3GPP TSG CN Plenary Meeting #14 **Tdoc NP-010583**
Japan, Kyoto, 12th – 14th December 2001

Source: TSG CN WG2

Title: CR on R99 Work Item CAMEL3, Pack 4

Agenda item: 7.2

Document for: APPROVAL

Introduction:

This document contains 10 CRs on R99 WI CAMEL3 (5 CRs for R99 and the 5 mirror CRs for Rel-4). These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #14 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.078	322	1	N2-010810	R99	Handling of Reconnect on the MSC-VLR Interface	F	3.10.0
23.078	323	1	N2-010843	Rel-4	Handling of Reconnect on the MSC-VLR Interface	A	4.2.0
23.078	324	1	N2-010804	R99	Indication of deletion of CSI in Notify Subscriber Data Change	F	3.10.0
23.078	325	1	N2-010815	Rel-4	Indication of deletion of CSI in Notify Subscriber Data Change	A	4.2.0
23.078	328	1	N2-010824	R99	Clarification of the CUG data used in IDP	F	3.10.0
23.078	329	1	N2-010853	Rel-4	Clarification of the CUG data used in IDP	A	4.2.0
23.078	331	1	N2-010827	R99	TDP3 triggering criterion in MO case	F	3.10.0
23.078	332	1	N2-010828	Rel-4	TDP3 triggering criterion in MO case	A	4.2.0
23.078	333	2	N2-010811	R99	Guidance to the SCI operation if the subscriber or the VPLMN do not support AoC service	F	3.10.0
23.078	341		N2-010812	Rel-4	Guidance to the SCI operation if the subscriber or the VPLMN do not support AoC service	A	4.2.0

3GPP TSG-CN WG2 Meeting #20
Brighton, UK, 15th - 19th October 2001

Tdoc N2-010804

CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **324** ⌘ rev **1** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	⌘	Indication of deletion of CSI in Notify Subscriber Data Change
Source:	⌘	Lucent Technologies
Work item code:	⌘	CAMEL Phase 3
Date:	⌘	15th October 2001
Category:	⌘	**F (essential Correction)**
Release:	⌘	R99

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

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

Reason for change:	⌘	The notify subscriber data change feature in CAMEL Phase 3 provides a facility for the HLR to notify the gsmSCF about changes in CSI, Call Forwarding, call baring data or ODB (provided that the notification flag is set). A notification is triggered when subscriber data changes. One process that triggers such a notification is subscriber data change by the administrator. A deletion of a CSI constitutes a change in subscriber data, but the current messages are unable to convey the fact that a CSI for a subscriber has been deleted. It is essential for the HLR to indicate the difference between when a CSI is deactivated and when it is deleted.
Summary of change:	⌘	The change outlined in this document adds a parameter to the Notify Subscriber Data Change information between the HLR and the gsmSCF. This parameter, the SpecificCSIDeleted indicate which CSI has been deleted for a subscriber.
Consequences if not approved:	⌘	An HLR would not be able to indicate to a gsmSCF that a particular CSI has been deleted.

Clauses affected:	⌘	10.3.2.3		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	29.002 (CR#317)
Other comments:	⌘			

10.3.2.3 Notify Subscriber Data Change

10.3.2.3.1 Description

This IF is used by the HLR to notify to the gsmSCF of the change of subscriber data.

10.3.2.3.2 Information Elements

The following information elements are required:

Information element name	Required	Description
IMSI	M	The IMSI is used to identify the subscriber.
MSISDN	M	The MSISDN is used to identify the subscriber.
Call Forwarding SS data	C	This IE is described in a table below.
Call Barring SS data	C	This IE is described in a table below.
Operator Determined Barring data	C	This IE is described in a table below.
CAMEL Subscription Information	C	This IE is described in a table below.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available)

Call Forwarding SS data contains the following information:

Information element name	Required	Description
SS Code	C	This IE indicates Call Forwarding supplementary service as defined in 3GPP TS 22.004 [25].
Forwarding Feature List	C	See the table below.
Notification-to-CSE Flag	C	This IE indicates whether the gsmSCF is notified of a change of Call Forwarding SS data.

C Conditional (The IE shall be sent, if available)

Forwarding Feature List contains 1 to 32 items of the following information:

Information element name	Required	Description
Basic Service	C	See 3GPP TS 22.002 [24]. Also compound basic service codes can be used in this operation if the subscriber has used a compound code when modifying the SS (e.g. all bearer services compound code).
SS Status	C	See 3GPP TS 23.011 [26].
Forwarded-to Number	C	See 3GPP TS 23.082 [27].
Forwarded-to Subaddress	C	See 3GPP TS 23.082 [27].
Subscription Options	C	See 3GPP TS 23.082 [27].
No Reply Condition Time	C	See 3GPP TS 23.082 [27].

C Conditional (The IE shall be sent, if available and applicable)

Call Barring SS data contains the following information:

Information element name	Required	Description
SS Code	C	This IE indicates Call Barring supplementary service as defined in 3GPP TS 22.004 [25].
Call Barring Feature List	C	See the table below.
Password	C	See 3GPP TS 23.011 [26].
Wrong password attempts counter	C	See 3GPP TS 23.011 [26].
Notification-to-CSE flag	C	This IE indicates whether the gsmSCF is notified of a change of Call Barring SS data.

C Conditional (The IE shall be sent, if available)

Call Barring Feature List contains 1 to 32 items of the following information:

Information element name	Required	Description
Basic Service	C	See 3GPP TS 22.002 [24]. Also compound basic service codes can be used in this operation if the subscriber has used a compound code when modifying the SS (e.g. all bearer services compound code).
SS Status	C	See 3GPP TS 23.011 [26].

C Conditional (The IE shall be sent, if available and applicable)

Operator determined barring data contains the following information:

Information element name	Required	Description
ODB General Data	C	This IE indicates the set of subscribers features that the network operator or the service provider can regulate.
ODB HPLMN Specific Data	C	This IE indicates the set of subscribers features that the network operator or the service provider can regulate only when the subscriber is registered in the HPLMN.
Notification-to-CSE flag	C	This IE indicates whether the gsmSCF is notified of a change of ODB data.

C Conditional (The IE shall be sent, if available and applicable)

CAMEL Subscription Information contains the following information:

Information element name	Required	Description
O-CSI	C	See subclause 4.3.1.
D-CSI	C	See subclause 4.3.2.
T-CSI	C	See subclause 4.3.4.
VT-CSI	C	See subclause 4.3.5.
TIF-CSI	C	See subclause 4.3.6.2.
GPRS-CSI	C	See subclause 6.3.1.
SMS-CSI	C	See subclause 7.3.1.
SS-CSI	C	See subclause 8.2.1.
M-CSI	C	See subclause 9.2.1
Specific CSI Deleted List	C1	This IE indicates that one or more specific elements of CAMEL Subscription Information have been deleted from the HLR. It shall indicate any of the following : - O-CSI (with TDP criteria for O-CSI); - T-CSI (with TDP criteria for T-CSI); - TIF-CSI; - D-CSI; - VT-CSI with TDP criteria for VT-CSI; - GPRS-CSI; - SMS-CSI; - SS-CSI; - M-CSI.

C Conditional (The IE shall be sent, if it was modified)

C1 Conditional (The IE shall be sent, if CSI is/are deleted).

3GPP TSG-CN2 #20
Brighton, England
15th – 19th October 2001

Tdoc N2-010810
(Revision of N2-010702)

CR-Form-v4

CHANGE REQUEST

23.078	**CR**	**322**	rev	**1**	Current version:	3.10.0

Proposed change affects: (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	Handling of Reconnect on the MSC-VLR Interface		
Source:	Vodafone Group Plc		
Work item code:	CAMEL3	***Date:***	17th October 2001
Category:	**F** (agreed by consensus)	***Release:***	R99

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

Use one of the following releases:

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

Reason for change:	• When the gsmSCF indicates that an MO call should be reconnected, the MSC sends a Send Info For Reconnected Call to the VLR. The VLR can respond with a Send Info For Reconnected Call ack or a Send Info For Reconnected Call negative response. • When the gsmSCF indicates that a VT call should be reconnected, the MSC sends a Send Info For MT Reconnected Call to the VLR. The VLR can respond with a Send Info For MT Reconnected Call ack or a Send Info For MT Reconnected Call negative response. Of these six messages between the MSC and VLR, only one (Send Info For Reconnected Call) is described in the information flows in 3GPP TS 23.078. This leads to confusion for implementors as it is not clear if Send Info For MT Reconnected Call is the same as Send Info For Reconnected Call, and the contents of the VLR responses are not defined.
Summary of change:	Inclusion of the following information flows: • Send Info For MT Reconnected Call • Send Info For Reconnected Call ack • Send Info For Reconnected Call negative response • Send Info For MT Reconnected Call ack • Send Info For MT Reconnected Call negative response Plus a clarification that the Send Info For Reconnected Call IF is applicable to reconnected MO calls.
Consequences if not approved:	The IFs exist in the SDLs in 3GPP TS 23.018 and 3GPP TS 23.078 but the contents are not described anywhere leading to confusion and possible mis-operation.

Clauses affected:	4.6.12.3, 4.6.12.a (new), 4.6.13.a (new), 4.6.13.b (new), 4.6.13.c (new) and 4.6.13.d (new)

Other specs affected:	[X]	Other core specifications	CR 23.078-323 (REL-4)
	[ ]	Test specifications	
	[ ]	O&M Specifications	
Other comments:			

****** Section Heading ******

4.6.12 MSC to VLR information flows

****** First Modified Section ******

4.6.12.3 Send Info For Reconnected Call

4.6.12.3.1 Description

This IF is used to request the VLR to provide information to handle a reconnected MO call.

4.6.12.3.2 Information Elements

Send Info For Reconnected Call contains the following IEs.

Information element name	Required	Description
Called number	M	E.164 number of the call destination.
Bearer service	C	Bearer service required for the MO call, derived from the GSM bearer capability information received in the setup request from the MS. One of bearer service or teleservice shall be present.
Teleservice	C	Teleservice required for the MO call, derived from the GSM bearer capability information received in the setup request from the MS or from the emergency setup request from the MS. One of bearer service or teleservice shall be present.
CUG index	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress preferential CUG	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress CUG outgoing access	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress O-CSI	C	This IE indicates that O-CSI shall be suppressed. Shall always be sent in the second interrogation.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent if applicable).		

****** New Section ******

4.6.12.a Send Info For MT Reconnected Call

4.6.12.a.1 Description

This IF is used to request the VLR to provide information to handle a reconnected MT call.

4.6.12.a.2 Information Elements

Send Info For MT Reconnected Call contains the following IE:

Information element name	Required	Description
Called number	M	E.164 number of the call destination.
M Mandatory (The IE shall always be sent).		

****** Section Heading ******

4.6.13 VLR to MSC information flows

****** New Section ******

4.6.13.a Send Info For Reconnected Call ack

4.6.13.a.1 Description

This IF is used to instruct the MSC to continue the connection of a reconnected MO call.

4.6.13.a.2 Information Elements

Send Info For Reconnected Call ack does not contain any IEs.

****** New Section ******

4.6.13.b Send Info For Reconnected Call negative response

4.6.13.b.1 Description

This IF is used to indicate that the reconnected MO call for which the MSC requested subscription information shall not be connected.

4.6.13.b.2 Information Elements

The negative response information element can take the following value:

- Call barred (Operator determined barring);
- Call barred (Supplementary service barring)

****** New Section ******

4.6.13.c Send Info For MT Reconnected Call ack

4.6.13.c.1 Description

This IF is used to instruct the MSC to continue the connection of a reconnected MT call.

4.6.13.c.2 Information Elements

Send Info For MT Reconnected Call ack contains the following IEs:

Information element name	Required	Description
O-CSI	C	This IE indicates that originating CAMEL service handling applies for the reconnected call. Shall be present if originating CAMEL service handling applies; otherwise shall be absent.
D-CSI	C	This IE indicates that originating CAMEL dialled service handling applies for the reconnected call. Shall be present if originating CAMEL dialled service handling applies; otherwise shall be absent.
C Conditional (The IE shall be sent if applicable).		

****** New Section ******

4.6.13.d Send Info For MT Reconnected Call negative response

4.6.13.d.1 Description

This IF is used to indicate that the reconnected MT call for which the MSC requested subscription information shall not be connected.

4.6.13.d.2 Information Elements

The negative response information element can take the following value:

- CUG reject

****** End of Document ******

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CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **333** ⌘ ev **2** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title: ⌘	Guidance to the SCI operation if the subscriber or the VPLMN do not support AoC service.	
Source: ⌘	Siemens AG	
Work item code: ⌘	CAMEL3	***Date:*** ⌘ 16 October 2001
Category: ⌘	**F (essential correction)**	***Release:*** ⌘ R99

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

Use one of the following releases:

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

Reason for change: ⌘	The description for the Send Charging Information does not provide the description for the further processing if the subscriber is not provisioned with the AoC service or the network does not support this service. The situation could lead various implementation understandings, e.g. processing is silently discarded, continue processing until e-parameter is sent to the MS, or send indication to the gsmSCF. This variation due to the absence of the clear guidance could cause critical misinterpretation in the multi-vendor environment.
Summary of change: ⌘	The description, not to send the e-parameters to the MS and not to send error message to the gsmSCF, is provided.
Consequences if not approved: ⌘	Risk for unexpected interoperability problem.

Clauses affected: ⌘	4		
Other specs affected: ⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments: ⌘			

4.6.2.16 Send Charging Information

4.6.2.16.1 Description

This IF is used to send e-parameters from the gsmSCF to the gsmSSF. If charge advice information is received from the gsmSCF, it shall replace the charge advice information which would be generated by the MSC and inhibit any further generation of CAI by the MSC. Further processing of the charge advice information by the MSC shall be in accordance with the GSM Advice of Charge Supplementary Service. If the subscriber is not provisioned with the GSM Advice of Charge supplementary service or if the VPLMN does not support this service, then no e-parameters shall be sent to the MS and no error due to this fact shall be sent back to the gsmSCF.

The IF is only used in the MO case or in the VT case.

NOTE: If charge advice information is received from the gsmSCF after charge information has been generated by the MSC and sent to the MS, the behaviour of the service may be unpredictable or incorrect; the service designer should therefore ensure that the first set of charge advice information is sent to the gsmSSF before charge information is sent to the to the MS.

4.6.2.16.2 Information Elements

The following information elements are only used for the MO case and for the VT case:

Information element name	MO	MF	MT	VT	Description
SCI Billing Charging Characteristics	M	-	-	M	This IE defines the Advice Of Charge related information to be provided to the Mobile Station
Leg ID	M	-	-	M	This IE indicates where the charging information shall be sent.

M Mandatory (The IE shall always be sent).

SCI Billing Charging Characteristics is defined as:

Information element name	MO	MF	MT	VT	Description
AOC After Answer	C	-	-	C	This IE is sent after an Answer from event has been detected from the called party, the current connected SRF or the temporary connection.
AOC Before Answer	C	-	-	C	This IE is sent before an Answer event has been detected from the called party, the current connected SRF or the temporary connection.

C Conditional (only one of these IEs may be sent).

AOC Before Answer is defined as:

Information element name	MO	MF	MT	VT	Description
AOC Initial	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
AOC Subsequent	O	-	-	O	See definition in the next table.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

AOCSubsequent is defined as:

Information element name	MO	MF	MT	VT	Description
CAI Elements	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
Tariff Switch Interval	O	-	-	O	This IE indicates the tariff switch time until the next tariff switch applies.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

AOCAfterAnswer is defined as:

Information element name	MO	MF	MT	VT	Description
CAI Elements	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
Tariff Switch Interval	O	-	-	O	This IE indicates the tariff switch time until the next tariff switch applies.

M Mandatory (The IE shall always be sent).

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Brighton, UK, 15th - 19th October 2001

Tdoc N2-010812

CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **341** ⌘ ev **-** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title: ⌘	Guidance to the SCI operation if the subscriber or the VPLMN do not support AoC service.	
Source: ⌘	Siemens AG	
Work item code: ⌘	CAMEL3	***Date:*** ⌘ 16 October 2001
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)*

Reason for change: ⌘	The description for the Send Charging Information does not provide the description for the further processing if the subscriber is not provisioned with the AoC service or the network does not support this service. The situation could lead various implementation understandings, e.g. processing is silently discarded, continue processing until e-parameter is sent to the MS, or send indication to the gsmSCF. This variation due to the absence of the clear guidance could cause critical misinterpretation in the multi-vendor environment.
Summary of change: ⌘	The description, not to send the e-parameters to the MS and not to send error message to the gsmSCF, is provided.
Consequences if not approved: ⌘	Risk for unexpected interoperability problem.

Clauses affected: ⌘	4	
Other specs affected: ⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘
Other comments: ⌘		

4.6.2.16 Send Charging Information

4.6.2.16.1 Description

This IF is used to send e-parameters from the gsmSCF to the gsmSSF. If charge advice information is received from the gsmSCF, it shall replace the charge advice information which would be generated by the MSC and inhibit any further generation of CAI by the MSC. Further processing of the charge advice information by the MSC shall be in accordance with the GSM Advice of Charge Supplementary Service. If the subscriber is not provisioned with the GSM Advice of Charge supplementary service or if the VPLMN does not support this service, then no e-parameters shall be sent to the MS and no error due to this fact shall be sent back to the gsmSCF.

The IF is only used in the MO case or in the VT case.

NOTE: If charge advice information is received from the gsmSCF after charge information has been generated by the MSC and sent to the MS, the behaviour of the service may be unpredictable or incorrect; the service designer should therefore ensure that the first set of charge advice information is sent to the gsmSSF before charge information is sent to the to the MS.

4.6.2.16.2 Information Elements

The following information elements are only used for the MO case and for the VT case:

Information element name	MO	MF	MT	VT	Description
SCI Billing Charging Characteristics	M	-	-	M	This IE defines the Advice Of Charge related information to be provided to the Mobile Station
Leg ID	M	-	-	M	This IE indicates where the charging information shall be sent.

M Mandatory (The IE shall always be sent).

SCI Billing Charging Characteristics is defined as:

Information element name	MO	MF	MT	VT	Description
AOC After Answer	C	-	-	C	This IE is sent after an Answer from event has been detected from the called party, the current connected SRF or the temporary connection.
AOC Before Answer	C	-	-	C	This IE is sent before an Answer event has been detected from the called party, the current connected SRF or the temporary connection.

C Conditional (only one of these IEs may be sent).

AOC Before Answer is defined as:

Information element name	MO	MF	MT	VT	Description
AOC Initial	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
AOC Subsequent	O	-	-	O	See definition in the next table.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

AOCSubsequent is defined as:

Information element name	MO	MF	MT	VT	Description
CAI Elements	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
Tariff Switch Interval	O	-	-	O	This IE indicates the tariff switch time until the next tariff switch applies.

M Mandatory (The IE shall always be sent).

O Optional (Service logic dependent).

AOCAfterAnswer is defined as:

Information element name	MO	MF	MT	VT	Description
CAI Elements	M	-	-	M	This IE contains CAI elements as defined in 3GPP TS 22.024 [31].
Tariff Switch Interval	O	-	-	O	This IE indicates the tariff switch time until the next tariff switch applies.

M Mandatory (The IE shall always be sent).

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CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **325** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Indication of deletion of CSI in Notify Subscriber Data Change
Source:	⌘	Lucent Technologies
Work item code:	⌘	CAMEL Phase 3
Date:	⌘	15th October 2001
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)*

Reason for change:	⌘	The notify subscriber data change feature in CAMEL Phase 3 provides a facility for the HLR to notify the gsmSCF about changes in CSI, Call Forwarding, call baring data or ODB (provided that the notification flag is set). A notification is triggered when subscriber data changes. One process that triggers such a notification is subscriber data change by the administrator. A deletion of a CSI constitutes a change in subscriber data, but the current messages are unable to convey the fact that a CSI for a subscriber has been deleted. It is essential for the HLR to indicate the difference between when a CSI is deactivated and when it is deleted.
Summary of change:	⌘	The change outlined in this document adds a parameter to the Notify Subscriber Data Change information between the HLR and the gsmSCF. This parameter, the SpecificCSIDeleted indicate which CSI has been deleted for a subscriber.
Consequences if not approved:	⌘	An HLR would not be able to indicate to a gsmSCF that a particular CSI has been deleted.

Clauses affected:	⌘	10.3.2.3		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	29.002 CR 318-r1
Other comments:	⌘			

10.3.2.3 Notify Subscriber Data Change

10.3.2.3.1 Description

This IF is used by the HLR to notify to the gsmSCF of the change of subscriber data.

10.3.2.3.2 Information Elements

The following information elements are required:

Information element name	Required	Description
IMSI	M	The IMSI is used to identify the subscriber.
MSISDN	M	The MSISDN is used to identify the subscriber.
Call Forwarding SS data	C	This IE is described in a table below.
Call Barring SS data	C	This IE is described in a table below.
Operator Determined Barring data	C	This IE is described in a table below.
CAMEL Subscription Information	C	This IE is described in a table below.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available).		

Call Forwarding SS data contains the following information:

Information element name	Required	Description
SS Code	C	This IE indicates Call Forwarding supplementary service as defined in 3GPP TS 22.004 [25].
Forwarding Feature List	C	See the table below.
Notification-to-CSE Flag	C	This IE indicates whether the gsmSCF is notified of a change of Call Forwarding SS data.
C Conditional (The IE shall be sent, if available).		

Forwarding Feature List contains 1 to 32 items of the following information:

Information element name	Required	Description
Basic Service	C	See 3GPP TS 22.002 [24]. Also compound basic service codes can be used in this operation if the subscriber has used a compound code when modifying the SS (e.g. all bearer services compound code).
SS Status	C	See 3GPP TS 23.011 [26].
Forwarded-to Number	C	See 3GPP TS 23.082 [27].
Forwarded-to Subaddress	C	See 3GPP TS 23.082 [27].
Subscription Options	C	See 3GPP TS 23.082 [27].
No Reply Condition Time	C	See 3GPP TS 23.082 [27].
C Conditional (The IE shall be sent, if available and applicable).		

Call Barring SS data contains the following information:

Information element name	Required	Description
SS Code	C	This IE indicates Call Barring supplementary service as defined in 3GPP TS 22.004 [25].
Call Barring Feature List	C	See the table below.
Password	C	See 3GPP TS 23.011 [26].
Wrong password attempts counter	C	See 3GPP TS 23.011 [26].
Notification-to-CSE flag	C	This IE indicates whether the gsmSCF is notified of a change of Call Barring SS data.
C Conditional (The IE shall be sent, if available).		

Call Barring Feature List contains 1 to 32 items of the following information:

Information element name	Required	Description
Basic Service	C	See 3GPP TS 22.002 [24]. Also compound basic service codes can be used in this operation if the subscriber has used a compound code when modifying the SS (e.g. all bearer services compound code).
SS Status	C	See 3GPP TS 23.011 [26].
C Conditional (The IE shall be sent, if available and applicable).		

Operator determined barring data contains the following information:

Information element name	Required	Description
ODB General Data	C	This IE indicates the set of subscribers features that the network operator or the service provider can regulate.
ODB HPLMN Specific Data	C	This IE indicates the set of subscribers features that the network operator or the service provider can regulate only when the subscriber is registered in the HPLMN.
Notification-to-CSE flag	C	This IE indicates whether the gsmSCF is notified of a change of ODB data.
C Conditional (The IE shall be sent, if available and applicable).		

CAMEL Subscription Information contains the following information:

Information element name	Required	Description
O-CSI	C	See clause 4.3.1.
D-CSI	C	See clause 4.3.2.
T-CSI	C	See clause 4.3.4.
VT-CSI	C	See clause 4.3.5.
TIF-CSI	C	See clause 4.3.6.2.
GPRS-CSI	C	See clause 6.3.1.
SMS-CSI	C	See clause 7.3.1.
SS-CSI	C	See clause 8.2.1.
M-CSI	C	See clause 9.2.1
Specific CSI Deleted List	C1	This IE indicates that one or more specific elements of CAMEL Subscription Information have been deleted from the HLR. It shall indicate any of the following : - O-CSI (with TDP criteria for O-CSI); - T-CSI (with TDP criteria for T-CSI); - TIF-CSI; - D-CSI; - VT-CSI with TDP criteria for VT-CSI; - GPRS-CSI; - SMS-CSI; - SS-CSI; - M-CSI.
C Conditional (The IE shall be sent, if it was modified).		
C1 Conditional (The IE shall be sent, if CSI is/are deleted).		

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CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **CR328** ⌘ rev **1** ⌘ Current version: **3.A.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarifications of the CUG data used in IDP
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL phase 3
Date:	⌘	01-10-18
Category:	⌘	**F (essential correction)**
Release:	⌘	R99

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

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

Reason for change:	⌘	Alignements in 23.078 of the InitialDP description and the paragraf 4.7.4 Closed User Group
Summary of change:	⌘	1. In 23.078 (chapter IDP), the parameter "CUG interlock" is set to "the latest available data ". However in chapter 4.7.4 Closed User Group it is written that the informations sent are coming out from the IAM for MT/VT call. 2. The parameter ""outgoingAccessIndicator" doesn't precise that the latest available data are used in IDP. 3. CUG data is received from the HLR for MT call
Consequences if not approved:	⌘	Possible missunderstanding of the specification

Clauses affected:	⌘	4.6.1.5; 4.7.4		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

***** First modified section *****

4.6.1.5 Initial DP

4.6.1.5.1 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.

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	C	C	C	C	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	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter 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 a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the 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.
Called Party BCD Number	C	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for 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 operation, 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	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Party Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.
Call Reference Number	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 SCF to decide about the further handling of the call.

Information element name	MO	MF	MT	VT	Description
Event Type BCSM	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	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	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	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
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 incoming ISUP signalling.
MSC Address	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 CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	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.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialled by the calling subscriber. If no carrier was dialled, the 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 CF 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 the 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 the previous CAMEL processing.
Redirection Information	C	C	C	C	This IE contains forwarding related information, such as redirection counter. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.

Information element name	MO	MF	MT	VT	Description
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a table below.
CUG Index	C	-	-	-	See 3GPP TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	~~See 3GPP TS 23.085 [9] for details of this IE~~. This IE shall be set according to the 3GPP TS 23.085 [9] unless modified by the gsmSCF via Connect or ContinueWithArgument. ~~The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used.~~
Outgoing Access Indicator	C	C	C	C	~~See 3GPP TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.~~ This IE shall be set according to the 3GPP TS 23.085 [9] unless modified by the gsmSCF via Connect or ContinueWithArgument.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

- Not applicable.

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

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3GPP TS 23.018 [3].
Service area ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Cell ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Geographical information	C	-	C	C	See 3GPP TS 23.018 [3].
Geodetic information	C	-	C	C	See 3GPP TS 23.018 [3].
VLR number	M	-	C	M	See 3GPP TS 23.018 [3].
Age Of location information	M	-	C	C	See 3GPP TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2	-	C2	C2	See 3GPP TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	This IE indicates the LSA identity associated with the current position of the MS. 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 sent. See 3GPP TS 23.073 [23].

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available. Further conditions are in the description column.).

C1 Conditional (The IE shall be sent, if available and SoLSA is supported).

C2 Conditional (One and only one of the three conditional IEs shall be sent).

- Not applicable.

Carrier contains the following information:

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

M Mandatory (The IE shall always be sent).

Service Interaction Indicators Two contains the following information:

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

C Conditional (The IE shall be sent, if available).

- Not applicable.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	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	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.

C Conditional (The IE shall be sent, if available).

4.6.2 gsmSCF to gsmSSF information flows

4.6.2.1 Activity Test

4.6.2.1.1 Description

This IF is used to check for the continued existence of a relationship between the gsmSCF and gsmSSF. If the relationship is still in existence, then the gsmSSF will respond. If no reply is received, then the gsmSCF will assume that the gsmSSF has failed in some way and will take the appropriate action.

4.6.2.1.2 Information Elements

This IF contains no information elements.

***** Second modified section *****

4.7.4 Closed User Group

For a CUG subscriber with CAMEL services:

- The HLR shall store (and transfer to the VLR) the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from originating calls.

- The HLR shall store the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from receiving calls.

For an MO or MF call, the CUG information for that call shall be sent to the gsmSCF in the Initial DP.

If the gsmSCF returns a Continue message, the call shall continue with the original CUG information unchanged.

If the gsmSCF returns a Connect or Continue With Argument message, the CUG handling in table **Error! Reference source not found.**.1~~**Error! Reference source not found.**~~.1~~**Erreur! Source du renvoi introuvable.**~~.1 applies.

Table Error! Reference source not found.~~Error! Reference source not found.~~Erreur! Source du renvoi introuvable.~~.**111**~~**: CUG handling on receipt of Connect or Continue With Argument for an MO or MF call**

CUG parameters in message	Handling
Non-CUG call (note 1)	Remove CUG information for the call and continue as a non-CUG call
CUG information (note 2)	Call shall continue with modified CUG information
No CUG information	Call shall continue with original CUG information
NOTE 1: Received in Service Interaction Indicators Two IE. NOTE 2: CUG information consists of at least one of CUG Interlock Code and Outgoing Access Indicator.	

For an MT ~~or VT~~ call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the ~~incoming ISUP IAM~~Send Routeing Information ack and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an VT call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the incoming ISUP IAM and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an MT or VT call which is subject to CAMEL forwarding, the gsmSCF shall return a Connect message and the CUG handling in table **Error! Reference source not found.**.1~~**Error! Reference source not found.**~~.1~~**Erreur! Source du renvoi introuvable.**~~.1 applies.

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Brighton, UK, 15th - 19th October 2001

***Tdoc* N2-010827**

CR-Form-v4

CHANGE REQUEST

⌘ **23.078** **CR** **331** ⌘ rev **1** ⌘ Current version: **3.10.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	TDP3 triggering criterion in MO case
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	16.10.2001
Category:	⌘	**F** (Essential correction)
Release:	⌘	R99

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

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

Reason for change:	⌘	The contradiction between stage 1 and stage 2.
Summary of change:	⌘	The TDP3 MO case Destination number triggering criterion check can be based to the numbers received from access interface or the number received from the Mobile Originating CAMEL Service.
Consequences if not approved:	⌘	Different triggering criterion check implementations may exist.

Clauses affected:	⌘	4.2.1.2.2.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	Stage 1 (22.078)clause 5.2.1.2 says: "If any other CAMEL dialogue has changed the called number, then the modified called number shall be used for the conditional triggering check." Stage 2 (23.078) clause 4.2.1.2.2.1 says: " For MO calls, triggering at DP Analysed_Info shall be based on the called party number received over the access network."

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

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

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

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

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

4.2.1.2.2 Criteria at DP Analysed_Information

4.2.1.2.2.1 General

The criteria for a mobile originating call are checked in the originating MSC. The criteria for a mobile forwarded call are checked in the forwarding MSC.

For early forwarded calls in the GMSC, the HLR shall always include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the HLR can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

For optimally routed late forwarded calls, the MSC shall always include the trigger criteria in the RCH message sent to the GMSC. Reason is that the MSC can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

The following criteria are applicable for DP Analysed_Information:

- Destination number triggering criterion: The HLR may store a list of up to 10 destination numbers. There is no restriction on the nature of address. There is no restriction on the numbering plan indicator.

For MO calls, triggering at DP Analysed_Info shall be based on the called party number received over the access network or the Destination Routing Address in the Connect operation from the gsmSCF during a Mobile Originating CAMEL Service.

For MF calls at the VMSC, triggering at DP Analysed_Info shall be based on the number received over the access network (the Deflected-to-Number in case of Call Deflection), the Forwarded-to-Number retained in the VLR, or the Destination Routing Address in the Connect operation from the gsmSCF during a Mobile Terminated or Mobile Forwarded CAMEL Service.

For MF calls at the GMSC, triggering at DP Analysed_Info shall be based on the Forwarded-to-Number received from HLR, on the Destination Routing Address received in the Connect operation from gsmSCF during a Mobile Terminated or Mobile Forwarded CAMEL Service, or on the Forwarded-to-Number received in the RCH message.

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CHANGE REQUEST

⌘ **23.078** **CR** **332** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	TDP3 triggerin criterion in MO case
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	16.10.2001
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)
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R99 (Release 1999)
REL-4 (Release 4)
REL-5 (Release 5)

Reason for change:	⌘	The contradiction between stage 1 and stage 2.
Summary of change:	⌘	The TDP3 MO case Destination number triggering criterion check can be based to the numbers received from access interface or the number received from the Mobile Originating CAMEL Service.
Consequences if not approved:	⌘	Different triggering criterion check implementations may exist.

Clauses affected:	⌘	4.2.1.2.2.1
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	Stage 1 (22.078)clause 5.2.1.2 says: "If any other CAMEL dialogue has changed the called number, then the modified called number shall be used for the conditional triggering check." Stage 2 (23.078) clause 4.2.1.2.2.1 says: " For MO calls, triggering at DP Analysed_Info shall be based on the called party number received over the access network."

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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.

4.2.1.2.2 Criteria at DP Analysed_Information

4.2.1.2.2.1 General

The criteria for a mobile originating call are checked in the originating MSC. The criteria for a mobile forwarded call are checked in the forwarding MSC.

For early forwarded calls in the GMSC, the HLR shall always include the trigger criteria in the subscriber data sent to the GMSC. Reason is that the HLR can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

For optimally routed late forwarded calls, the MSC shall always include the trigger criteria in the RCH message sent to the GMSC. Reason is that the MSC can not check the criteria applicable at DP Analysed Info, since the number that the criteria check shall be based on, may be modified by a Mobile Terminating or Mobile Forwarding Service Logic for this call.

The following criteria are applicable for DP Analysed_Information:

- Destination number triggering criterion: The HLR may store a list of up to 10 destination numbers. There is no restriction on the nature of address. There is no restriction on the numbering plan indicator.

For MO calls, triggering at DP Analysed_Info shall be based on the called party number received over the access network or the Destination Routing Address in the Connect operation from the gsmSCF during a Mobile Originating CAMEL Service.

For MF calls at the VMSC, triggering at DP Analysed_Info shall be based on the number received over the access network (the Deflected-to-Number in case of Call Deflection), the Forwarded-to-Number retained in the VLR, or the Destination Routing Address in the Connect operation from the gsmSCF during a Mobile Terminated or Mobile Forwarded CAMEL Service.

For MF calls at the GMSC, triggering at DP Analysed_Info shall be based on the Forwarded-to-Number received from HLR, on the Destination Routing Address received in the Connect operation from gsmSCF during a Mobile Terminated or Mobile Forwarded CAMEL Service, or on the Forwarded-to-Number received in the RCH message.

3GPP TSG-CN2 #20
Brighton, England
15th – 19th October 2001

Tdoc N2-010843
(Revision of N2-010704)

CR-Form-v4

CHANGE REQUEST

23.078	**CR**	**323**	rev	**1**	Current version:	4.2.0

Proposed change affects: (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network ☒

Title:	Handling of Reconnect on the MSC-VLR Interface		
Source:	Vodafone Group Plc		
Work item code:	CAMEL3	***Date:***	17th October 2001
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)*

Reason for change:	• When the gsmSCF indicates that an MO call should be reconnected, the MSC sends a Send Info For Reconnected Call to the VLR. The VLR can respond with a Send Info For Reconnected Call ack or a Send Info For Reconnected Call negative response. • When the gsmSCF indicates that a VT call should be reconnected, the MSC sends a Send Info For MT Reconnected Call to the VLR. The VLR can respond with a Send Info For MT Reconnected Call ack or a Send Info For MT Reconnected Call negative response. Of these six messages between the MSC and VLR, only one (Send Info For Reconnected Call) is described in the information flows in 3GPP TS 23.078. This leads to confusion for implementors as it is not clear if Send Info For MT Reconnected Call is the same as Send Info For Reconnected Call, and the contents of the VLR responses are not defined.
Summary of change:	Inclusion of the following information flows: • Send Info For MT Reconnected Call • Send Info For Reconnected Call ack • Send Info For Reconnected Call negative response • Send Info For MT Reconnected Call ack • Send Info For MT Reconnected Call negative response Plus a clarification that the Send Info For Reconnected Call IF is applicable to reconnected MO calls.
Consequences if not approved:	The IFs exist in the SDLs in 3GPP TS 23.018 and 3GPP TS 23.078 but the contents are not described anywhere leading to confusion and possible mis-operation.

Clauses affected:	4.6.12.3, 4.6.12.a (new), 4.6.13.a (new), 4.6.13.b (new), 4.6.13.c (new) and 4.6.13.d (new)

Other specs affected:	X	Other core specifications	CR 23.078-322r1 (N2-010810 – R99)
		Test specifications	
		O&M Specifications	
Other comments:			

****** Section Heading ******

4.6.12 MSC to VLR information flows

****** First Modified Section ******

4.6.12.3 Send Info For Reconnected Call

4.6.12.3.1 Description

This IF is used to request the VLR to provide information to handle a reconnected MO call.

4.6.12.3.2 Information Elements

Send Info For Reconnected Call contains the following IEs.

Information element name	Required	Description
Called number	M	E.164 number of the call destination.
Bearer service	C	Bearer service required for the MO call, derived from the GSM bearer capability information received in the setup request from the MS. One of bearer service or teleservice shall be present.
Teleservice	C	Teleservice required for the MO call, derived from the GSM bearer capability information received in the setup request from the MS or from the emergency setup request from the MS. One of bearer service or teleservice shall be present.
CUG index	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress preferential CUG	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress CUG outgoing access	C	For the definition of this IE, see 3GPP TS 23.085 [9]. Shall be present if it was received in the setup request from the MS.
Suppress O-CSI	C	This IE indicates that O-CSI shall be suppressed. Shall always be sent in the second interrogation.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent if applicable).		

****** New Section ******

4.6.12.a Send Info For MT Reconnected Call

4.6.12.a.1 Description

This IF is used to request the VLR to provide information to handle a reconnected MT call.

4.6.12.a.2 Information Elements

Send Info For MT Reconnected Call contains the following IE:

Information element name	Required	Description
Called number	M	E.164 number of the call destination.
M Mandatory (The IE shall always be sent).		

****** Section Heading ******

4.6.13 VLR to MSC information flows

****** New Section ******

4.6.13.a Send Info For Reconnected Call ack

4.6.13.a.1 Description

This IF is used to instruct the MSC to continue the connection of a reconnected MO call.

4.6.13.a.2 Information Elements

Send Info For Reconnected Call ack does not contain any IEs.

****** New Section ******

4.6.13.b Send Info For Reconnected Call negative response

4.6.13.b.1 Description

This IF is used to indicate that the reconnected MO call for which the MSC requested subscription information shall not be connected.

4.6.13.b.2 Information Elements

The negative response information element can take the following value:

- Call barred (Operator determined barring);
- Call barred (Supplementary service barring)

****** New Section ******

4.6.13.c Send Info For MT Reconnected Call ack

4.6.13.c.1 Description

This IF is used to instruct the MSC to continue the connection of a reconnected MT call.

4.6.13.c.2 Information Elements

Send Info For MT Reconnected Call ack contains the following IEs:

Information element name	Required	Description
O-CSI	C	This IE indicates that originating CAMEL service handling applies for the reconnected call. Shall be present if originating CAMEL service handling applies; otherwise shall be absent.
D-CSI	C	This IE indicates that originating CAMEL dialled service handling applies for the reconnected call. Shall be present if originating CAMEL dialled service handling applies; otherwise shall be absent.
C Conditional (The IE shall be sent if applicable).		

****** New Section ******

4.6.13.d Send Info For MT Reconnected Call negative response

4.6.13.d.1 Description

This IF is used to indicate that the reconnected MT call for which the MSC requested subscription information shall not be connected.

4.6.13.d.2 Information Elements

The negative response information element can take the following value:

- CUG reject

****** End of Document ******

3GPP TSG-CN WG2 Meeting #20
Brighton, UK, 15th - 19th October 2001

Tdoc N2-010853
(revision of N2-010755)

CR-Form-v4

CHANGE REQUEST

⌘ **23.078 CR 329** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

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

Proposed change affects: ⌘ (U)SIM ☐ ME/UE ☐ Radio Access Network ☐ Core Network **X**

Title:	⌘	Clarifications of the CUG data used in IDP
Source:	⌘	Alcatel
Work item code:	⌘	CAMEL phase 3
Date:	⌘	01-10-18
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)

Reason for change:	⌘	Alignements in 23.078 of the InitialDP description and the paragraf 4.7.4 Closed User Group
Summary of change:	⌘	1. In 23.078 (chapter IDP), the parameter "CUG interlock" is set to "the latest available data ". However in chapter 4.7.4 Closed User Group it is written that the informations sent are coming out from the IAM for MT/VT call. 2. The parameter ""outgoingAccessIndicator" doesn't precise that the latest available data are used in IDP. 3. CUG data is received from the HLR for MT call
Consequences if not approved:	⌘	Possible missunderstanding of the specification

Clauses affected:	⌘	4.6.1.5; 4.7.4		
Other specs affected:	⌘	**X** Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

***** First modified section *****

4.6.1.5 Initial DP

4.6.1.5.1 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.

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	C	C	C	C	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	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter 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 a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the 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.
Called Party BCD Number	C	-	-	-	This IE contains the number used to identify the called party in the forward direction. It is used for 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 operation, 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	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Party Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.
Call Reference Number	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 SCF to decide about the further handling of the call.

Information element name	MO	MF	MT	VT	Description
Event Type BCSM	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	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	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	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
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 incoming ISUP signalling.
MSC Address	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 CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	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.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialled by the calling subscriber. If no carrier was dialled, the 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 CF 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 the 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 the previous CAMEL processing.
Redirection Information	C	C	C	C	This IE contains forwarding related information, such as redirection counter. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.

Information element name	MO	MF	MT	VT	Description
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a table below.
CUG Index	C	-	-	-	See 3GPP TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	~~See 3GPP TS 23.085 [9] for details of this IE~~. This IE shall be set according to the 3GPP TS 23.085 [9] unless modified by the gsmSCF via Connect or ContinueWithArgument. ~~The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used.~~
Outgoing Access Indicator	C	C	C	C	~~See 3GPP TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.~~ This IE shall be set according to the 3GPP TS 23.085 [9] unless modified by the gsmSCF via Connect or ContinueWithArgument.

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available).

- Not applicable.

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

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3GPP TS 23.018 [3].
Service area ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Cell ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Geographical information	C	-	C	C	See 3GPP TS 23.018 [3].
Geodetic information	C	-	C	C	See 3GPP TS 23.018 [3].
VLR number	M	-	C	M	See 3GPP TS 23.018 [3].
Age Of location information	M	-	C	C	See 3GPP TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2	-	C2	C2	See 3GPP TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	This IE indicates the LSA identity associated with the current position of the MS. 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 sent. See 3GPP TS 23.073 [23].

M Mandatory (The IE shall always be sent).

C Conditional (The IE shall be sent, if available. Further conditions are in the description column.).

C1 Conditional (The IE shall be sent, if available and SoLSA is supported).

C2 Conditional (One and only one of the three conditional IEs shall be sent).

- Not applicable.

Carrier contains the following information:

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

M Mandatory (The IE shall always be sent).

Service Interaction Indicators Two contains the following information:

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

C Conditional (The IE shall be sent, if available).

- Not applicable.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	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	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.

C Conditional (The IE shall be sent, if available).

4.6.2 gsmSCF to gsmSSF information flows

4.6.2.1 Activity Test

4.6.2.1.1 Description

This IF is used to check for the continued existence of a relationship between the gsmSCF and gsmSSF. If the relationship is still in existence, then the gsmSSF will respond. If no reply is received, then the gsmSCF will assume that the gsmSSF has failed in some way and will take the appropriate action.

4.6.2.1.2 Information Elements

This IF contains no information elements.

***** Second modified section *****

4.7.4 Closed User Group

For a CUG subscriber with CAMEL services:

- The HLR shall store (and transfer to the VLR) the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from originating calls.

- The HLR shall store the necessary subscriber data to ensure that the served subscriber is not unnecessarily prevented by CUG constraints from receiving calls.

For an MO or MF call, the CUG information for that call shall be sent to the gsmSCF in the Initial DP.

If the gsmSCF returns a Continue message, the call shall continue with the original CUG information unchanged.

If the gsmSCF returns a Connect or Continue With Argument message, the CUG handling in table **Error! Reference source not found.**.1 applies.

Table Error! Reference source not found..**1: CUG handling on receipt of Connect or Continue With Argument for an MO or MF call**

CUG parameters in message	Handling
Non-CUG call (note 1)	Remove CUG information for the call and continue as a non-CUG call
CUG information (note 2)	Call shall continue with modified CUG information
No CUG information	Call shall continue with original CUG information
NOTE 1: Received in Service Interaction Indicators Two IE. NOTE 2: CUG information consists of at least one of CUG Interlock Code and Outgoing Access Indicator.	

For an MT ~~or VT~~ call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the ~~incoming ISUP IAM~~Send Routeing Information ack and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an VT call which is to be routed to the terminating subscriber, the CUG information shall be extracted from the incoming ISUP IAM and sent to the gsmSCF in the Initial DP, but the gsmSCF shall not have the ability to change the CUG information for the call.

For an MT or VT call which is subject to CAMEL forwarding, the gsmSCF shall return a Connect message and the CUG handling in table **Error! Reference source not found.**.1 applies.