE SIZE (~~2~~1.. maxNumOfRadioResources) OF
                                RadioResource
```

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

```
maxNumOfRadioResources  INTEGER ::= 7
```