3GPP TSG-CN Meeting #22 **NP-030528**

10th - 12th December. Maui, Hawaii.

Source: **3GPP TSG CN2**

Title: **CRs to Release 6 WI TEI_6**

Agenda item: **9.21**

Document for: **APPROVAL**

This document contains 3 CRs on **Rel-6 Work Item TEI_6.** These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N2-030561	Enhancements for the Partial Implementation for "Change of position procedure armed with criteria"	23.078	647	1		Rel-6	5.5.1
N2-030587	Change of position armed with criteria (check criteria in MSC)	23.078	645	1		Rel-6	5.5.1
N2-030585	Change of position armed with criteria	29.078	343	1		Rel-6	5.5.0

3GPP TSG CN2 WG2#31
Bangkok, Thailand, 27th - 31st October, 2003

N2-030561
N2-030480rev

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **647** ⌘ **rev** **1** ⌘ Current version: **5.5.1** ⌘

*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:	⌘	Enhancements for the Partial Implementation for "Change of position procedure armed with criteria"
Source:	⌘	Alcatel
Work item code:	⌘	TEI_6
Date:	⌘	28/10/2003
Category:	⌘	**B**
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:	⌘	3GPP SA meeting #21 has approved 22.078 CR-160 "Criteria for "change of position" procedures". The current 23.078 CR is proposing to consider this CAMEL Phase 4 enhancement in the stage 2 23.078 in respect to the Scope and to the Partial Implementation issue.
Summary of change:	⌘	Introduction of a "new Criteria for Change Of Position DP CAMEL" feature, functionality and Information Element.
Consequences if not approved:	⌘	The CAMEL Phase 4 feature of Partial Implementation is not available for Criteria for Change Of Position DP.

Clauses affected:	⌘	1, 1.1.2, 4.6.1.8.2

		Y	N			
Other specs affected:	⌘	X	-	Other core specifications	⌘	29.002 CR 677
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	This CR is based on 23.078 Rel-5. The approved CR shall be provided in a new Rel-6 23.078 document version.

— First modified section —

1 Scope

The present document specifies the stage 2 description for the fourth phase (see 3GPP TS 22.078 [6]) of the Customized Applications for Mobile network Enhanced Logic (CAMEL) feature which provides the mechanisms to support services of operators which are not covered by standardized services even when roaming outside the HPLMN.

The CAMEL feature is a network feature and not a supplementary service. It is a tool to help the network operator to provide the subscribers with the operator specific services even when roaming outside the HPLMN.

In the present document, the GSM Service Control Function (gsmSCF) is treated as being part of the HPLMN. The regulatory environment in some countries may require the possibility that the gsmSCF and the HPLMN are controlled by different operators, and the gsmSCF and the HPLMN are therefore distinct entities.

The fourth phase of the CAMEL feature supports, in addition to the third phase of the CAMEL:

- Interactions with Optimal Routing;
- Call Party Handling;
- DTMF Mid call procedure for Mobile Originated and Mobile Terminating calls;
- Inclusion of flexible tone injection;
- Provision of location information of called subscriber;
- Provide location information during ongoing call;
- CAMEL control over MT SMS;
- Notification of GPRS mobility management to CSE;
- Inclusion of ODB data in Any Time Modification;
- Enhancement of Any Time Interrogation and Provide Subscriber Information for PS Domain;
- Mobile Number Portability database interrogation;
- Criteria for the provision of location information during ongoing call.

CAMEL applicability to IP-based multimedia services is introduced in the fourth phase of the CAMEL. It is specified in 3GPP TS 23.278 [29].

CAMEL is not applicable to Emergency Setup (TS 12), i.e. if an Emergency call is requested, then the gsmSSF shall not be invoked.

The mechanism described in the present document addresses especially the need for information exchange between the VPLMN or IPLMN and the HPLMN for support of operator specific services. Any user procedures for the control of operator specific services are outside the scope of the present document. Subscribers who have subscribed to operator specific services and therefore need the functional support of the CAMEL feature shall be marked in the HPLMN and VPLMN. In case a subscriber is marked to need CAMEL support, the appropriate procedures which provide the necessary information to the VPLMN or the HPLMN are invoked. It is possible for the HPLMN to instruct the VPLMN or IPLMN to interact with a gsmSCF which is controlled by the HPLMN.

The specification of operator specific services is outside the scope of the present document.

— Next modified section —

1.1 Support of partial implementation of CAMEL phase 4

A functional entity (VMSC, GMSC or SGSN) may support the complete CAMEL phase 4 functionality or, as a network option, it may support the complete CAMEL phase 3 functionality and a partial implementation of CAMEL phase 4.

If a functional entity supports any part of CAMEL phase 4, then the HLR is informed of the CAMEL phase 4 CSIs supported. An SGSN may also indicate support of the Provide Subscriber Information IF. To indicate support of a specific CSI, a functional entity shall have the ability to trigger on any initial service event possible for that CSI.

If a VMSC or GMSC supports any of the CAMEL phase 4 circuit switched CSIs (O-CSI, D-CSI, T-CSI or VT-CSI), then the gsmSCF is informed of the CAMEL phase 4 circuit switched functionalities offered. The gsmSCF shall not send information flows or parameters that conflict with the functionalities offered by the VMSC or GMSC.

If a CAMEL subscriber attempts to register in a VMSC or SGSN which supports at least one CAMEL phase 4 CSI or the enhancement of Provide Subscriber Information IF, then the VMSC or SGSN indicates in the registration request to the HLR the phase of CAMEL which the VMSC or SGSN supports (at least phase 4). In addition, the VMSC or SGSN indicates which CAMEL phase 4 CSIs may be downloaded. An SGSN may also indicate support of the Provide Subscriber Information IF.

If a GMSC supports at least one CAMEL phase 4 CSI, then the GMSC indicates in the Send Routeing Info to the HLR the phase of CAMEL which the GMSC supports (at least phase 4). In addition, the GMSC indicates which CAMEL phase 4 CSIs may be downloaded.

If a VMSC/gsmSSF or GMSC/gsmSSF initiates contact with the gsmSCF using the Initial DP IF, or acknowledges a gsmSCF initiated contact using the Initiate Call Attempt ack IF, then the VMSC/gsmSSF or GMSC/gsmSSF indicates in the IF the CAMEL phase 4 functionalities offered to the gsmSCF.

If a VLR initiates contact with the gsmSCF using a Mobility Management Event Notification IF, then the VLR or SGSN indicates in the IF the functionalities offered to the gsmSCF.

1.1.1 CAMEL Phase 4 CSIs

A network entity may indicate to the HLR an offer of support for the following CAMEL phase 4 CSIs:

- CAMEL phase 4 O-CSI;
- CAMEL phase 4 D-CSI;
- CAMEL phase 4 T-CSI;
- CAMEL phase 4 VT-CSI;
- CAMEL phase 4 MT-SMS-CSI;
- CAMEL phase 4 MG-CSI.

An SGSN may also indicate support of the CAMEL phase 4 Provide Subscriber Information IF.

A functional entity (VMSC, GMSC or SGSN) may offer the CSIs in any combination applicable for this entity. A functional entity shall indicate to the HLR all the CSIs it offers. The HLR may ignore the offer of the supported CSIs if they are not applicable for the sending entity, but it shall not reject the operation in this case.

1.1.2 CAMEL Phase 4 Functionalities

The CAMEL phase 4 functionalities which may be offered to the gsmSCF are the following:

- Creating additional parties in a call, Creating a new call (Initiate Call Attempt);
- Placing an individual call party on hold or moving an individual call party to Call Segment 1, when Call Segment 1 does not exist (Split Leg);

- Connecting an individual call party to the group (Move Leg);
- Releasing an individual call party (Disconnect Leg);
- Indication of the release of a call party or call segment (Entity Released);
- Enhancements for subscriber interactions with the gsmSCF (Disconnect Forward Connection With Argument);
- Inclusion of flexible tone injection (Play Tone);
- DTMF Mid call procedure for MO and VT calls (DP O_Mid_Call, DP T_Mid_Call);
- Provision of Charge Indicator at answer DP (Charge Indicator at DP O_Answer, DP T_Answer);
- Support of Alerting DP (DP O_Term_Seized, DP Call_Accepted);
- Provision of location information of called subscriber at alerting DP (Location information at DP Call_Accepted);
- Provision of location information during an ongoing call (DP O_Change_Of_Position, DP T_Change_Of_Position);
- Interactions with Basic Optimal Routeing (Basic OR Interrogation Requested in Connect and Continue With Argument, Route Not Permitted in DP O_Abandon);
- Warning tone enhancements (Burstlist for Audible Indicator); ~~and~~
- Enhancements of Call Forwarding indication (Forwarding Destination Number); and
- Criteria for the provision of location information during ongoing call (Criteria for DP O_Change_Of_Position and DP T_Change_Of_Position).

A functional entity (VMSC or GMSC) may offer the functionalities in any combination applicable for this entity and applicable to the offered CSIs.

A functional entity (VMSC or GMSC) shall indicate to the gsmSCF all the functionallities it offers.

— Next modified section —

4.6.1.8 Initial DP

4.6.1.8.1 Description

This IF is generated by the gsmSSF when a trigger is detected at a DP in the BCSM, to request instructions from the gsmSCF.

4.6.1.8.2 Information Elements

(Note: IEs in the NC columns in this IF may need further study.)

Information element name	MO	MF	MT	VT	NC	NP	Description
Additional Calling Party Number	C	C	C	C	-	C	This IE contains the calling party number provided by the access signalling system of the calling user or received from the gsmSCF due to the previous CAMEL processing.
Bearer Capability	M	C	C	C	-	C	This IE indicates the type of the bearer capability connection to the user. If Bearer Capability 2 is present, then it indicates the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.

Information element name	MO	MF	MT	VT	NC	NP	Description
Called Party Number	C	M	M	M	-	M	This IE contains the number used to identify the called party in the forward direction. For MO and MF calls this IE is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is an MSRN, or in the case of unsuccessful call establishment received from the HLR via the MAP interface, otherwise it is the number used to route the call). For VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number. If the Initial DP IF is sent at TDP Route_Select_Failure or TDP Analysed_Information then the *NatureOfAddress indicator* may contain a national-specific value. For some national-specific *NatureOfAddress indicator* values the length of the digit part of the destination address may be zero.
Called Party BCD Number	C	-	-	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for an MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a Connect IF, Service selection information, such as * and # digits may be present (see subclause 4.2.1.2.2); carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	-	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Partys Category	M	C	C	C	-	C	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	-	C	This IE indicates the type of gapping which has been applied to the related call. This IE shall be present only if a call gapping context is applicable to the Initial DP IF.

Information element name	MO	MF	MT	VT	NC	NP	Description
Call Reference Number	M	M	M	M	-	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	-	-	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the gsmSCF to decide how to continue the call handling.
Event Type BCSM	M	M	M	M	-	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.
Ext-Basic Service Code	C	C	C	C	-	C	This IE indicates the type of basic service, i.e. teleservice or bearer service. If Bearer Capability 2 is present, then it indicates the basic service which corresponds to the preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.
High Layer Compatibility	C	C	C	C	-	C	This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.
IMSI	M	M	M	M	-	S	This IE identifies the mobile subscriber. For the NP case, the IMSI is mandatory if the new party is initiated in an MO, MF, MT, or VT call, otherwise it shall be absent.
IP SSP Capabilities	C	C	C	C	-	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, it indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	-	-	This IE is described in a table below.
Location Number	M	C	C	C	-	-	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in the incoming ISUP signalling.
MSC Address	M	M	M	M	-	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For MF calls, the MSC Address carries the international E.164 address of the forwarding MSC. For the NP case, the MSC address carries the international E.164 address of the serving VMSC (the NP case in the GMSC will not cause an Initial DP IF).

Information element name	MO	MF	MT	VT	NC	NP	Description
GMSC Address	-	M	-	M	-	S	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC. For NP case, the GMSC Address is mandatory if the new party is initiated in an MF call or in a VT call, otherwise it shall be absent. The GMSC Address carries the international E.164 address of the GMSC.
Carrier	S	S	S	S	-	S	This IE is described in a table below. This IE may be present when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall identify any carrier that was explicitly selected by the calling subscriber. If no carrier was explicitly selected, this IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For MF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	C	C	C	C	-	-	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.
Redirecting Party ID	C	C	C	C	-	-	This IE indicates the directory number the call was redirected from. This IE shall also be sent if it was received from the gsmSCF due to previous CAMEL processing.
Redirection Information	C	C	C	C	-	-	This IE contains forwarding related information, such as the redirection counter.
Service Key	M	M	M	M	-	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application within the gsmSCF.
Subscriber State	-	-	C	C	-	-	This IE indicates the status of the MS. The states are: - CAMEL Busy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - Network Determined Not Reachable: The network can determine from its internal data that the MS is not reachable. - Assumed Idle: The state of the MS is neither "CAMEL Busy" nor "Network Determined Not Reachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	-	M	This IE contains the time that the gsmSSF was triggered, and the time zone in which gsmSSF resides.

Information element name	MO	MF	MT	VT	NC	NP	Description
Call Forwarding SS Pending	-	-	C	C	-	-	If the Initial DP IF is sent from the GMSC, then this IE shall be present in the following cases: - The GMSC has received an FTN in the 1st Send Routeing Info ack IF from the HLR. - The GMSC has received an FTN in the 2nd Send Routeing Info ack IF from the HLR and no relationship with the gsmSCF exists at that moment. - The GMSC has received the Resume Call Handling IF from the VMSC and no relationship with the gsmSCF exists at that moment. If the Initial DP IF is sent from the VMSC, then this IE shall be present in the following cases: - Conditional call forwarding is invoked and no relationship with the gsmSCF exists at that moment. - Call Deflection is invoked and no relationship with the gsmSCF exists at that moment.
Forwarding Destination Number	-	-	C	C	-	-	This IE contains the Forwarded-to-Number or the Deflected-to-Number. It shall be present if the Call Forwarding SS Pending IE is present, otherwise it shall be absent.
Service Interaction Indicators Two	C	C	C	C	-	C	The IE is described in a table below. This IE is present if it is received in the ISUP message or due to previous CAMEL processing.
CUG Index	C	-	-	-	-	C	See 3GPP TS 23.085 [22] for details of this IE.
CUG Interlock Code	C	C	C	C	-	C	This IE shall be set according to 3GPP TS 23.085 [22] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
Outgoing Access Indicator	C	C	C	C	-	C	This IE shall be set according to the 3GPP TS 23.085 [22] unless modified by the gsmSCF via the Connect or Continue With Argument IFs.
MS Classmark 2	C	-	-	-	-	-	This IE contains the MS classmark 2, which is sent by the MS when it requests access to setup the MO call or responds to paging in the CS domain.
IMEI (with software version)	C	-	-	-	-	-	This IE contains the IMEISV (as defined in 3GPP TS 23.003 [7]) of the ME in use by the served subscriber.
Supported CAMEL Phases	M	M	M	M	M	M	This IE indicates the CAMEL Phases supported by the GMSC or the VMSC.
Offered CAMEL4 Functionalities	M	M	M	M	M	M	This IE is described in a table below. This IE indicates the CAMEL phase 4 functionalities offered by the GMSC or the VMSC.
Bearer Capability 2	C	C	C	C	-	-	This IE indicates the type of the bearer capability connection to the user. If Bearer Capability 2 is present, then it indicates the less preferred bearer capability for a SCUDIF (as defined in 3GPP TS 23.172 [27]) call.
Ext-Basic Service Code 2	C	C	C	C	-	-	This IE indicates the type of basic service, i.e. teleservice or bearer service. If bearer Capability 2 is present, then it indicates the basic service which corresponds to the less preferred bearer capability for a SCUDIF call.

Offered CAMEL4 Functionalities contains the following information elements:

Information element name	Status	Description
Initiate Call Attempt	S	This IE indicates that the gsmSCF may send to the gsmSSF the Initiate Call Attempt IF.
Split Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Split Leg IF.
Move Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Move Leg IF.
Disconnect Leg	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Leg IF.
Entity Released	S	This IE indicates that the gsmSSF will send to the gsmSCF the Entity Released IF, when appropriate.
DFC With Argument	S	This IE indicates that the gsmSCF may send to the gsmSSF the Disconnect Forward Connection With Argument IF.
Play Tone	S	This IE indicates that the gsmSCF may send to the gsmSSF the Play Tone IF.
DTMF Mid Call	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_MidCall or T_MidCall DP. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
Charging Indicator	S	This IE indicates that the Charge Indicator IE may be present in the Event Report BCSM IF reporting the O_Answer or T_Answer DP.
Alerting DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Term_Seized or Call_Accepted DP.
Location At Alerting	S	This IE indicates that the Location Information IE shall be present (if available) in the Event Report BCSM IF reporting the Call_Accepted DP.
Change Of Position DP	S	This IE indicates that the gsmSCF may instruct the gsmSSF to arm the O_Change_Of_Position or T_Change_Of_Position DPs. The gsmSCF may instruct the gsmSSF to automatically re-arm the DP, when encountered.
OR Interactions	S	This IE indicates that the gsmSCF may send to the gsmSSF the Basic OR Interrogation Requested IE in the Connect or Continue With Argument IF. This IE indicates that the Route Not Permitted IE may be present in the Event Report BCSM IF reporting the O_Abandon DP.
Warning Tone Enhancements	S	This IE indicates that the gsmSCF may send to the gsmSSF the Burstlist IE (within the Audible Indicator IE) in an Apply Charging IF.
CF Enhancements	S	This IE indicates that the Forwarding Destination Number IE may be present in the Event Report BCSM IF reporting the T_Busy or T_No_Answer DP.
Criteria for Change Of Position DP	S	This IE indicates that the gsmSCF may send to the gsmSSF in the Request Report BCSM Event IF criteria for reporting the report of O_Change_Of_Position or T_Change_Of_Position DPs.

Location Information is defined in 3GPP TS 23.018 [12]. The following differences apply:

Information element name	MO	MF	MT	VT	NC	NP	Description
Location Number	-	-	C	C	-	-	See 3GPP TS 23.018 [12].
Service area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [12].
Cell ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.018 [12].
Geographical information	C	-	C	C	-	-	See 3GPP TS 23.018 [12].
Geodetic information	C	-	C	C	-	-	See 3GPP TS 23.018 [12].
VLR number	M	-	C	M	-	-	See 3GPP TS 23.018 [12].
Age Of location information	M	-	C	C	-	-	See 3GPP TS 23.018 [12].
Current Location Retrieved	-	-	-	-	-	-	Not applicable
Location area ID	C,E	-	C,E	C,E	-	-	See 3GPP TS 23.003 [7].
Selected LSA Identity	S	-	S	S	-	-	This IE indicates the LSA identity associated with the current position of the MS. It shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be present. See 3GPP TS 23.073 [18]. This IE shall be present if available and SoLSA is supported, otherwise it shall be absent.

Carrier contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description

Information element name	MO	MF	MT	VT	NC	NP	Description
Carrier Identification Code	M	M	M	M	-	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	-	M	This IE indicates the way the carrier was selected, i.e.: - dialled - subscribed

Service Interaction Indicators Two contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Forward Service Interaction Indicator	C	C	C	C	-	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the CAMEL subscriber.

Forward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	-	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection supplementary services.

— END —

3GPP TSG CN WG2 Meeting #31 ***N2-030585***
Bangkok, Thailand, 27th – 31th October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **343** ⌘ **rev** **1** ⌘ Current version: **5.5.0** ⌘

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

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

Title:	⌘	Change of position armed with criteria
Source:	⌘	Siemens AG
Work item code:	⌘	TEI_6
Date:	⌘	30/10/2003
Category:	⌘	**B**
Release:	⌘	Rel-6

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

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Rel-5 *(Release 5)*
Rel-6 *(Release 6)*

Reason for change:	⌘	Change due to the stage 1 changes (CR 22.078-160, S1-030727, approved by SA1#21 Sofia Antipolis, 7 - 11 July 2003, and CR 22.078-xxx, approved by SA1#22 Bangkok, 27 - 30 October 2003).
Summary of change:	⌘	CAP_RequestReportBCSMEvent is enhanced to include the criteria for O/T_Change_Of_Position, as follows: - `DpSpecificCriteriaAlt` include `changeOfPositionControlInfo` whose data type is `ChangeOfPositionControlInfo`. A note is added as for MidCall. The description is also added in 11.27.1.1 (RequestReportBCSMEvent procedure) - `ChangeOfPositionControlInfo` contains up to `&numOfChangeOfPositionControlInfo` of `ChangeOfLocation`. - `ChangeOfLocation` data type is CHOICE of `cellGlobalId`, `serviceAreaId`, `locationAreaId`, `inter-SystemHandover`, `Inter-PLMNHandover` and `Inter-MSCHandover`. Note is added concerning the encoding of location. Also prepared for future extension. - `&numOfChangeOfPositionControlInfo` is actually `NUM-OF-CHANGE-OF-POSITION-CONTROL-INFO` which is set to 10.
Consequences if not approved:	⌘	Service requirement is not technically realised. Signalling load would increase drastically and the CSE (gsmSCF) mightbe overloaded by the unnecessary information for the service.

Clauses affected:	⌘	5, 11

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	23.078-645
			X	Test specifications		
			X	O&M Specifications		

Other comments:	⌘	

***** First modified part *****

5.1 Data types

```
CAP-datatypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-datatypes(52) version4(3)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

IMPORTS

    Duration,
    Integer4,
    Interval,
    LegID,
    ServiceKey
FROM CS1-DataTypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatypes(2) version1(0)}

    BothwayThroughConnectionInd,
    CriticalityType,
    MiscCallInfo
FROM CS2-datatypes {itu-t(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
cs2(20) modules(0) in-cs2-datatypes(0) version1(0)}

    AddressString,
    Ext-BasicServiceCode,
    IMSI,
    ISDN-AddressString,
    NAEA-CIC
FROM MAP-CommonDataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-CommonDataTypes(18) version8(8)}

    CellGlobalIdOrServiceAreaIdFixedLength,
    Ext-QoS-Subscribed,
    GeographicalInformation,
    GSN-Address,
    LAIFixedLength,
    LocationInformation,
    LSAIdentity,
    QoS-Subscribed,
    RAIdentity,
    SubscriberState,
    GPRSChargingID
FROM MAP-MS-DataTypes {itu-t(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-MS-DataTypes(11) version~~8~~9(~~8~~9)}


BCSMEvent{PARAMETERS-BOUND : bound} ::= SEQUENCE {
    eventTypeBCSM                   [0] EventTypeBCSM,
    monitorMode                     [1] MonitorMode,
    legID                           [2] LegID                                   OPTIONAL,
    dpSpecificCriteria              [30] DpSpecificCriteria {bound}             OPTIONAL,
    automaticRearm                  [50] NULL                                   OPTIONAL,
    ...
    }
-- Indicates the BCSM Event information for monitoring.


ChangeOfPositionControlInfo {PARAMETERS-BOUND : bound} ::= SEQUENCE SIZE
(1..bound.&numOfChangeOfPositionControlInfo) OF ChangeOfLocation {bound}

ChangeOfLocation {PARAMETERS-BOUND : bound} ::= CHOICE {
    cellGlobalId                    [0] CellGlobalIdOrServiceAreaIdFixedLength,
    serviceAreaId                   [1] CellGlobalIdOrServiceAreaIdFixedLength,
    locationAreaId                  [2] LAIFixedLength,
    inter-SystemHandOver            [3] NULL,
    inter-PLMNHandOver              [4] NULL,
    inter-MSCHandOver               [5] NULL,
    changeOfLocationAlt             [6] ChangeOfLocationAlt {bound}
}
-- The cellGlobalId shall contain~~s~~ a Cell Global Identification.
-- The serviceAreaId shall contain~~s~~ a Service Area Identification

ChangeOfLocationAlt {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    ...
    }
```

```
DpSpecificCriteria {PARAMETERS-BOUND : bound}::= CHOICE {
    applicationTimer                    [1] ApplicationTimer,
    midCallControlInfo                  [2] MidCallControlInfo,
    dpSpecificCriteriaAlt               [3] DpSpecificCriteriaAlt {bound}
    }
--  Exception handling: reception of DpSpecificCriteriaAlt shall be treated like
--  reception of no DpSpecificCriteria.
--  The gsmSCF may set a timer in the gsmSSF for the No_Answer event.
--  If the user does not answer the call within the allotted time,
--  then the gsmSSF reports the event to the gsmSCF.
--  The gsmSCF may define a criterion for the detection of DTMF digits during a call.
--  The gsmSCF may define other criteria in the dpSpecificCriteriaAlt alternative
--  in future releases.

DpSpecificCriteriaAlt {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    ...,
    changeOfPositionControlInfo         [0] ChangeOfPositionControlInfo {bound}
    }
-- The gsmSCF may define a criterion for the detection of change of location during a call.
-- This datatype is for extension in future releases.
```

***** Next modified part *****

5.5 Classes

```
...

PARAMETERS-BOUND ::= CLASS {
    &minAccessPointNameLength                   INTEGER,
    &maxAccessPointNameLength                   INTEGER,
    &minAChBillingChargingLength                INTEGER,
    &maxAChBillingChargingLength                INTEGER,
    &minAttributesLength                        INTEGER,
    &maxAttributesLength                        INTEGER,
    &maxBearerCapabilityLength                  INTEGER,
    &minCalledPartyBCDNumberLength              INTEGER,
    &maxCalledPartyBCDNumberLength              INTEGER,
    &minCalledPartyNumberLength                 INTEGER,
    &maxCalledPartyNumberLength                 INTEGER,
    &minCallingPartyNumberLength                INTEGER,
    &maxCallingPartyNumberLength                INTEGER,
    &minCallResultLength                        INTEGER,
    &maxCallResultLength                        INTEGER,
    &minCarrierLength                           INTEGER,
    &maxCarrierLength                           INTEGER,
    &minCauseLength                             INTEGER,
    &maxCauseLength                             INTEGER,
    &minDigitsLength                            INTEGER,
    &maxDigitsLength                            INTEGER,
    &minFCIBillingChargingDataLength            INTEGER,
    &maxFCIBillingChargingDataLength            INTEGER,
    &minFCIBillingChargingLength                INTEGER,
    &maxFCIBillingChargingLength                INTEGER,
    &minGenericNumberLength                     INTEGER,
    &maxGenericNumberLength                     INTEGER,
    &minGPRSCauseLength                         INTEGER,
    &maxGPRSCauseLength                         INTEGER,
    &minIPSSPCapabilitiesLength                 INTEGER,
    &maxIPSSPCapabilitiesLength                 INTEGER,
    &minLocationNumberLength                    INTEGER,
    &maxLocationNumberLength                    INTEGER,
    &minMessageContentLength                    INTEGER,
    &maxMessageContentLength                    INTEGER,
    &minOriginalCalledPartyIDLength             INTEGER,
    &maxOriginalCalledPartyIDLength             INTEGER,
    &minPDPAddressLength                        INTEGER,
    &maxPDPAddressLength                        INTEGER,
    &minRedirectingPartyIDLength                INTEGER,
    &maxRedirectingPartyIDLength                INTEGER,
    &minScfIDLength                             INTEGER,
    &maxScfIDLength                             INTEGER,
    &minSCIBillingChargingLength                INTEGER,
    &maxSCIBillingChargingLength                INTEGER,
    &minTimeAndTimezoneLength                   INTEGER,
    &maxTimeAndTimezoneLength                   INTEGER,
```

```
    &numOfBCSMEvents                        INTEGER,
    &numOfChangeOfPositionInfo              INTEGER,
    &numOfCSs                               INTEGER,
    &numOfSMSEvents                         INTEGER,
    &numOfGPRSEvents                        INTEGER,
    &numOfExtensions                        INTEGER,
    &numOfGenericNumbers                    INTEGER,
    &numOfMessageIDs                        INTEGER}

WITH SYNTAX {
    MINIMUM-FOR-ACCESS-POINT-NAME           &minAccessPointNameLength
    MAXIMUM-FOR-ACCESS-POINT-NAME           &maxAccessPointNameLength
    MINIMUM-FOR-ACH-BILLING-CHARGING        &minAChBillingChargingLength
    MAXIMUM-FOR-ACH-BILLING-CHARGING        &maxAChBillingChargingLength
    MINIMUM-FOR-ATTRIBUTES                  &minAttributesLength
    MAXIMUM-FOR-ATTRIBUTES                  &maxAttributesLength
    MAXIMUM-FOR-BEARER-CAPABILITY           &maxBearerCapabilityLength
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER     &minCalledPartyBCDNumberLength
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER     &maxCalledPartyBCDNumberLength
    MINIMUM-FOR-CALLED-PARTY-NUMBER         &minCalledPartyNumberLength
    MAXIMUM-FOR-CALLED-PARTY-NUMBER         &maxCalledPartyNumberLength
    MINIMUM-FOR-CALLING-PARTY-NUMBER        &minCallingPartyNumberLength
    MAXIMUM-FOR-CALLING-PARTY-NUMBER        &maxCallingPartyNumberLength
    MINIMUM-FOR-CALL-RESULT                 &minCallResultLength
    MAXIMUM-FOR-CALL-RESULT                 &maxCallResultLength
    MINIMUM-FOR-CARRIER                     &minCarrierLength
    MAXIMUM-FOR-CARRIER                     &maxCarrierLength
    MINIMUM-FOR-CAUSE                       &minCauseLength
    MAXIMUM-FOR-CAUSE                       &maxCauseLength
    MINIMUM-FOR-DIGITS                      &minDigitsLength
    MAXIMUM-FOR-DIGITS                      &maxDigitsLength
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA   &minFCIBillingChargingDataLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA   &maxFCIBillingChargingDataLength
    MINIMUM-FOR-FCI-BILLING-CHARGING        &minFCIBillingChargingLength
    MAXIMUM-FOR-FCI-BILLING-CHARGING        &maxFCIBillingChargingLength
    MINIMUM-FOR-GENERIC-NUMBER              &minGenericNumberLength
    MAXIMUM-FOR-GENERIC-NUMBER              &maxGenericNumberLength
    MINIMUM-FOR-GPRS-CAUSE-LENGTH           &minGPRSCauseLength
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH           &maxGPRSCauseLength
    MINIMUM-FOR-IP-SSP-CAPABILITIES         &minIPSSPCapabilitiesLength
    MAXIMUM-FOR-IP-SSP-CAPABILITIES         &maxIPSSPCapabilitiesLength
    MINIMUM-FOR-LOCATION-NUMBER             &minLocationNumberLength
    MAXIMUM-FOR-LOCATION-NUMBER             &maxLocationNumberLength
    MINIMUM-FOR-MESSAGE-CONTENT             &minMessageContentLength
    MAXIMUM-FOR-MESSAGE-CONTENT             &maxMessageContentLength
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID    &minOriginalCalledPartyIDLength
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID    &maxOriginalCalledPartyIDLength
    MINIMUM-FOR-PDP-ADDRESS-LENGTH          &minPDPAddressLength
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH          &maxPDPAddressLength
    MINIMUM-FOR-REDIRECTING-ID              &minRedirectingPartyIDLength
    MAXIMUM-FOR-REDIRECTING-ID              &maxRedirectingPartyIDLength
    MINIMUM-FOR-GSMSCF-ID                   &minScfIDLength
    MAXIMUM-FOR-GSMSCF-ID                   &maxScfIDLength
    MINIMUM-FOR-SCI-BILLING-CHARGING        &minSCIBillingChargingLength
    MAXIMUM-FOR-SCI-BILLING-CHARGING        &maxSCIBillingChargingLength
    MINIMUM-FOR-TIME-AND-TIMEZONE           &minTimeAndTimezoneLength
    MAXIMUM-FOR-TIME-AND-TIMEZONE           &maxTimeAndTimezoneLength
    NUM-OF-BCSM-EVENT                       &numOfBCSMEvents
    NUM-OF-CHANGE-OF-POSITION-CONTROL-INFO  &numOfChangeOfPositionControlInfo
    NUM-OF-CSS                              &numOfCSs
    NUM-OF-SMS-EVENTS                       &numOfSMSEvents
    NUM-OF-GPRS-EVENTS                      &numOfGPRSEvents
    NUM-OF-EXTENSIONS                       &numOfExtensions
    NUM-OF-GENERIC-NUMBERS                  &numOfGenericNumbers
    NUM-OF-MESSAGE-IDS                      &numOfMessageIDs}

cAPSpecificBoundSet PARAMETERS-BOUND ::= {
    MINIMUM-FOR-ACCESS-POINT-NAME           1
    MAXIMUM-FOR-ACCESS-POINT-NAME           100
    MINIMUM-FOR-ACH-BILLING-CHARGING        5
    MAXIMUM-FOR-ACH-BILLING-CHARGING        177
    MINIMUM-FOR-ATTRIBUTES                  2
    MAXIMUM-FOR-ATTRIBUTES                  10
    MAXIMUM-FOR-BEARER-CAPABILITY           11
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER     1
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER     41
    MINIMUM-FOR-CALLED-PARTY-NUMBER         2
    MAXIMUM-FOR-CALLED-PARTY-NUMBER         18
    MINIMUM-FOR-CALLING-PARTY-NUMBER        2
```

```
    MAXIMUM-FOR-CALLING-PARTY-NUMBER          10
    MINIMUM-FOR-CALL-RESULT                   12
    MAXIMUM-FOR-CALL-RESULT                   193
    MINIMUM-FOR-CARRIER                       4
    MAXIMUM-FOR-CARRIER                       4
    MINIMUM-FOR-CAUSE                         2
    MAXIMUM-FOR-CAUSE                         32
    MINIMUM-FOR-DIGITS                        2
    MAXIMUM-FOR-DIGITS                        16
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA     1
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA     160
    MINIMUM-FOR-FCI-BILLING-CHARGING          5
    MAXIMUM-FOR-FCI-BILLING-CHARGING          225
    MINIMUM-FOR-GENERIC-NUMBER                3
    MAXIMUM-FOR-GENERIC-NUMBER                11
    MINIMUM-FOR-GPRS-CAUSE-LENGTH             1
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH             1
    MINIMUM-FOR-IP-SSP-CAPABILITIES           1
    MAXIMUM-FOR-IP-SSP-CAPABILITIES           4
    MINIMUM-FOR-LOCATION-NUMBER               2
    MAXIMUM-FOR-LOCATION-NUMBER               10
    MINIMUM-FOR-MESSAGE-CONTENT               1
    MAXIMUM-FOR-MESSAGE-CONTENT               127
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      2
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID      10
    MINIMUM-FOR-PDP-ADDRESS-LENGTH            1
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH            63
    MINIMUM-FOR-REDIRECTING-ID                2
    MAXIMUM-FOR-REDIRECTING-ID                10
    MINIMUM-FOR-GSMSCF-ID                     2
    MAXIMUM-FOR-GSMSCF-ID                     10
    MINIMUM-FOR-SCI-BILLING-CHARGING          4
    MAXIMUM-FOR-SCI-BILLING-CHARGING          124
    MINIMUM-FOR-TIME-AND-TIMEZONE             8
    MAXIMUM-FOR-TIME-AND-TIMEZONE             8
    NUM-OF-BCSM-EVENT                         10
    NUM-OF-CHANGE-OF-POSITION-CONTROL-INFO    10
    NUM-OF-CSS                                127
    NUM-OF-SMS-EVENTS                         10
    NUM-OF-GPRS-EVENTS                        10
    NUM-OF-EXTENSIONS                         10
    NUM-OF-GENERIC-NUMBERS                    5
    NUM-OF-MESSAGE-IDS                        16}

END
```

***** Next modified part *****

11.27 RequestReportBCSMEvent procedure

11.27.1 General description

The gsmSCF uses this operation to request the gsmSSF to monitor for a call-related event (e.g., BCSM events such as O_Busy or O_No_Answer) and to send a notification to the gsmSCF when the event is detected.

The monitoring of more than one event may be requested with a single "RequestReportBCSMEvent" operation, but each of these requested events will be reported in a separate "EventReportBCSM" operation.

NOTE: If the RequestReportBCSMEvent requests arming of the current DP from which the call processing was suspended, then the next occurrance of the DP encountered during BCSM processing will be detected (i.e. not the current one from which the call was suspended).

The DP arming principle is as follows:

- The DPs O_Disconnect and T_Disconnect can be armed for any or all legs depending on the direction for which events have to be captured. As an example, the O_Disconnect DP can be armed for leg1 and leg2; in this case, if a release request is received from the A-party, then it will be detected by the O_Disconnect DP armed for leg1, while a release request from the B-party will be detected by the O_Disconnect DP armed for leg2.

- The O_Abandon DP can be armed only for leg1 in the O-BCSM and the T_Abandon DP can be armed only for leg1 in the T-BCSM.

Table 11-1: DP Arming Table for O-BCSM:

O-BCSM	leg1	Not leg 1	Default_leg_ID
O_Term_Seized DP	-	X	2
Route_Select_Failure DP	-	X	2
O_Busy DP	-	X	2
O_No_Answer DP	-	X	2
O_Answer DP	-	X	2
O_Disconnect DP	X	X	- (note 1)
O_Abandon DP	X	-	1
O_Mid_Call	X	-	1
O_Change_Of_Position	X	-	1
Note 1: The "legID" parameter shall be included Nomenclature: X = Arming Applicable - = Arming not Applicable			

Table 11-2: DP Arming Table for T-BCSM:

T-BCSM	leg2	leg1	Default Leg ID
Call_Accepted DP	X	-	2
T_Busy DP	X	-	2
T_No_Answer DP	X	-	2
T_Answer DP	X	-	2
T_Disconnect DP	X	X	- (note 1)
T_Abandon DP	-	X (note 2)	1
T_Mid_Call	X	-	2
T_Change_Of_Position	X	-	2
Note 1: The "legID" parameter shall be included Note 2: T_Abandon can be armed for leg1 only. Nomenclature: X = Arming Applicable - = Arming not Applicable			

11.27.1.1 Parameters

- bcsmEvents:
  This parameter specifies the event or events of which a report is requested.

  - eventTypeBCSM:
    This parameter specifies the type of event of which a report is requested.

  - monitorMode:
    This parameter indicates how the event shall be reported. If the "monitorMode" is "interrupted", then the event shall be reported as a request; if the "monitorMode" is "notifyAndContinue", then the event shall be reported as a notification; if the "monitorMode" is "transparent", then the event shall not be reported.

  - legID:
    This parameter indicates the party in the call for which the event shall be reported. The gsmSCF shall use the option "sendingSideID" only.

    - sendingSideID:

      If not included, then the following defaults are assumed for LegID:

      "legID" = 1 for the events O_Abandon, T_Abandon and O_Mid_Call,

      "legID" = 2 for the events Route_Select_Failure, O_Busy, O_No_Answer, O_Answer, T_Busy, O_Term_Seized, Call_Accepted, T_No_Answer, T_Answer and T_Mid_Call.

    The "legID" parameter shall always be included for the events O_Disconnect and T_Disconnect.

- dPSpecificCriteria:
  This parameter contains~~INS~~ information specific to the EDP that shall be armed.

  - applicationTimer:
    This parameter indicates the No_Answer timer value for the No_Answer event. If the called party does not answer the call within the allotted time, then the gsmSSF shall report the event to the gsmSCF. This timer shall be shorter than the network No_Answer timer.

  - midCallControlInfo:
    This parameter defines the criterion for the detection and reporting of mid-call digits. If this parameter is absent, then the first digit entered shall be reported.

  - changeOfPositionControlInfo:
    This parameter defines the criterion for the reporting of change of location. If this parameter is absent, then any change of position shall be reported.

- automaticRearm:
  This parameter indicates that the gsmSSF shall rearm the DP whenever it is encountered.

11.27.2 Responding entity (gsmSSF)

11.27.2.1 Normal procedure

gsmSSF preconditions:

(1) A control relationship exists between the gsmSSF and the gsmSCF.

(2) The gsmSSF FSM is in the state "Waiting_for_Instructions" or in the state "Monitoring".

NOTE: In the state "monitoring" only requests to disarm detection points (with MonitorMode set to "Transparent") or to send notifications of events (with MonitorMode set to "NotifyAndContinue") shall be accepted by the gsmSSF.

gsmSSF postconditions:

(1) The requested EDPs are armed or disarmed as indicated.

(2) Previously requested events are monitored until ended by a transparent monitor mode, until the end of the call, until the EDPs are detected or until the corresponding leg is released.

(3) The gsmSSF FSM remains in the same state, unless all EDPs have been disarmed and no CallInformationReport or ApplyChargingReport has been requested; in the latter case, the gsmSSF FSM transits to the state "Idle".

11.27.2.2 Error handling

Generic error handling for the operation related errors are described in clause 10 and the TC services which are used for reporting operation errors are described in clause 14.

***** End of document *****

3GPP TSG CN WG2 Meeting #31 ***N2-030587***
Bangkok, Thailand, 27th – 31th October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **645** ⌘ **rev** **1** ⌘ Current version: **5.5.1** ⌘

*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:	⌘	Change of position armed with criteria (check criteria in MSC)
Source:	⌘	Siemens AG
Work item code:	⌘	TEI_6
Date:	⌘	31/01/2003
Category:	⌘	**B**
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:	⌘	Change due to the stage 1 changes (CR 22.078-160, S1-030727, approved by SA1#21 Sofia Antipolis, 7 - 11 July 2003, and CR 22.078-xxx, approved by SA1#22 Bangkok, 27 - 11 October 2003).
Summary of change:	⌘	Process CAMEL_O/T_CHANGE_OF_POSITION: - Task box "Store criteria" inserted when the internal signal from CS_gsmSSF indicates Nofity&continue mode. - Call the procedure Check_Criteria_Change_Of_Position when the handover event is reported from RNC/process CAMEL_CHANGE_OF_POSITION. The internal signal of this event is sent to CS_gsmSSF only when the result is "Pass". Procedure Check_Criteria_Change_Of_Position: - New procedure which is called both by the procedure for the originating subscriber and by one for the terminating subscriber. The checking process is aligned with the one described in the stage 1. Request Report BCSM Event IF: - DP Specific Criteria IE is enhanced, to include "Change of Position Control Info" which contains up to 10 criterion. Each criteria contains either Location (value of LAI, SAI or CellID -- see CR 29.078-343), indication of Inter-system handover or indication of Inter-PLMN handover.
Consequences if not approved:	⌘	Service requirement is not technically realised. Signalling load would increase drastically and the CSE (gsmSCF) might be overloaded by the unnecessary information for the service.

Clauses affected:	⌘	4				
		Y	**N**			
Other specs affected:	⌘	**X**		Other core specifications	⌘	29.078-343
			X	Test specifications		
			X	O&M Specifications		
Other comments:	⌘					

*** First modified part ***

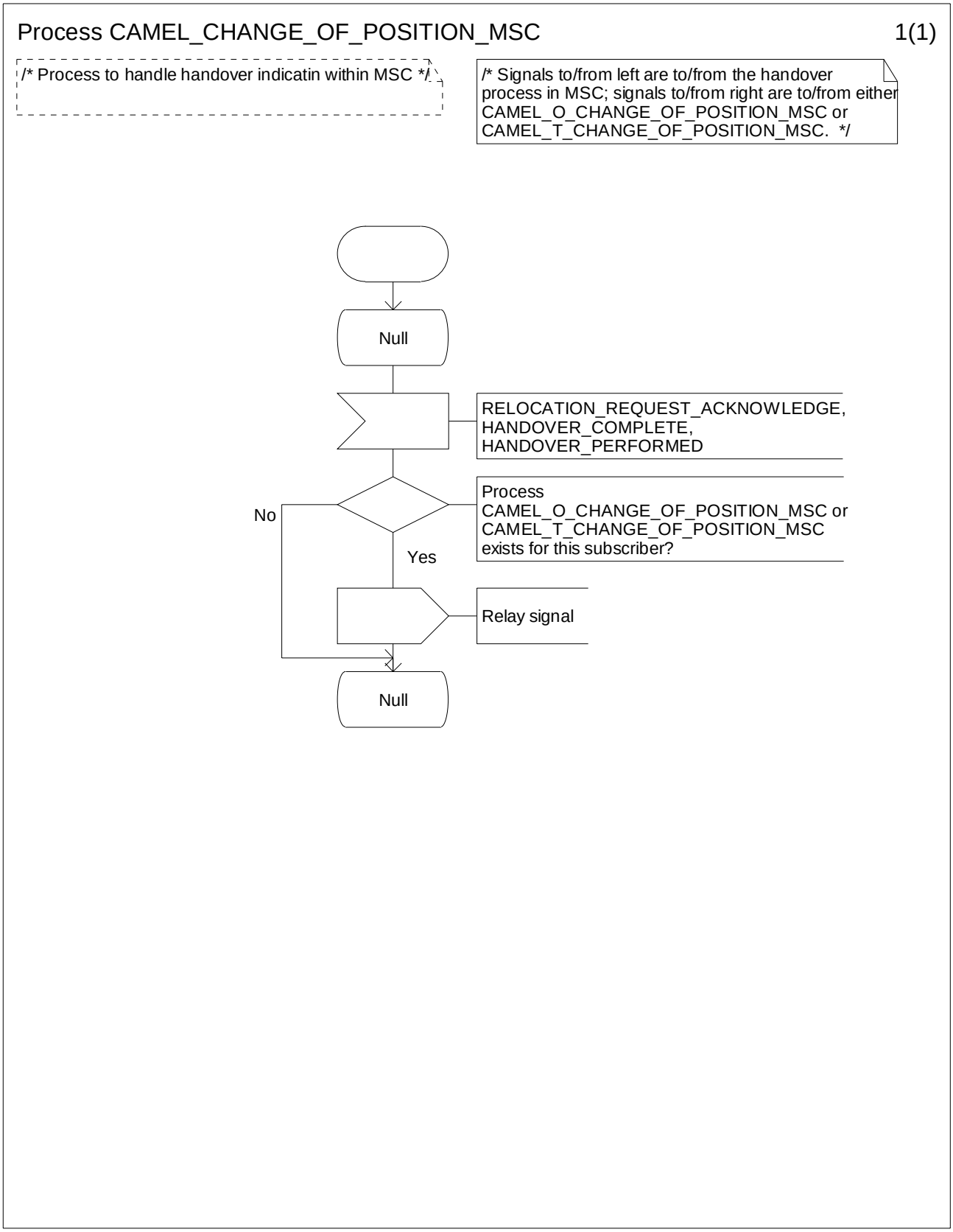


Figure 4.34-1: Process CAMEL_CHANGE_OF_POSITION_MSC (sheet 1)

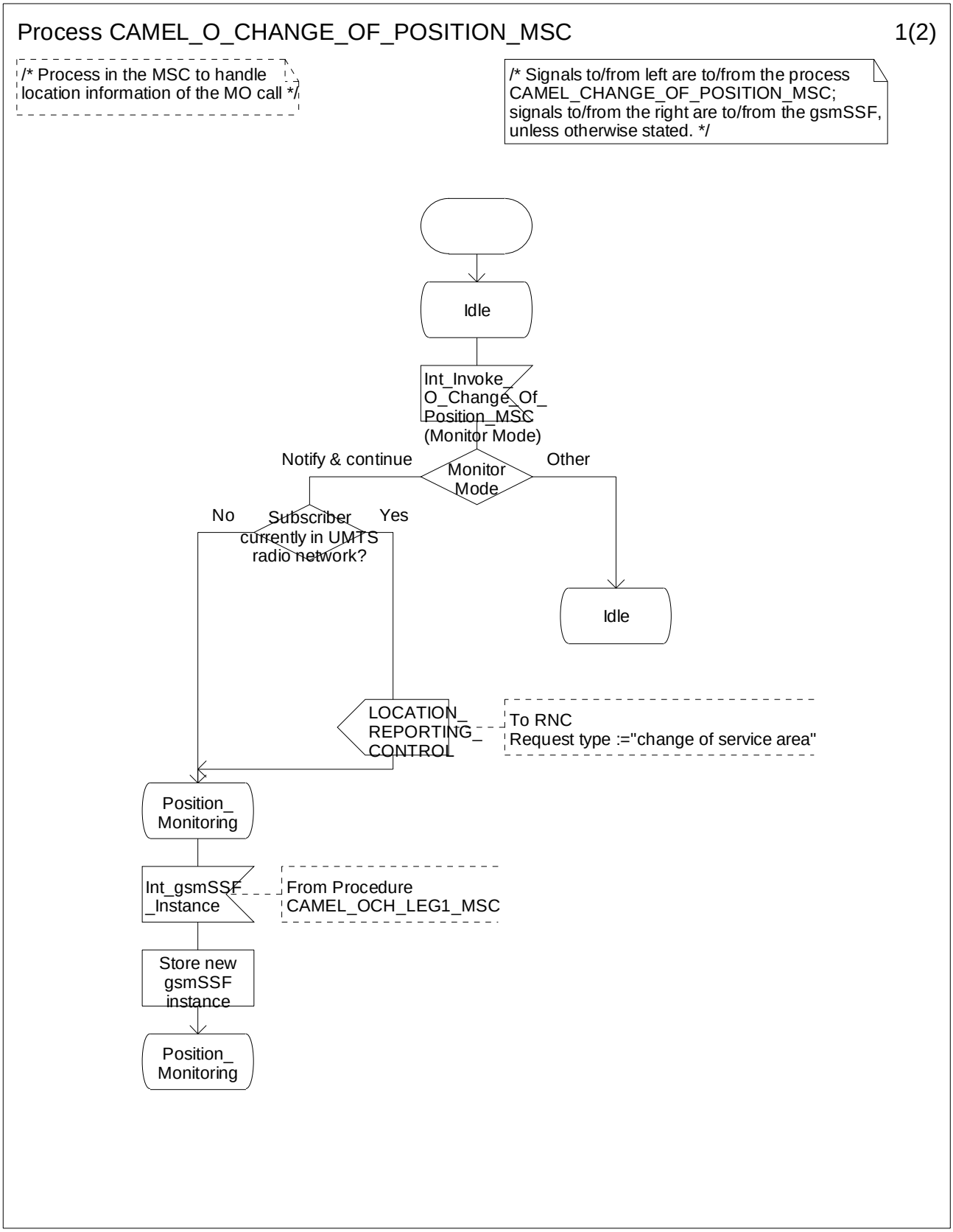
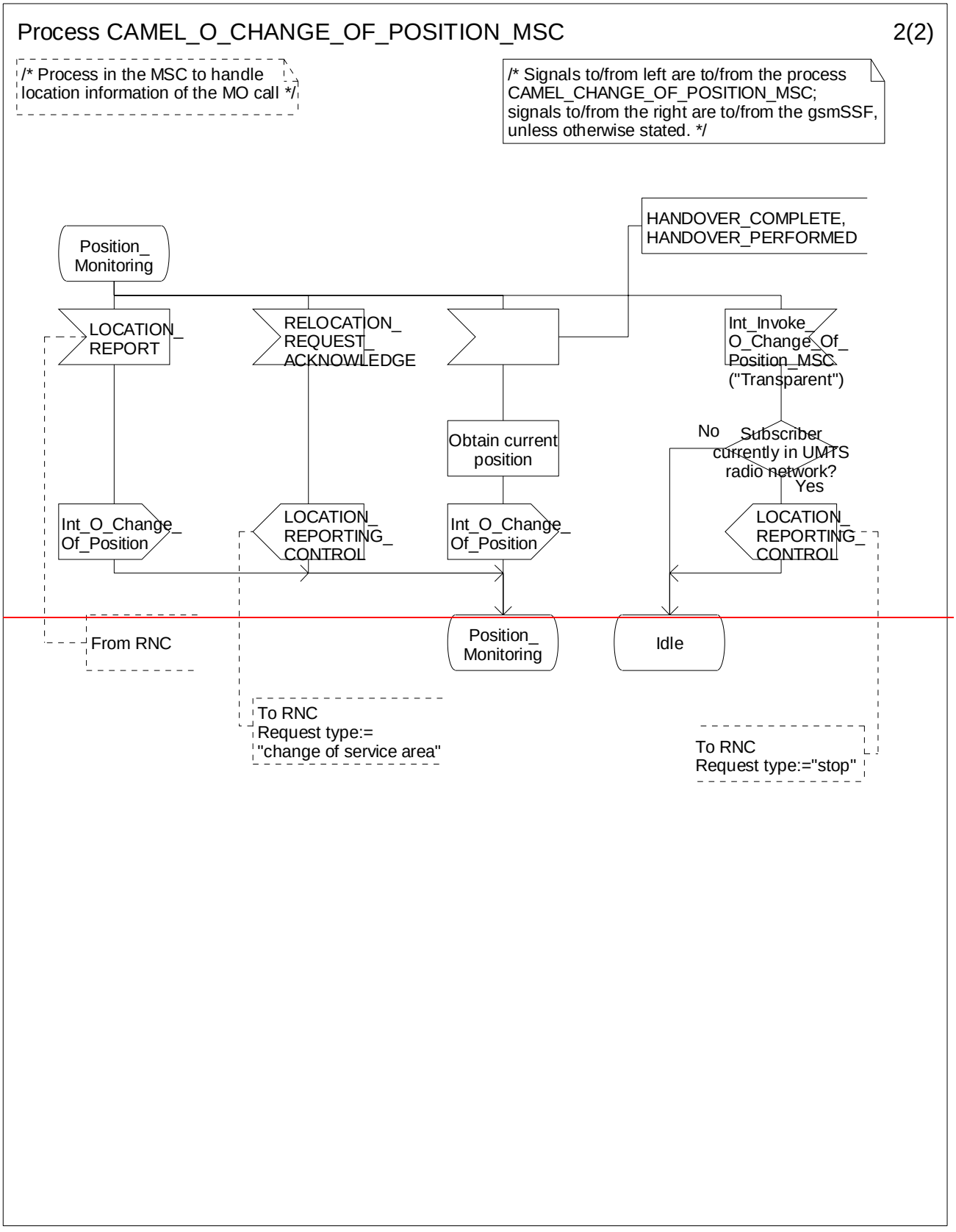


Figure 4.35-1: Process CAMEL_O_CHANGE_OF_POSITION_MSC (sheet 1)


Process CAMEL_O_CHANGE_OF_POSITION_MSC
2(2)
/* Process in the MSC to handle location information of the MO call */
/* Signals to/from left are to/from the process CAMEL_CHANGE_OF_POSITION_MSC; signals to/from the right are to/from the gsmSSF, unless otherwise stated. */
Position_ Monitoring
HANDOVER_COMPLETE, HANDOVER_PERFORMED
LOCATION_ REPORT
RELOCATION_ REQUEST_ ACKNOWLEDGE
Int_Invoke_ O_Change_Of_ Position_MSC ("Transparent")
Obtain current position
No
Subscriber currently in UMTS radio network?
Yes
Int_O_Change_ Of_Position
LOCATION_ REPORTING_ CONTROL
Int_O_Change_ Of_Position
LOCATION_ REPORTING_ CONTROL
From RNC
Position_ Monitoring
Idle
To RNC Request type:= "change of service area"
To RNC Request type:="stop"

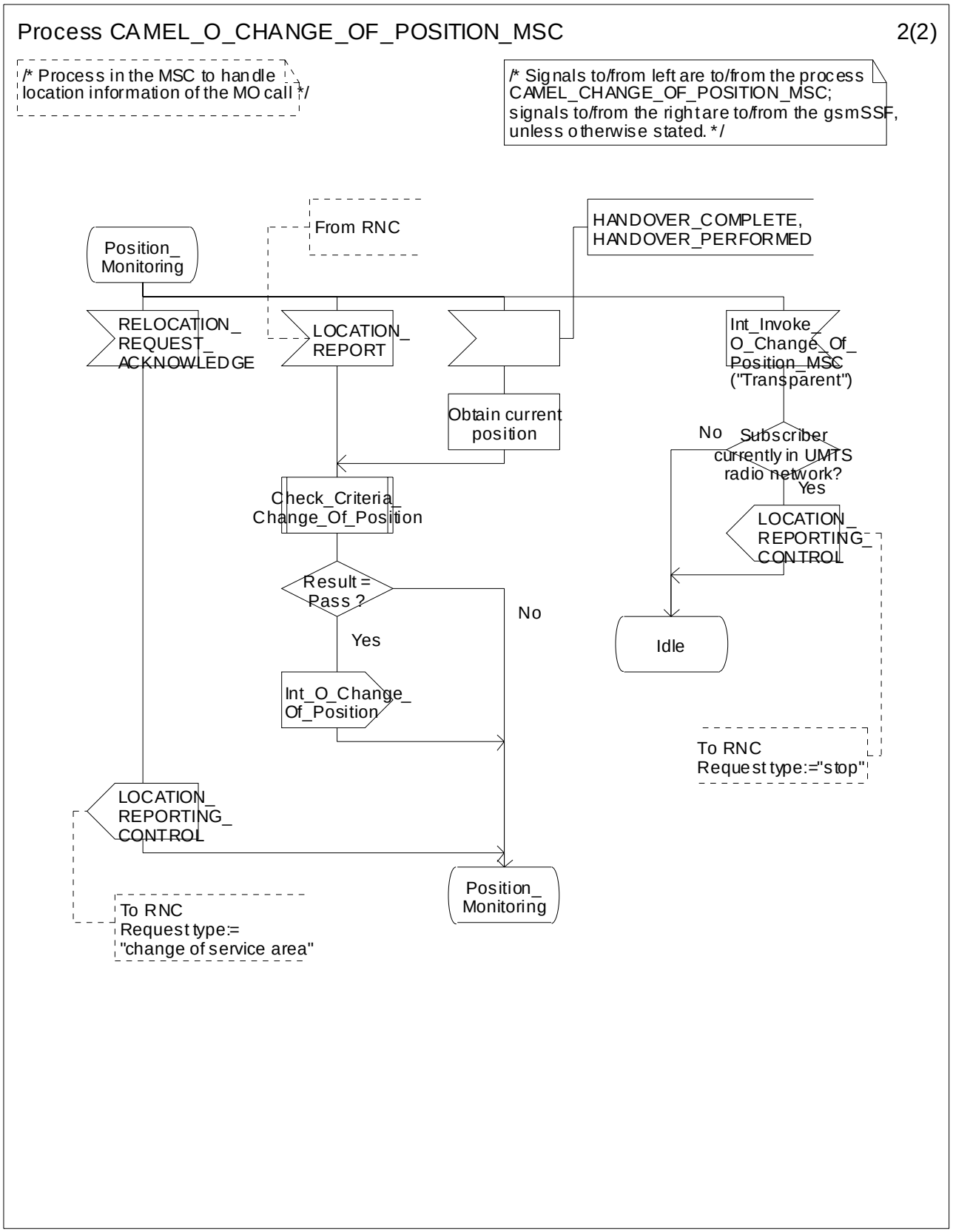


Figure 4.35-2: Process CAMEL_O_CHANGE_OF_POSITION_MSC (sheet 2)

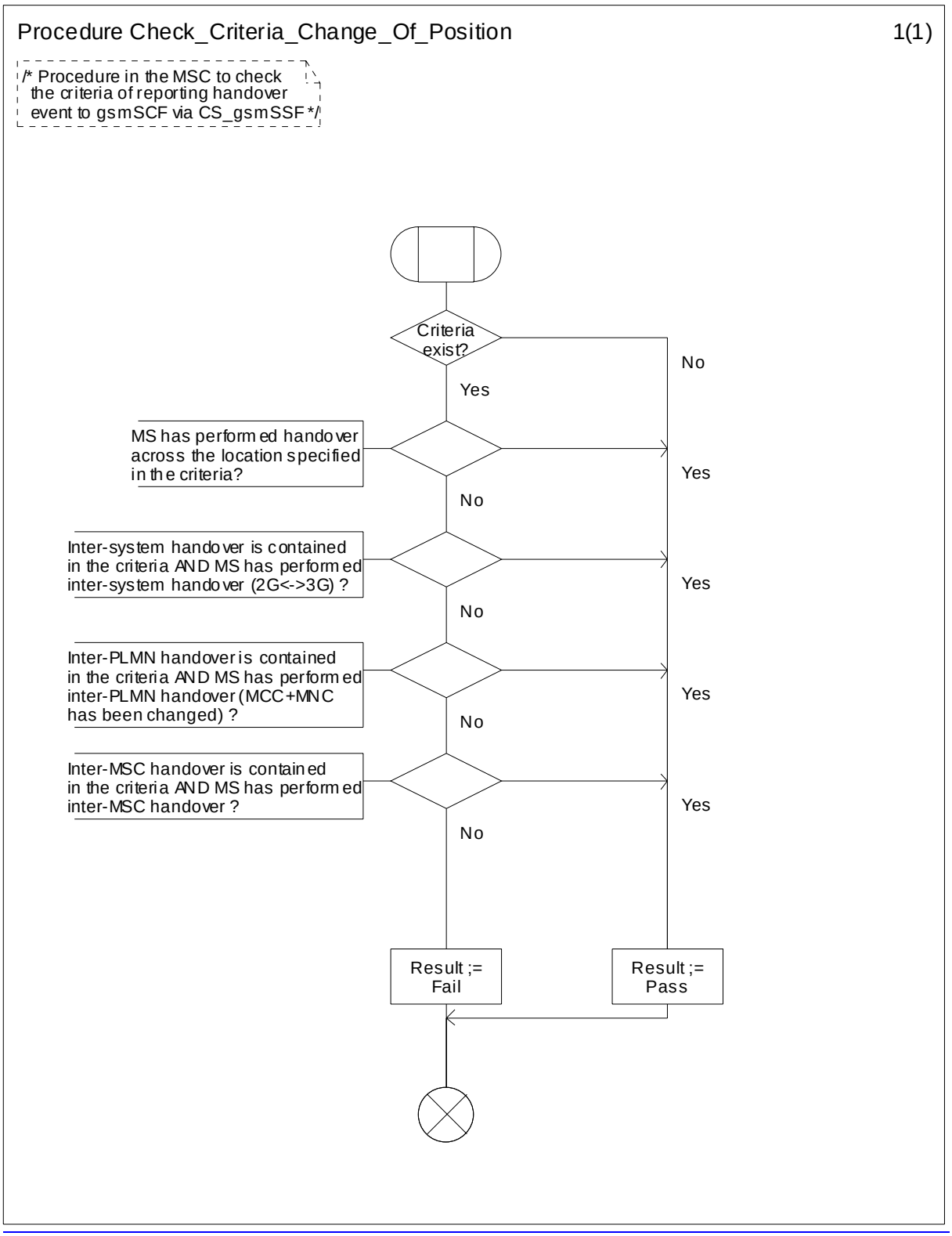


Figure 4.xx-1: Procedure Check_Criteria_Change_Of_Position (sheet 1)

*** Next modified part ***

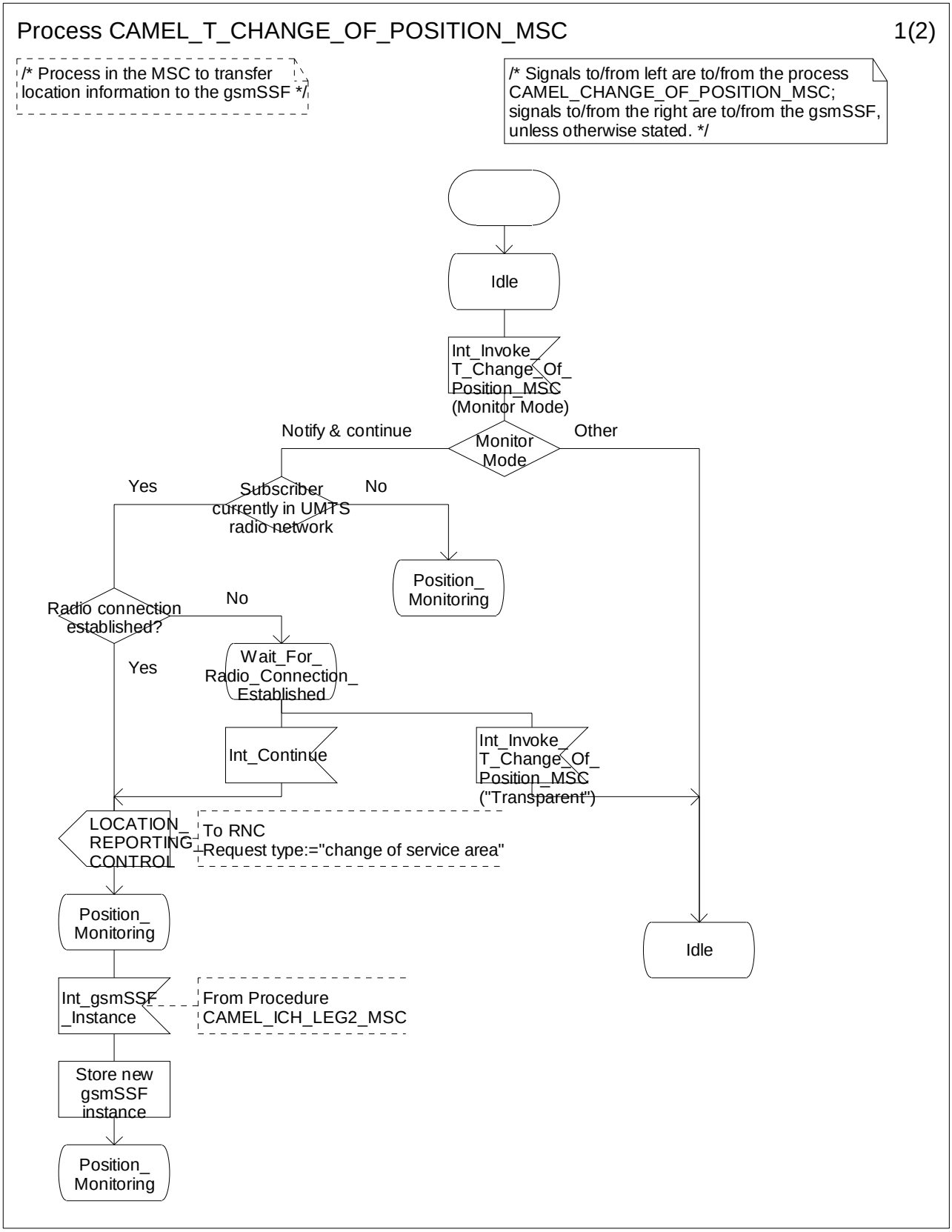
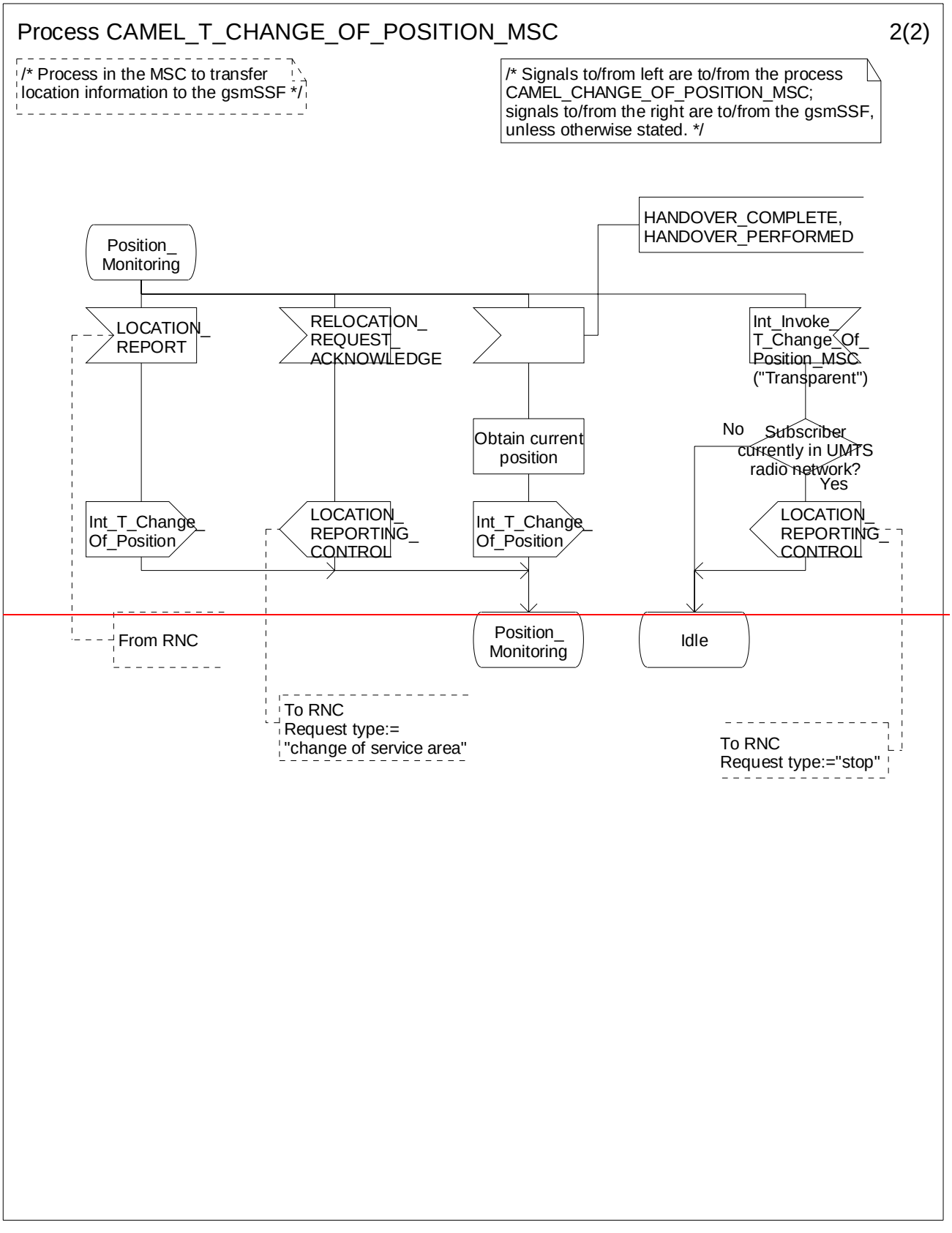


Figure 4.71-1: Process CAMEL_T_CHANGE_OF_POSITION_MSC (sheet 1)


Process CAMEL_T_CHANGE_OF_POSITION_MSC
2(2)
/* Process in the MSC to transfer location information to the gsmSSF */
/* Signals to/from left are to/from the process CAMEL_CHANGE_OF_POSITION_MSC; signals to/from the right are to/from the gsmSSF, unless otherwise stated. */
HANDOVER_COMPLETE, HANDOVER_PERFORMED
Position_ Monitoring
LOCATION_ REPORT
RELOCATION_ REQUEST_ ACKNOWLEDGE
Int_Invoke_ T_Change_Of_ Position_MSC ("Transparent")
Obtain current position
No
Subscriber currently in UMTS radio network?
Yes
Int_T_Change_ Of_Position
LOCATION_ REPORTING_ CONTROL
Int_T_Change_ Of_Position
LOCATION_ REPORTING_ CONTROL
From RNC
Position_ Monitoring
Idle
To RNC Request type:= "change of service area"
To RNC Request type:="stop"

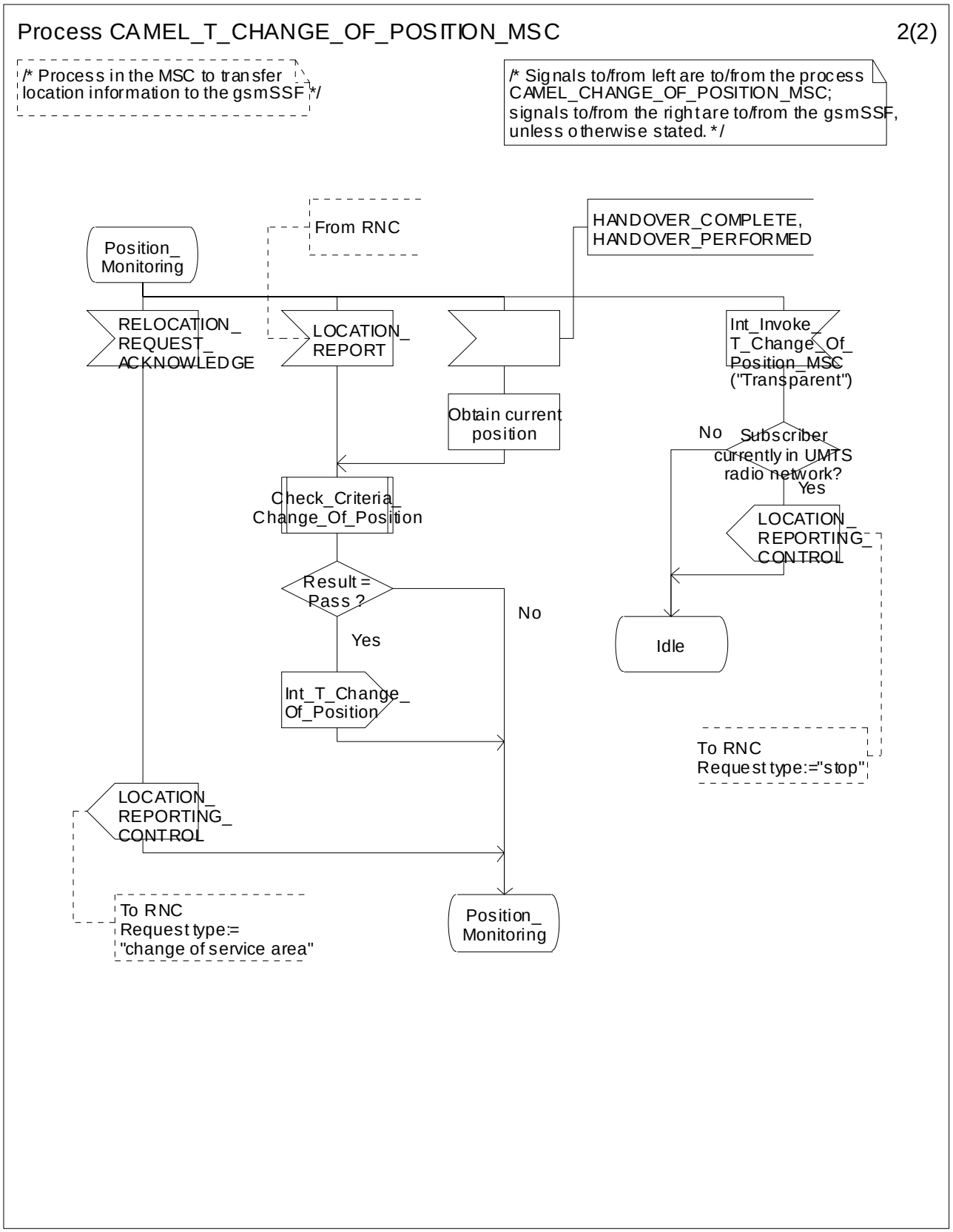


Figure 4.71-2: Procedure CAMEL_T_CHANGE_OF_POSITION_MSC (sheet 2)

*** Next modified part ***

4.6.2.19 Request Report BCSM Event

4.6.2.19.1 Description

This IF is used to request the gsmSSF to monitor for a call-related event, then send a notification back to the gsmSCF when the event is detected (see Event Report BCSM).

4.6.2.19.2 Information Elements

Information element name	MO	MF	MT	VT	NC	NP	Description
BCSM Event	M	M	M	M	M	M	This IE specifies the event or events for which a report is requested.

BCSM Event contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Event type	M	M	M	M	M	M	This IE specifies the type of event for which a report is requested.
Leg ID	C	C	C	C	C	M	This IE indicates the party in the call for which the event shall be armed or disarmed.
Monitor Mode	M	M	M	M	M	M	If this IE is "interrupted" then the event shall be reported as a request, if this IE is "notify and continue" then the event shall be reported as a notification, if this IE is "transparent" then the event shall not be reported.
DP Specific Criteria	O	O	O	O	O	O	This IE is described in a table below.
Automatic Rearm	O	-	-	O	-	-	This IE indicates that the detection point shall be automatically rearmed by the gsmSSF when it is encountered. This IE may be present only if the Event Type is O_Mid_Call, T_Mid_Call, O_Change_Of_Position or T_Change_Of_Position and the Monitor Mode is "notify and continue".

DP Specific Criteria contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Application Timer	O	O	O	O	O	O	This IE carries additional timer duration information (timer values for No_Answer event) required for arming the No_Answer EDPs in the gsmSSF. The TNRy timer (value defined between 10 seconds and 40 seconds) shall be shorter than the network no answer timer.
Mid Call Control Info	O	-	-	O	-	-	This IE is described in a table below. This IE carries the criterion for the detection and reporting of the mid-call event. If this IE is absent, then mid-call triggering shall take place when the first digit has been entered by the user.
Change of Position Control Info	O	-	-	O	-	-	This IE is described in a table below. It ~~This IE~~ carries the list of criteria~~on~~ for the reporting of the change of position event. If the DP Specific Criteria IE is absent, then the criteria ~~upon~~for any change of position shall be regarded as fulfilled.

Information element name	MO	MF	MT	VT	NC	NP	Description
NOTE If a Request Report BCSM Event information flow overwrites previous Request Report BCSM Event information flow which contained Application Timer IE for No_Answer DP, the behaviour of the gsmSSF is unpredictable.							

Mid Call Control Info contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Minimum Number Of Digits	M	-	-	M	-	-	This IE indicates the minimum number of digits to be collected. The value of this IE includes the length of the Start digit string, if present, and the length of the End of reply digit string, if present.
Maximum Number Of Digits	M	-	-	M	-	-	This IE indicates the maximum number of digits to be collected. The value of this IE includes the length of the Start digit string, if present, and the length of the End of reply digit string, if present. If triggering takes place due to the detection of the maximum number of digits and the End of reply digit string, if present, is partially detected, then the partially detected End of reply digit string shall be included in the digit string to be reported to the gsmSCF.
End of Reply Digit String	O	-	-	O	-	-	This IE, if present, indicates the digit string that denotes the end of the digits to be collected. If triggering takes place due to the detection of the End of reply digit string, then this string shall be included in the digit string to be reported to the gsmSCF. If the interdigit timeout expires when the Start Digit String, if present, is complete and the Minimum Number Of Digits has been detected and the End Digit String, if present, has been partially detected then triggering shall take place. The partially detected End Of Reply Digit String shall be included in the string to be reported to the gsmSCF.
Cancel Digit String	O	-	-	O	-	-	This IE, if present, indicates the digit string that indicates that the input shall be erased and that digit collection, including the start digit string, if present, shall start afresh.
Start Digit String	O	-	-	O	-	-	This IE, if present, indicates the digit string that denotes the start of the digits to be collected. If this IE is absent, then the first digit entered forms part of the digits to be collected. When triggering takes place, then the Start digit string shall be included in the digit string to be reported to the gsmSCF.
Inter Digit Timeout	M	-	-	M	-	-	This IE indicates the maximum duration allowed between receipt of successive digits from the MS

Change of Position Control Info contains a list of up to 10 instances of the following information element~~s~~:

Information element name	MO	MF	MT	VT	NC	NP	Description
Change Of Location	M	-	-	M	-	-	~~This IE is described in a table below. Change of Position Control Info IE contains up to 10 Change Of Location IEs, i.e. e~~Each ~~of the 10~~ Change Of Location IE is one of the ~~5~~6 possibilities ~~choices~~ indicated in the table ~~for the Change Of Location IE~~below. If multiple instances of the Change Of

Information element name	MO	MF	MT	VT	NC	NP	Description
							Location IE~~s~~ have the same value, this is not an error.

Each instance of the Change Of Location IE contains one of the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Cell Global ID	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ handover across the boundary of the cell specified in this IE, i.e. handover ~~roaming~~ into or out of the cell.
Service Area ID	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ handover across the boundary of the service area specified in this IE, i.e. handover ~~roaming~~ into or out of the service area.
Location Area ID	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ handover across the boundary of the location area specified in this IE, i.e. handover ~~roaming~~ into or out of the location area.
Inter-System Handover	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ inter-system handover.
Inter-PLMN Handover	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ inter-PLMN handover.
Inter-MSC Handover	O,E	-	-	O,E	-	-	This IE indicates that the criteria are ~~to be~~ fulfilled if the mobile station performs ~~the~~ inter-MSC handover.