3GPP TSG CN Plenary Meeting #19 **NP-030100**
12th – 14th March 2003 Birmingham, UK.

Source: TSG CN WG4

Title: Small corrections on Technical Enhancements and Improvements for R99

Agenda item: 7.11

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.002	538	2	N4-030302	R99	Handover of Group Calls where MSC-B has bearer established	F	3.15.0
29.002	539	2	N4-030303	Rel-4	Handover of Group Calls where MSC-B has bearer established	A	4.10.0
29.002	540	2	N4-030304	Rel-5	Handover of Group Calls where MSC-B has bearer established	A	5.4.0
29.002	541	2	N4-030305	Rel-6	Handover of Group Calls where MSC-B has bearer established	A	6.0.0

3GPP TSG CN WG4 Meeting #18 **N4-030302**
Dublin, EIRE, 10th – 14th February 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **538** ⌘ **rev** **2** ⌘ 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 **X**

Title:	⌘	Handover of Group Calls where MSC-B has bearer established
Source:	⌘	CN4
Work item code:	⌘	TEI
Date:	⌘	14/1/2003
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:	⌘	When performing handover in Voice Group Call Service (VGCS) or Voice Broadcast Service (VBS) it may be the case that MSC-B already has a bearer path for that VB Call or VGCS Call established – there may be a subscriber (or talker in VGCS nomenclature) already attached to MSC-B. Therefore, the handover that takes place is what is referred to as 'Signalling-Only'. In VGCS and VBS, the Group Call Reference identifies participants of a common Group Call. In Signalling Only handover, Group Call Reference is currently not forwarded to MSC-B in any of the signalling messages. Therefore, when MSC-B takes over the dispatcher, it has no way of determining at the MAP level, which Group Call the dispatcher should be attached to. The subscriber would be dropped from the VGCS or VBS Call. This is a serious and frequent misoperation and so the proposed **change is an essential correction**.
Summary of change:	⌘	Add ASCI Call reference (which can be set to Group call reference) to the PrepareHandover message in MAP.
Consequences if not approved:	⌘	Talkers that undergo Signalling-Only handover in VBS or VGCS calls cannot be re-attached to the correct call at MSC-B

Clauses affected:	⌘	8.4.1, 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.

8.4.1 MAP_PREPARE_HANDOVER service

8.4.1.1 Definition

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

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

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANDOVER

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

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see clause 7.6.1.

Target Cell Id

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

Target RNC Id

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

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

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

Integrity Protection Information

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

Encryption Information

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

Radio Resource Information

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

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

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

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

Allowed UMTS Algorithms

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

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

Radio Resource List

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

RAB ID

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

BSSMAP Service Handover

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

BSSMAP Service Handover List

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

RANAP Service Handover

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

ASCI Call Reference

This parameter contains either the broadcast call reference or group call reference. It shall be included if a subscriber is undergoing ~~Signalling Only~~ handover during a VGCS or VBS call where MSC-B already has a Bearer established, so that MSC-B can determine the Group or Broadcast Call to which it shall attach the subscriber, see 3GPP TS 48.008 [49].

Handover Number

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

Relocation Number List

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

Multicall Bearer Information

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

Multiple Bearer Requested

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

Multiple Bearer Not Supported

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

Selected UMTS Algorithms

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

Chosen Radio Resource Information

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

User error

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

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

Provider error

See definition of provider errors in clause 7.6.1.

****** *Next Changed Section* ******

17.7.1 Mobile Service data types

****** *Text removed for clarity* ******

```
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,
    asciCallReference               [20] ASCIsci-CallReference       OPTIONAL
     }
```

3GPP TSG CN WG4 Meeting #18 ***N4-030303***
Dublin, EIRE, 10th – 14th February 2003 **(was N4-030087, 0194)**

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **539** ⌘**rev** **2** ⌘ 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:	⌘	Handover of Group Calls where MSC-B has bearer established
Source:	⌘	CN4
Work item code:	⌘	TEI
Date:	⌘	14/1/2003
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:	⌘	When performing handover in Voice Group Call Service (VGCS) or Voice Broadcast Service (VBS) it may be the case that MSC-B already has a bearer path for that VB Call or VGCS Call established – there may be a subscriber (or talker in VGCS nomenclature) already attached to MSC-B. Therefore, the handover that takes place is what is referred to as 'Signalling-Only'. In VGCS and VBS, the Group Call Reference identifies participants of a common Group Call. In Signalling Only handover, Group Call Reference is currently not forwarded to MSC-B in any of the signalling messages. Therefore, when MSC-B takes over the talker, it has no way of determining at the MAP level, which Group Call the talker should be attached to. The subscriber would be dropped from the VGCS or VBS Call. This is a serious and frequent misoperation and so the proposed change is an essential correction.
Summary of change:	⌘	Add ASCI Call reference (which can be set to Group call reference) to the PrepareHandover message in MAP.
Consequences if not approved:	⌘	Talkers that undergo Signalling-Only handover in VBS or VGCS calls cannot be re-attached to the correct call at MSC-B

Clauses affected:	⌘	8.4.1, 17.7.1

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

Other comments:	⌘	

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

8.4.1 MAP_PREPARE_HANDOVER service

8.4.1.1 Definition

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

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

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANDOVER

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

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see clause 7.6.1.

Target Cell Id

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

Target RNC Id

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

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

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

Integrity Protection Information

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

Encryption Information

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

Radio Resource Information

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

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

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

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

Allowed UMTS Algorithms

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

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

Radio Resource List

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

RAB ID

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

BSSMAP Service Handover

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

BSSMAP Service Handover List

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

RANAP Service Handover

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

ASCI Call Reference

This parameter contains either the broadcast call reference or group call reference. It shall be included if a subscriber is undergoing ~~Signalling Only~~ handover during a VGCS or VBS call, where MSC-B already has a Bearer established, so that MSC-B can determine the Group or Broadcast Call to which it shall attach the subscriber, see 3GPP TS 48.008 [49]~~(see [100] and [101]).~~ .

Handover Number

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

Relocation Number List

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

Multicall Bearer Information

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

Multiple Bearer Requested

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

Multiple Bearer Not Supported

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

Selected UMTS Algorithms

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

Chosen Radio Resource Information

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

User error

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

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

Provider error

See definition of provider errors in clause 7.6.1.

****** *Next Changed Section* ******

17.7.1 Mobile Service data types

****** *Text removed for clarity* ******

```
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,
    asciCallReference               [20] ASCIsci-CallReference        OPTIONAL    }
```

3GPP TSG CN WG4 Meeting #18 ***N4-030304***
Dublin, EIRE, 10th – 14th February 2003 **(was N4-030088, 0195)**

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **540** ⌘**rev** **2** ⌘ 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:	⌘	Handover of Group Calls where MSC-B has bearer established
Source:	⌘	CN4
Work item code:	⌘	TEI
Date:	⌘	14/1/2003
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
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Summary of change:	⌘	Add ASCI Call reference (which can be set to Group call reference) to the PrepareHandover message in MAP.
Consequences if not approved:	⌘	Talkers that undergo Signalling-Only handover in VBS or VGCS calls cannot be re-attached to the correct call at MSC-B

Clauses affected:	⌘	8.4.1, 17.7.1

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

Other comments:	⌘	

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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.

8.4.1 MAP_PREPARE_HANDOVER service

8.4.1.1 Definition

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

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

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANDOVER

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
Target Cell Id	C	C(=)		
Target RNC Id	C	C(=)		
HO-NumberNotRequired	C	C(=)		
IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
RAB ID	C	C(=)		
GERAN Classmark	C	C(=)		
BSSMAP Service Handover	C	C(=)		
BSSMAP Service Handover List	C	C(=)		
RANAP Service Handover	C	C(=)		
Currently Used Codec	C	C(=)		
Available Codecs List	C	C(=)		
RAB Configuration Indicator	C	C(=)		
ASCI Call Reference	C	C(=)		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
Selected Codec			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see clause 7.6.1.

Target Cell Id

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

Target RNC Id

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

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

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

Integrity Protection Information

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

Encryption Information

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

Radio Resource Information

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

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

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

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

Allowed UMTS Algorithms

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

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and

Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

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

RAB ID

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

GERAN Classmark

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

BSSMAP Service Handover

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

BSSMAP Service Handover List

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

RANAP Service Handover

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

Currently Used Codec

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the call is a speech call. This parameter shall not be included if Available Codecs List is not included.

Available Codecs List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the call is a speech call.

RAB Configuration Indicator

For definition of this parameter see subclause 7.6.6. This parameter may be included if the call is a speech call and MSC-A knows by means of configuration information that MSC-B supports the use of Available Codecs List parameter. This parameter shall not be included if Available Codecs List is not included.

ASCI Call Reference

This parameter contains either the broadcast call reference or group call reference. It shall be included if a subscriber is undergoing ~~Signalling Only~~ handover during a VGCS or VBS call, where MSC-B already has a Bearer established, so that MSC-B can determine the Group or Broadcast Call to which it shall attach the subscriber, see 3GPP TS 48.008 [49]~~(see [100] and [101]).~~

Handover Number

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

Relocation Number List

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

Multicall Bearer Information

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

Multiple Bearer Requested

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

Multiple Bearer Not Supported

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

Selected UMTS Algorithms

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

Chosen Radio Resource Information

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

Selected Codec

For definition of this parameter see subclause 7.6.6. This parameter shall be included always if MSC-B supports the selection of codec based on Available Codecs List, even if Selected Codec is equal to the Currently Used Codec received in the service request. This parameter shall not be included if Available Codecs List was not received in the service request.

User error

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

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

Provider error

See definition of provider errors in clause 7.6.1.

******* Next Changed Section *******

17.7.1 Mobile Service data types

******* Text removed for clarity *******

```
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,
    asciCallReference               [20] ASCI-CallReference             OPTIONAL,
    geran-classmark                 [16] GERAN-Classmark                OPTIONAL,
    currentlyUsedCodec              [17] Codec                          OPTIONAL,
    availableCodecsList             [18] AvailableCodecsList            OPTIONAL,
    rab-ConfigurationIndicator      [19] NULL                           OPTIONAL,
    asciCallReference               [20] Asci-CallReference             OPTIONAL      }
```

3GPP TSG CN WG4 Meeting #18 ***N4-030305***
Dublin, EIRE, 10th – 14th February 2003 **(was N4-030089, 0196)**

CR-Form-v7

CHANGE REQUEST

⌘ **29.002** **CR** **541** ⌘**rev** **2** ⌘ 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 **X**

Title:	⌘	Handover of Group Calls where MSC-B has bearer established
Source:	⌘	CN4
Work item code:	⌘	TEI
Date:	⌘	14/1/2003
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:	⌘	When performing handover in Voice Group Call Service (VGCS) or Voice Broadcast Service (VBS) it may be the case that MSC-B already has a bearer path for that VB Call or VGCS Call established – there may be a subscriber (or talker in VGCS nomenclature) already attached to MSC-B. Therefore, the handover that takes place is what is referred to as 'Signalling-Only'. In VGCS and VBS, the Group Call Reference identifies participants of a common Group Call. In Signalling Only handover, Group Call Reference is currently not forwarded to MSC-B in any of the signalling messages. Therefore, when MSC-B takes over the talker, it has no way of determining at the MAP level, which Group Call the talker should be attached to. The subscriber would be dropped from the VGCS or VBS Call. This is a serious and frequent misoperation and so the proposed change is an essential correction.
Summary of change:	⌘	Add ASCI Call reference (which can be set to Group call reference) to the PrepareHandover message in MAP.
Consequences if not approved:	⌘	Talkers that undergo Signalling-Only handover in VBS or VGCS calls cannot be re-attached to the correct call at MSC-B

Clauses affected:	⌘	8.4.1, 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:

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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.

8.4.1 MAP_PREPARE_HANDOVER service

8.4.1.1 Definition

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

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

8.4.1.2 Service primitives

Table 8.4/1: MAP_PREPARE_HANDOVER

Parameter name	Request	Indication	Response	Confirm
Invoke Id	M	M(=)	M(=)	M(=)
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Target RNC Id	C	C(=)		
HO-NumberNotRequired	C	C(=)		
IMSI	C	C(=)		
Integrity Protection Information	C	C(=)		
Encryption Information	C	C(=)		
Radio Resource Information	C	C(=)		
AN-APDU	C	C(=)	C	C(=)
Allowed GSM Algorithms	C	C(=)		
Allowed UMTS Algorithms	C	C(=)		
Radio Resource List	C	C(=)		
RAB ID	C	C(=)		
GERAN Classmark	C	C(=)		
BSSMAP Service Handover	C	C(=)		
BSSMAP Service Handover List	C	C(=)		
RANAP Service Handover	C	C(=)		
Currently Used Codec	C	C(=)		
Available Codecs List	C	C(=)		
RAB Configuration Indicator	C	C(=)		
ASCI Call Reference	C	C(=)		
Handover Number			C	C(=)
Relocation Number List			C	C(=)
Multicall Bearer Information			C	C(=)
Multiple Bearer Requested	C	C(=)		
Multiple Bearer Not Supported			C	C(=)
Selected UMTS Algorithms			C	C(=)
Chosen Radio Resource Information			C	C(=)
Selected Codec			C	C(=)
User error			C	C(=)
Provider error				O

8.4.1.3 Parameter use

Invoke Id

For definition of this parameter see clause 7.6.1.

Target Cell Id

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

Target RNC Id

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

HO-Number Not Required

For definition of this parameter see clause 7.6.6.

IMSI

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

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

Integrity Protection Information

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

Encryption Information

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

Radio Resource Information

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

AN-APDU

For definition of this parameter see clause 7.6.9.

Allowed GSM Algorithms

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

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

Allowed UMTS Algorithms

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

- access network protocol is BSSAP and
- Integrity Protection Information and Encryption Information are not available and

Ciphering or Security Mode Setting procedure has been performed.

Radio Resource List

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

RAB ID

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

GERAN Classmark

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

BSSMAP Service Handover

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

BSSMAP Service Handover List

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

RANAP Service Handover

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

Currently Used Codec

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the call is a speech call. This parameter shall not be included if Available Codecs List is not included.

Available Codecs List

For definition of this parameter see subclause 7.6.6. This parameter shall be included if the call is a speech call.

RAB Configuration Indicator

For definition of this parameter see subclause 7.6.6. This parameter may be included if the call is a speech call and MSC-A knows by means of configuration information that MSC-B supports the use of Available Codecs List parameter. This parameter shall not be included if Available Codecs List is not included.

ASCI Call Reference

This parameter contains either the broadcast call reference or group call reference. It shall be included if a subscriber is undergoing ~~Signalling Only~~ handover during a VGCS or VBS call, where MSC-B already has a Bearer established, so that MSC-B can determine the Group or Broadcast Call to which it shall attach the subscriber, see 3GPP TS 48.008 [49]~~(see [100] and [101]).~~

Handover Number

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

Relocation Number List

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

Multicall Bearer Information

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

Multiple Bearer Requested

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

Multiple Bearer Not Supported

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

Selected UMTS Algorithms

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

Chosen Radio Resource Information

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

Selected Codec

For definition of this parameter see subclause 7.6.6. This parameter shall be included always if MSC-B supports the selection of codec based on Available Codecs List, even if Selected Codec is equal to the Currently Used Codec received in the service request. This parameter shall not be included if Available Codecs List was not received in the service request.

User error

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

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

Provider error

See definition of provider errors in clause 7.6.1.

******* Next Changed Section *******

17.7.1 Mobile Service data types

******* Text removed for clarity *******

```
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,
    asciCallReference               [20] ASCI-CallReference             OPTIONAL   ,
    geran-classmark                 [16] GERAN-Classmark                OPTIONAL,
    currentlyUsedCodec              [17] Codec                          OPTIONAL,
    availableCodecsList             [18] AvailableCodecsList            OPTIONAL,
    rab-ConfigurationIndicator      [19] NULL                           OPTIONAL,
    asciCallReference               [20] Asci-CallReference             OPTIONAL    }
```