3GPP TSG-CN Meeting #22 **NP-030523**

10th - 12th December. Maui, Hawaii.

Source: **3GPP TSG CN2**

Title: **CR on Release 5 WI CAMEL4**

Agenda item: **8.3**

Document for: **APPROVAL**

This document contains 10 CR on Rel-5 WI CAMEL4. These documents were approved by CN2 and are forwarded to CN#22 for approval.

WG_tdoc	Title	Spec	CR	Rev	Cat	Rel	C_Ver
N2-030485	Correction to flexible warning tone burst interval duration	29.078	333		F	Rel-5	5.5.0
N2-030497	Handling AC Pending if ETC/ CTR fails	23.078	613	1	F	Rel-5	5.5.1
N2-030498	Remove contents table for MNP Requested Info parameter	23.078	629		F	Rel-5	5.5.1
N2-030547	SDL handling of DisconnectFromIPForbidden in Assisting SSF case	23.078	634	1	F	Rel-5	5.5.1
N2-030559	Inclusion of DP O_Term_Seized in CAMEL Phase 4 Partial Implementation	23.078	643		F	Rel-5	5.5.1
N2-030562	Handling of DisconnectFromIPForbidden in Assisting SSF case	29.078	342	1	F	Rel-5	5.5.0
N2-030563	Reporting Basic Service at DP Answer for SCUDIF calls	23.078	633	1	F	Rel-5	5.5.1
N2-030564	Reporting Basic Service at DP Answer for SCUDIF calls	29.078	336	1	F	Rel-5	5.5.0
N2-030577	CLIR/CLIP interaction with CSE initiated calls	23.078	568	2	F	Rel-5	5.5.1
N2-030583	More call related CAPv4 extensions for future releases	29.078	338	2	F	Rel-5	5.5.0

3GPP TSG CN WG2 Meeting #31 **N2-030485**
Bangkok, Thailand, 27th – 31st October 2003

CHANGE REQUEST

⌘ **29.078** **CR** **333** ⌘ **rev** **-** ⌘ Current version: **5.5.0** ⌘

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

Title:	⌘	Correction to flexible warning tone burst interval duration
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL4
Date:	⌘	13/2003/2003
Category:	⌘	F (essential correction)
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*

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: ⌘ TS 29.078 has incorrect definitions for the flexible warning tone. The following tone and duration ranges are currently specified in TS 29.078:

NumberOfBursts:	1..3
BurstInterval:	0.1s .. 2s
NumberOfTonesInBurst	1..3
ToneDuration	0.1s .. 2s
ToneInterval	0.1s .. 2s

However, 3GPP TS 22.078 V5.10.0, section 15.4, specifies that the time interval between successive bursts shall have a maximum of 120 seconds. Clearly, the ASN.1 definition of BurstInterval (in TS 29.078) is not aligned with the stage 1 service requirement.

Hence, TS 29.078 shall be corrected in this regard. The range for BurstInterval shall be changed to 1..1200. BurstInterval is measured in multiples of 100 milli second; a value of 1200 for burstInterval corresponds therefore with 120s.

The default value for burstInterval may remain 2.

Note TS 22.078 V5.11.0 has removed the explicit indications of the ranges of the parameters of the flexible warning tone. The ranges of these parameters are specified in TS 29.078.

Summary of change: ⌘ Correct the ASN.1 definition of Burst as outlined above.

Consequences if ⌘ Misalignment between stage 1 and stage 3; the stage 1 requirement can not be

not approved:	met, reducing the value of the flexible warning tone feature substantially.

Clauses affected:	⌘	5.1			
		Y	**N**		
Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

****** For Information – extract from 3GPP TS 22.078 V5.10.0 ******

15.4 CSE control of call duration

< … >

The CSE shall be able to instruct the IPLMN/VPLMN to begin playing of an audible tone to the served subscriber at anytime before the maximum call period time is expired.

The tone to be played shall consist of up to three audible bursts. A burst shall consist of a single tone, or a sequence of two tones, or a sequence of three tones. A normal speech path connecting all parties in the call shall be established between bursts. The CSE shall be able to instruct the IPLMN/VPLMN:

- The time before the maximum call period time expires when tone playing shall start;
- The number of bursts to be played (1, 2 or 3);
- **The time interval between bursts (maximum 120 seconds);**
- The number of tones in each burst (1, 2 or 3);
- The duration of the tone in a burst;
- The pause between the tone in a burst.

< … >

****** Next Modified Section ******

5 Common CAP Types

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)}
```

…

```
Burst ::= SEQUENCE {
    numberOfBursts                  [0] INTEGER (1..3)  DEFAULT 1,
    burstInterval                   [1] INTEGER (1..201200) DEFAULT 2,
    numberOfTonesInBurst            [2] INTEGER (1..3)  DEFAULT 3,
    toneDuration                    [3] INTEGER (1..20) DEFAULT 2,
    toneInterval                    [4] INTEGER (1..20) DEFAULT 2
    }
-- burstInterval, toneDurartion and toneInterval are measured in 100 millisecond units

BurstList ::= SEQUENCE {
    warningPeriod                   [0] INTEGER (1..1200) DEFAULT 30,
    bursts                          [1] Burst
    }
-- warningPeriod is measured in 1 second units.
```

…

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

3GPP TSG CN WG2 Meeting #31 ***N2-030497***
Bangkok, Thailand, 27th – 31th October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **613** ⌘ **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:	⌘	Handling AC Pending if ETC/ CTR fails
Source:	⌘	Nortel Networks
Work item code:	⌘	CAMEL4
Date:	⌘	13/10/2003
Category:	⌘	**F** (essential correction)
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	In CAMEL4 the SSF sets a AC pending flag on receipt of AC(srfid) and AC pending flags per legid on receipt of AC(legid) within the same call segment. If AC(srfid) is received and then ETC/ CTR fails, the pending AC is currently not cleared. If the call is continued it seems possible for an AC(legid) to be accepted for the outgoing leg, however a further AC(srfid) may be rejected with error 'TaskRefused'. (29.078 section 11.2.2.2 states: "This error shall be indicated when a previously received call period duration is pending for this srfConnection"). The use of Mid-Call procedures in CAMEL4, which enable charging activities and in-band user interaction to take place during a call, are an example of when the above error scenario may occur and therefore proper handling of AC pending on ETC/ CTR failure should be specified. This CR solves the identical problem for two party calls as well.
Summary of change:	⌘	When AC is pending and ETC/ CTR fails the 'Handle_ACR' process is called. ACR (with timeIfNoTariffSwitch or TimeSinceTariffSwitch set to '0') is sent followed by CAP error. This will align the ETC/ CTR failure handling with other failure scenarios such as unsuccessful call establishment scenarios.
Consequences if not approved:	⌘	If ETC/ CTR fails at any point in a call then the SCF may find that it can not provide new charging parameters for User Interaction with a SRF after that point.

Clauses affected:	⌘	Figure 4.95-16: Process CS_gsmSSF (Sheet 16) Figure 4.95-21: Process CS_gsmSSF (Sheet 21)

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

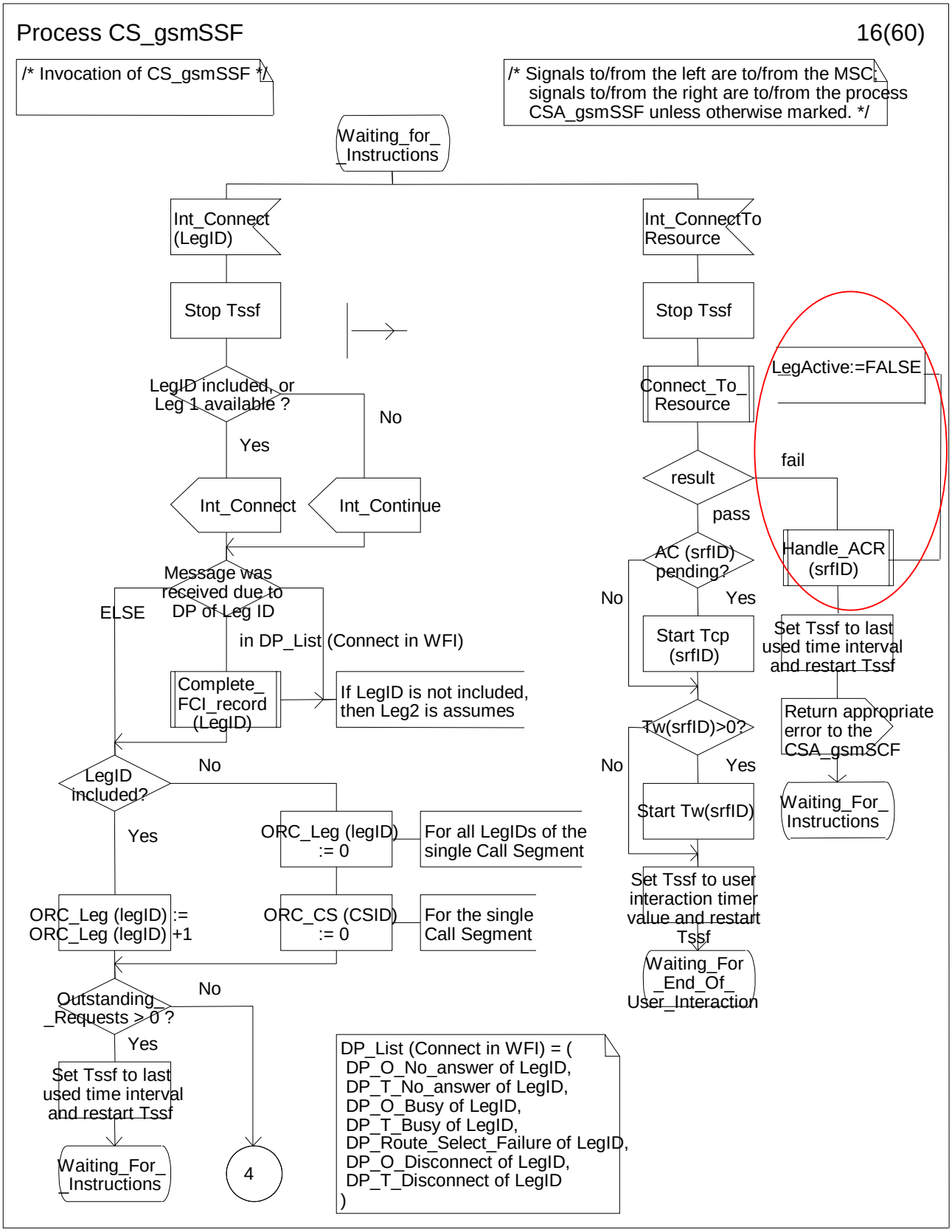
How to create CRs using this form:

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

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

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

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


Process CS_gsmSSF
16(60)
/* Invocation of CS_gsmSSF */
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the process CSA_gsmSSF unless otherwise marked. */
Waiting_for_ _Instructions
Int_Connect (LegID)
Int_ConnectTo Resource
Stop Tssf
Stop Tssf
LegActive:=FALSE
LegID included, or Leg 1 available ?
No
Yes
Connect_To_ Resource
result
fail
pass
Int_Connect
Int_Continue
AC (srfID) pending?
Handle_ACR (srfID)
Message was received due to DP of Leg ID
ELSE
No
Yes
in DP_List (Connect in WFI)
Start Tcp (srfID)
Set Tssf to last used time interval and restart Tssf
Complete_ FCI_record (LegID)
If LegID is not included, then Leg2 is assumes
Tw(srfID)>0?
Return appropriate error to the CSA_gsmSCF
LegID included?
No
No
Yes
Start Tw(srfID)
Waiting_For_ Instructions
Yes
ORC_Leg (legID) := 0
For all LegIDs of the single Call Segment
Set Tssf to user interaction timer value and restart Tssf
ORC_Leg (legID) := ORC_Leg (legID) +1
ORC_CS (CSID) := 0
For the single Call Segment
Waiting_For _End_Of_ User_Interaction
No
Outstanding_ _Requests > 0 ?
Yes
Set Tssf to last used time interval and restart Tssf
Waiting_For_ _Instructions
4
DP_List (Connect in WFI) = (DP_O_No_answer of LegID, DP_T_No_answer of LegID, DP_O_Busy of LegID, DP_T_Busy of LegID, DP_Route_Select_Failure of LegID, DP_O_Disconnect of LegID, DP_T_Disconnect of LegID)

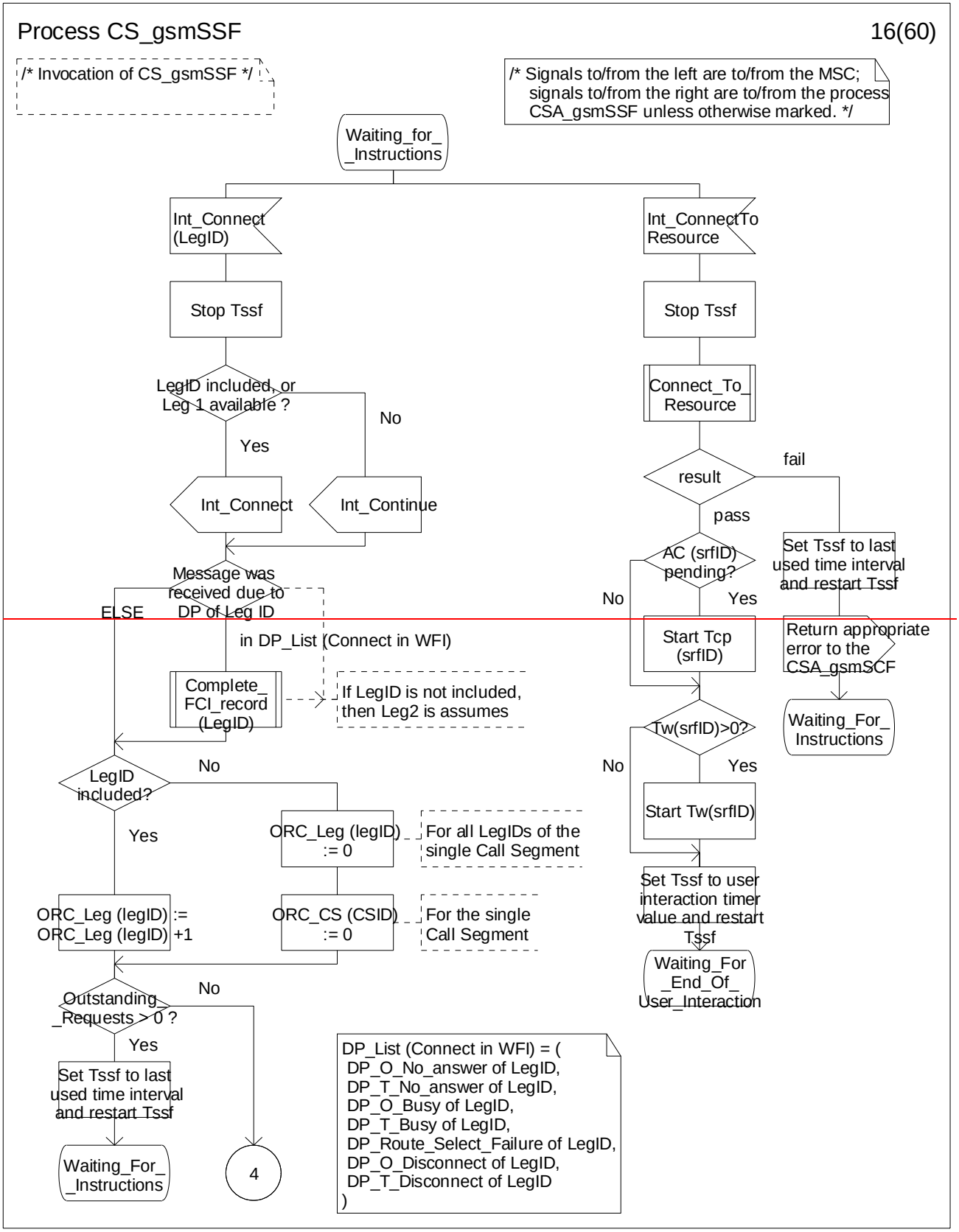
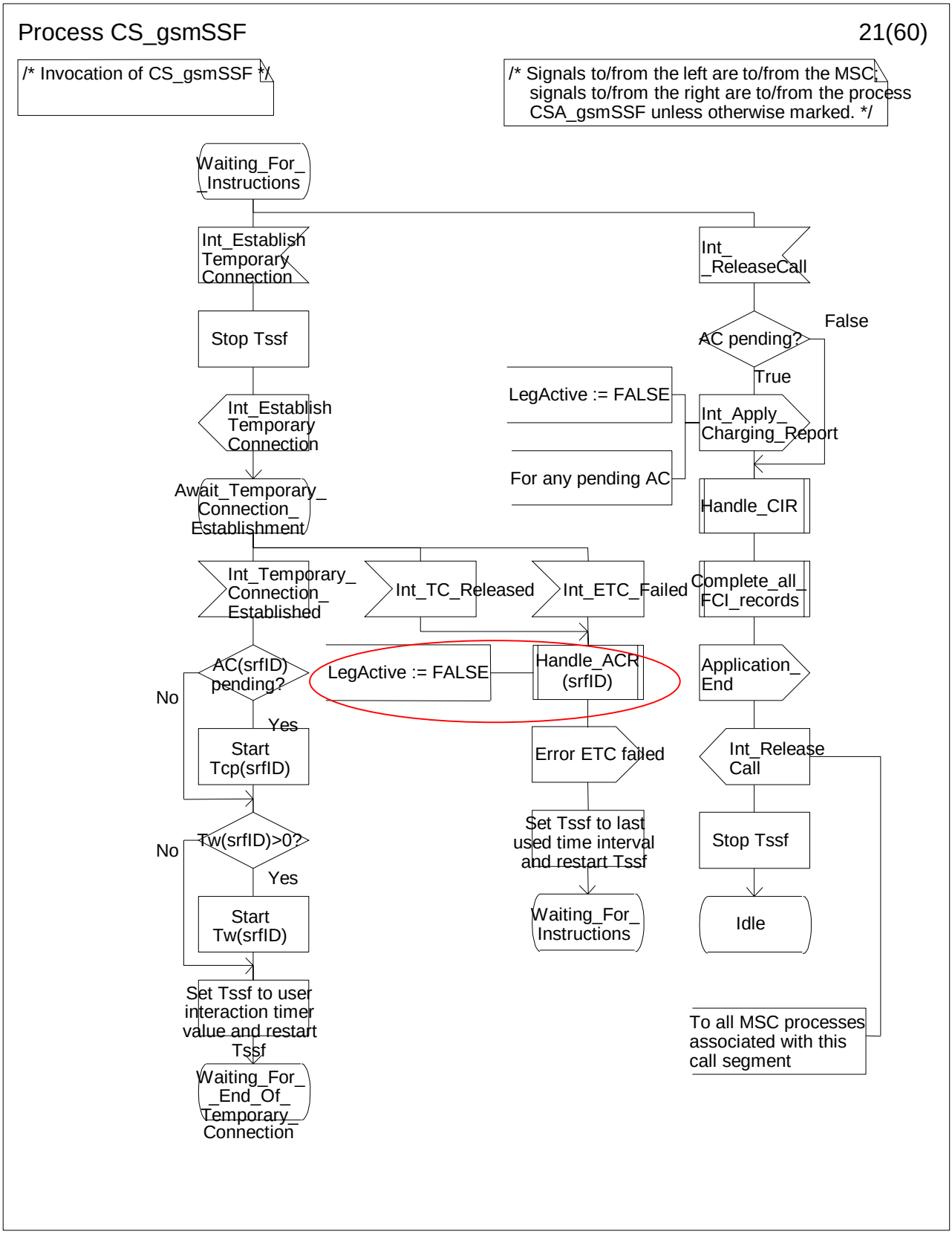


Figure Error! Reference source not found.**-1: Process CS_gsmSSF (sheet 1)**


Process CS_gsmSSF
21(60)
/* Invocation of CS_gsmSSF */
/* Signals to/from the left are to/from the MSC; signals to/from the right are to/from the process CSA_gsmSSF unless otherwise marked. */
Waiting_For_ _Instructions
Int_Establish Temporary Connection
Stop Tssf
Int_Establish Temporary Connection
Await_Temporary_ Connection_ Establishment
Int_Temporary_ Connection_ Established
Int_TC_Released
Int_ETC_Failed
AC(srfID) pending?
No
Yes
Start Tcp(srfID)
Tw(srfID)>0?
No
Yes
Start Tw(srfID)
Set Tssf to user interaction timer value and restart Tssf
Waiting_For_ _End_Of_ Temporary_ Connection
LegActive := FALSE
Handle_ACR (srfID)
Error ETC failed
Set Tssf to last used time interval and restart Tssf
Waiting_For_ Instructions
Int_ _ReleaseCall
AC pending?
False
True
LegActive := FALSE
For any pending AC
Int_Apply_ Charging_Report
Handle_CIR
Complete_all_ FCI_records
Application_ End
Int_Release Call
Stop Tssf
Idle
To all MSC processes associated with this call segment

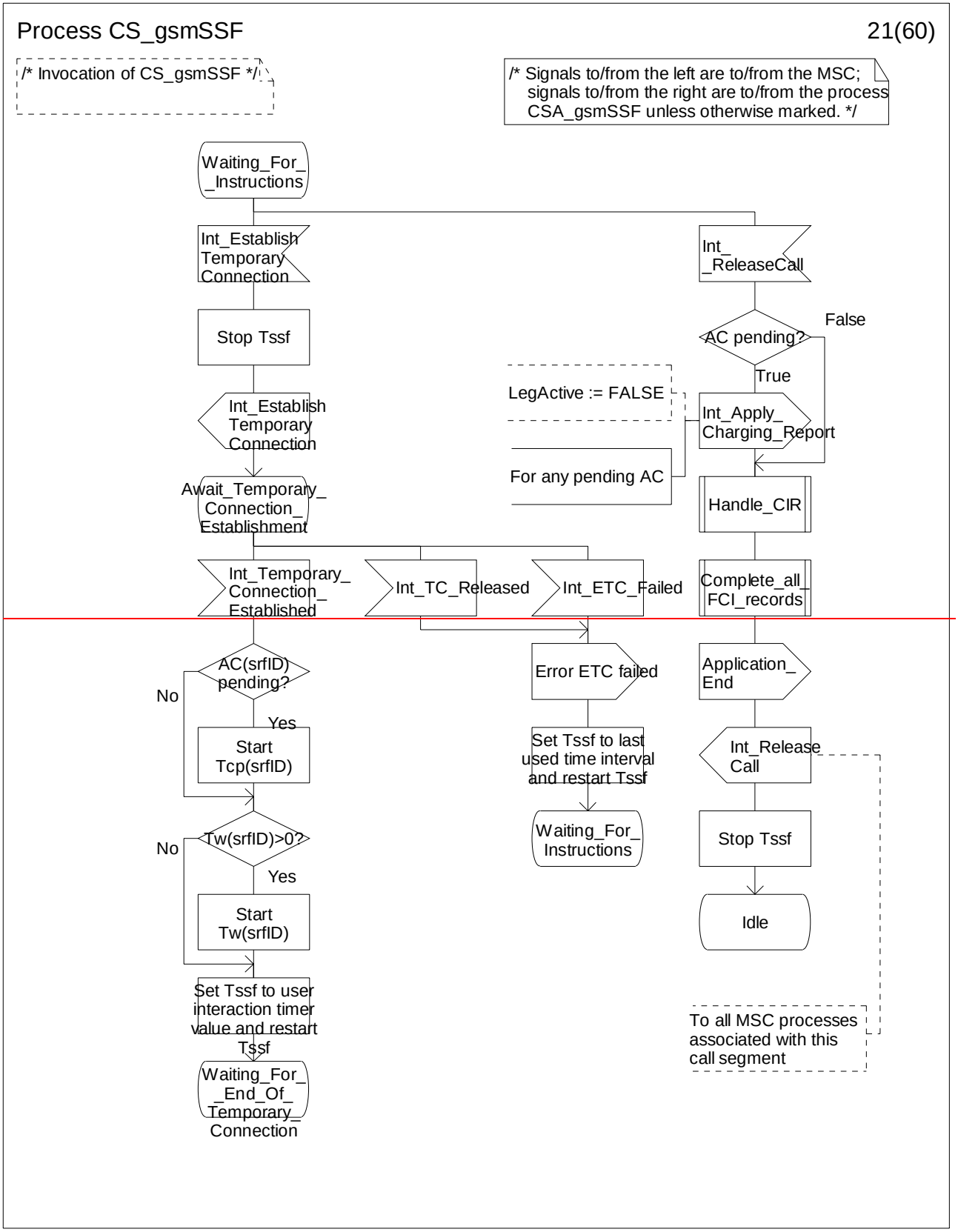


Figure Error! Reference source not found.**-2: Process CS_gsmSSF (sheet 2)**

3GPP TSG CN WG4 Meeting #21 **N2-030498**
Bangkok, THAILAND, 27th – 31st October 2003

CHANGE REQUEST

⌘ **23.078** **CR** **629** ⌘ **rev** **-** ⌘ Current version: **5.5.1** ⌘

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

Title:	⌘	Remove contents table for MNP Requested Info parameter
Source:	⌘	Ericsson L.M.
Work item code:	⌘	CAMEL4
Date:	⌘	12/10/2003
Category:	⌘	F (essential correction)
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*

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:	⌘	According to 3GPP TSs 23.066 and 29.002, MNP Requested Info IE in MAP message Any-Time-Interrogation does not contain any data. In clause 12.3.1.1.2 of 3GPP TS 23.078 there is an IE description table that contains possible IE for IE MNP Requested Info resulting in a misalignment between the TSs concerning MNP functionality.
Summary of change:	⌘	Remove IE description table for parameter MNP Requested Info.
Consequences if not approved:	⌘	Misalignment between TS 29.002, 23.066 and 23.078. Unclear requirements towards imlpementation.

Clauses affected:	⌘	12.3.1.1.2

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

Other comments:	⌘	Refer to Change request **NP-030392** for more information concerning this issue; refer also to the "for information" section of the present CR for the ATI Request ASN.1 syntax. Parameter **`mnpRequestedInfo`** does not contain sub-parameters.

*** For Information – extract from 3GPP TS 29.002 V5.7.0 ***

```
AnyTimeInterrogationArg ::= SEQUENCE {
     subscriberIdentity                 [0] SubscriberIdentity,
     requestedInfo                      [1] RequestedInfo,
     gsmSCF-Address                     [3] ISDN-AddressString,
     extensionContainer                 [2] ExtensionContainer          OPTIONAL,
     ...}
```

```
RequestedInfo ::= SEQUENCE {
     locationInformation                [0] NULL                        OPTIONAL,
     subscriberState                    [1] NULL                        OPTIONAL,
     extensionContainer                 [2] ExtensionContainer          OPTIONAL,
     ...,
     currentLocation                    [3] NULL                        OPTIONAL,
     requestedDomain                    [4] DomainType                  OPTIONAL,
     imei                               [6] NULL                        OPTIONAL,
     ms-classmark                       [5] NULL                        OPTIONAL,
     mnpRequestedInfo                   [7] NULL                        OPTIONAL
     }
--   currentLocation shall be absent if locationInformation is absent
```

***** *First Modification* *****

12 Subscriber Mobile Number Portability status retrieval

…

12.3 Description of information flows

…

12.3.1 gsmSCF to MNP SRF information flows

12.3.1.1 Any Time Interrogation Request

12.3.1.1.1 Description

This IF is used by the gsmSCF to request the MNP information for subscribers from the MNP SRF at any time.

12.3.1.1.2 Information Elements

Information element name	Status	Description
gsmSCF Address	M	This IE indicates the address of the interrogating gsmSCF.
Requested Info	M	This IE indicates the type of subscriber information that is requested. It shall have the following value: - MNP Requested Info.
Subscriber Identity	M	This IE identifies the subscriber for which the information is requested. The identity shall be: - MSISDN.

~~MNP Requested Info contains the following information elements:~~

~~Information element name~~	~~Status~~	~~Description~~
~~Routeing Number~~	~~O~~	~~Refer to 3GPP TS 23.066 [17].~~
~~IMSI~~	~~O~~	~~Refer to 3GPP TS 23.066 [17].~~
~~MSISDN~~	~~O~~	~~Refer to 3GPP TS 23.066 [17].~~
~~Number portability status~~	~~O~~	~~Refer to 3GPP TS 23.066 [17].~~

***** *End of Modification* *****

3GPP TSG CN WG2 Meeting #31
Bangkok, Thailand, 27th – 31st Oct 2003

N2-030547

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **634** ⌘ **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:	⌘	SDL handling of DisconnectFromIPForbidden in Assisting SSF case
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	27.10.2003
Category:	⌘	**F (Essential correction)**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	Assisting and integrated SSF shall have different handling for the DisconnectFromIPForbidden parameter. In the current specification, the gsmSRF and assisting SSF are not closing the TC dialogue properly whereas the integrated SSF handling is OK.
Summary of change:	⌘	Changed: In A_SSF case(gsmSRF or assisting SSF in 29.078 terminology, gsmSRF or assisting SSP, process assisting_gsmSSF in 23.078), "disconnectFromIPForbidden = False" would result in disconnecting from the gsmSRF and closing the assisting dialogue (between gsmSRF or assisting gsmSSF, and gsmSCF). The initiating dialogue (between initiating gsmSSF and gsmSCF) would remain alive. The SDL is updated accordingly. Also the 29.078 needs clarification. The current text does not specify difference between assisting SSF and integrated SSF. Also, the SpecializedResourceReport applies only to the announcement complete report, not the announcement started report. Unchanged: In integrated SSF case(gsmSSF in 29.078 terminology, gsmSSF and process CS_gsmSSF in 23.078), "disconnectFromIPForbidden = False" would result in disconnecting from the gsmSRF and also closing the one-and-only dialogue (initiating gsmSSF and gsmSCF); in this case, there is no initiating and assisting dialogue; there is one dialogue only.
Consequences if not approved:	⌘	Different implementations of Assisting SSF, and thus incompatibility. The "faulty"Assisting SSF would not release the CAP dialogue although desired by the SCP.

Clauses affected:	⌘	

		Y	N			
Other specs affected:	⌘	X		Other core specifications	⌘	29.078-CR342
			X	Test specifications		
			X	O&M Specifications		

Other comments: ⌘ -

-- First modified section --

4.5.8 Assisting case

Assisting case involves the following processes:

- CAMEL_Assisting_MSC,
- Assisting_gsmSSF.

The detailed error handling for these 2 processes is specified in 3GPP TS 29.078 [34].

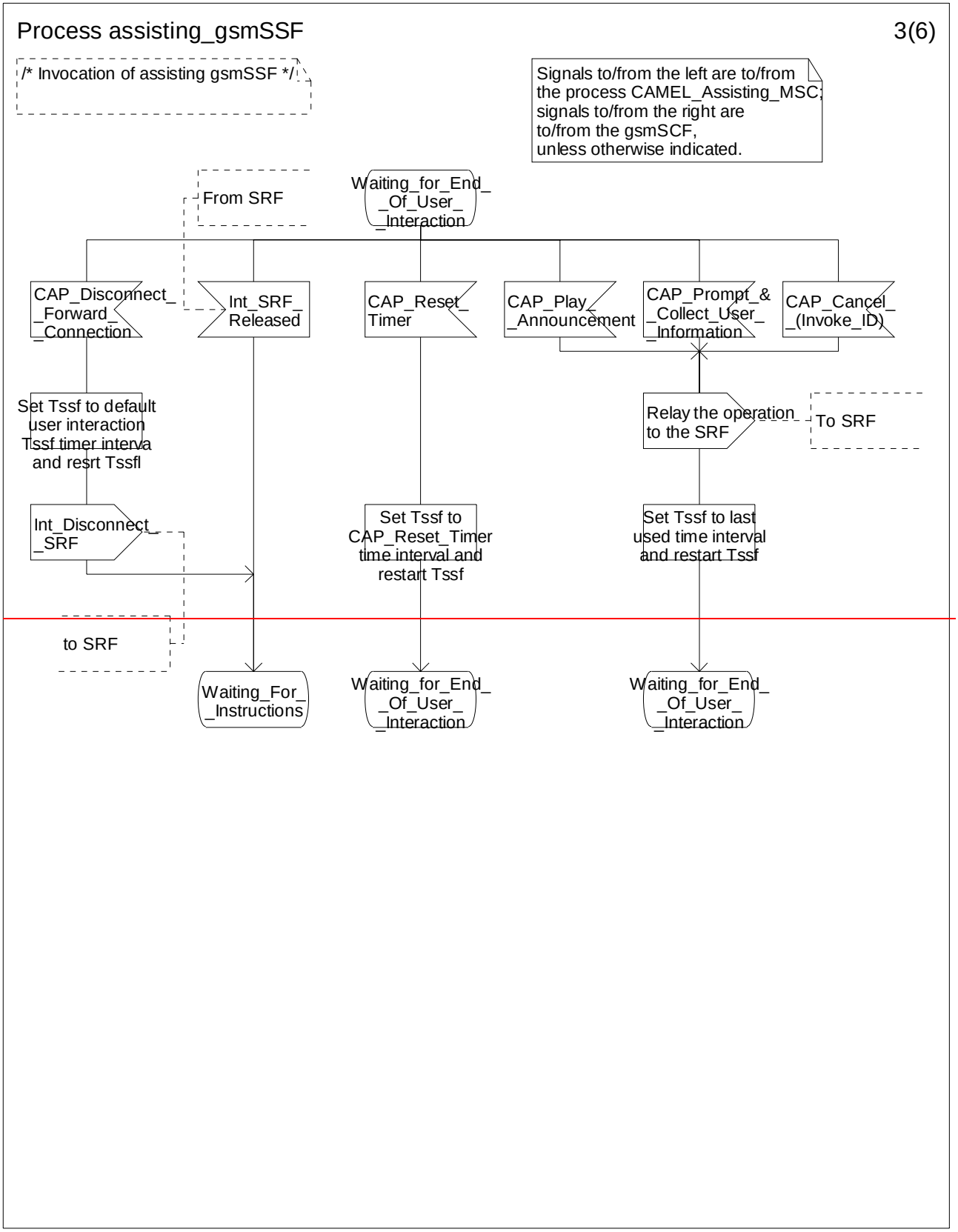
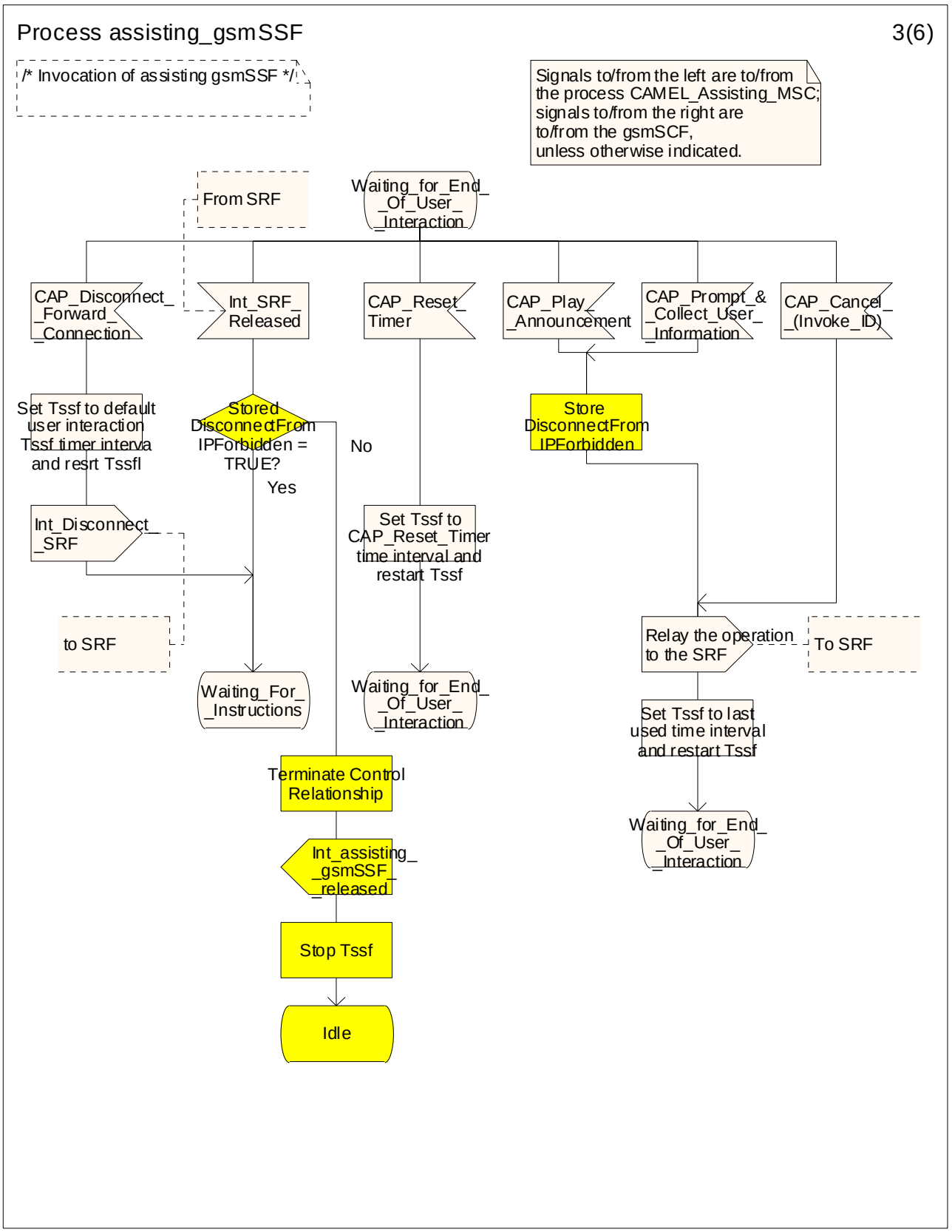


Figure 4.11-3: Process Assisting_gsmSSF (sheet 3)


Process assisting_gsmSSF
3(6)
/* Invocation of assisting gsmSSF */
Signals to/from the left are to/from the process CAMEL_Assisting_MSC; signals to/from the right are to/from the gsmSCF, unless otherwise indicated.
From SRF
Waiting_for_End_Of_User_Interaction
CAP_Disconnect_Forward_Connection
Int_SRF_Released
CAP_Reset_Timer
CAP_Play_Announcement
CAP_Prompt_&_Collect_User_Information
CAP_Cancel_(Invoke_ID)
Set Tssf to default user interaction Tssf timer interva and resrt Tssfl
Stored DisconnectFrom IPForbidden = TRUE?
No
Yes
Store DisconnectFrom IPForbidden
Int_Disconnect_SRF
Set Tssf to CAP_Reset_Timer time interval and restart Tssf
to SRF
Relay the operation to the SRF
To SRF
Waiting_For_Instructions
Waiting_for_End_Of_User_Interaction
Set Tssf to last used time interval and restart Tssf
Terminate Control Relationship
Waiting_for_End_Of_User_Interaction
Int_assisting_gsmSSF_released
Stop Tssf
Idle

3GPP TSG CN WG2 Meeting #31 **N2-030559**
Bangkok, Thailand, 27th – 31th October 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **643** ⌘ **rev** **-** ⌘ 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:	⌘	Inclusion of DP O_Term_Seized in CAMEL Phase 4 Partial Implementation
Source:	⌘	Siemens AG
Work item code:	⌘	CAMEL4
Date:	⌘	28/10/2003
Category:	⌘	**F** (essential correction)
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	Location information included in the Event Report BCSM IF at DP O_Term_Seized, if armed, is a newly added functionality in CAMEL Phase 4. However, this feature has been missing from the items of the partial implementation.
Summary of change:	⌘	Include DP O_Term_Seized in the item of "Location at Alerting" functionality. This also results that this feature is not limited to the called subscriber.
Consequences if not approved:	⌘	This feature would not recognised by the gsmSCF. Desired service might not be realised if the service requires the location information at DP O_Term_Seized.

Clauses affected:	⌘	1.1.2, 4.6.1.8

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

⌘

Other comments:	⌘	

*** First Modified Section ***

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 O_Term_Seized, 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).

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

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.
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).

Information element name	MO	MF	MT	VT	NC	NP	Description
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.
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.

Information element name	MO	MF	MT	VT	NC	NP	Description
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).
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.

Information element name	MO	MF	MT	VT	NC	NP	Description
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.
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.

Information element name	MO	MF	MT	VT	NC	NP	Description
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 O_Term_Seized or 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.

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].

Information element name	MO	MF	MT	VT	NC	NP	Description
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
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.

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Bangkok, Thailand, 27th – 31st Oct 2003

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CHANGE REQUEST

⌘ **29.078** **CR** **342** ⌘ **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:	⌘	Handling of DisconnectFromIPForbidden in Assisting SSF case
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	28.10.2003
Category:	⌘	**F (Essential correction)**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	Assisting and integrated SSF shall have different handling for the DisconnectFromIPForbidden parameter. In the current specification, the gsmSRF and assisting SSF are not closing the TC dialogue properly whereas the integrated SSF handling is OK.
Summary of change:	⌘	Changed: In A_SSF case (gsmSRF or assisting SSF in 29.078 terminology, gsmSRF or assisting SSP, process assisting_gsmSSF in 23.078), "disconnectFromIPForbidden = False" would result in disconnecting from the gsmSRF and closing the assisting dialogue (between gsmSRF or assisting gsmSSF, and gsmSCF). The initiating dialogue (between initiating gsmSSF and gsmSCF) would remain alive. The SDL is updated accordingly. Also the 29.078 needs clarification. The current text does not specify difference between gsmSRF/assisting SSF and integrated SSF. Also, the SpecializedResourceReport applies only to the announcement complete report, not the announcement started report. The dialogues opened with ICA are taken into account as well. Unchanged: In integrated SSF (gsmSSF in 29.078 terminology, gsmSSF and process CS_gsmSSF in 23.078) case, "disconnectFromIPForbidden = False" would result in disconnecting from the gsmSRF and also closing the one-and-only dialogue (initiating gsmSSF and gsmSCF); in this case, there is no initiating and assisting dialogue; there is one dialogue only.
Consequences if not approved:	⌘	Different implementations of Assisting SSF, and thus incompatibility. The "faulty"Assisting SSF would not release the CAP dialogue although desired by the SCP.

Clauses affected:	⌘				
Other specs affected:	⌘	**Y**	**N**		
		X		Other core specifications	⌘ 23.078-CR634
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	-			

-- First modified section --

14.1.2 gsmSSF-gsmSCF interfaces

14.1.2.1 Normal procedures

14.1.2.1.1 gsmSSF-to-gsmSCF messages

The present subclause defines the normal procedures for TC messages from the gsmSSF to the gsmSCF.

gsmSSF FSM related messages

A dialogue shall be established when the gsmSSF FSM transits from the state "Idle" to the state "Waiting_for_Instructions". ~~The InitialDP operation shall be transmitted in the same message~~.

The CAP Operation InitialDP shall be sent with a TC-BEGIN request primitive.

When the dialogue was opened with InitialDP or InitiateCallAttempt operation then the gsmSSF shall maintain the dialogue when sending the SpecialisedResourceReport operation indicating the announcement complete for PlayAnnouncement regardless of the fact whether the disconnectFromIPForbidden parameter was set to true or false.

For all other operations sent from the gsmSSF FSM, the dialogue shall be maintained except for the following cases.

When the gsmSSF FSM executes a non-error case state transition to the state "Idle" and there is one or more pending operation and TC dialogue is established, TC dialogue can be terminated by TC-END primitive with component(s). When the gsmSSF sends the last EventReportBCSM, ApplyChargingReport or CallInformationReport the dialogue may be ended from the gsmSSF by a TC-END request primitive with basic end.

In the case that there is no pending operation and TC dialogue is established, TC dialogue can be terminated by TC-END primitive with zero component or prearranged end. When the gsmSSF FSM makes a non-error case state transition to the state "Idle" and there is no operation to be sent, the dialogue is ended by means of a TC-END request primitive (basic) with zero components, or the dialogue is locally ended by means of a TC-END request primitive with prearranged end.

In the case where a call release is initiated by any other entity than a gsmSCF, the gsmSSF can end a dialogue with a TC-END request primitive with zero component or prearranged end if a TC dialogue is established and the gsmSSF has no pending call information requests (or pending requests which should be treated in the same way, see subclause 14.1.1.1) nor any armed EDP.

When the gsmSSF has sent the last EventReportBCSM, ApplyChargingReport or CallInformationReport the dialogue may be ended from the gsmSCF by a TC-END request primitive with basic end.

Assisting gsmSSF FSM related messages

A dialogue shall be established when the assisting gsmSSF FSM transits from the state "Idle" to the state "Waiting_for_Instructions". The AssistRequestInstructions operation shall be transmitted with a TC-BEGIN request primitive.

For all other operations sent from the assisting gsmSSF FSM, the dialogue shall be maintained except for the following cases.

When the assisting gsmSSF FSM makes a non-error case state transition to the state "Idle" and there is one or more pending operation and TC dialogue is established, TC dialogue can be terminated by TC-END primitive with component(s).

In the assisting gsmSSF case the same rules apply as for the gsmSRF as specified for the SpecialisedResourceReport operation in subclause 14.1.3.1.1.

In the case that there is no pending operation and TC dialogue is established, TC dialogue can be terminated by TC-END primitive with zero component or prearranged end. When the assisting gsmSSF FSM makes a non-error case state transition to the state "Idle" and there is no operation to be sent, the dialogue is ended by means of a TC-END

request primitive (basic) with zero components, or the dialogue is locally ended by means of a TC-END request primitive with prearranged end.

gsmSSME FSM related messages

The following procedures shall be followed:

- The dialogue shall be maintained when the ActivityTest Return Result is sent.

-- Next modified section --

14.1.2.1.2 gsmSCF-to-gsmSSF messages

The present subclause defines the normal procedures for TC messages from the gsmSCF to the gsmSSF.

SCSM-FSM related messages

A dialogue shall be established when the SCSM-FSM receives ~~of~~ an InitialDP operation for TDP-R or an AssistRequestInstructions operation, or sends an InitiateCallAttempt operation.

For subsequent operations sent from the SCSM-FSM, the dialogue shall be maintained except for the following cases; ~~i.e. all other operations are sent after a dialogue was established from the gsmSSF (the gsmSCF has previously received a TC-BEGIN indication primitive with an InitialDP operation or an AssistRequestInstructions operation).~~

The dialogue shall no longer be maintained when the prearranged end condition is met in the gsmSCF. When the gsmSCF does not expect any messages other than possibly REJECT or ERROR messages for the operations sent and when the last associated operation timer expires, the dialogue is locally ended by means of a TC-END request primitive with prearranged end.
Alternatively, the sending of operations, leading to the termination of the relationship, by means of a TC-END request primitive (basic end) is possible.

SCME-FSM related messages

The operations sent from the SCME-FSM shall be issued according to the following procedures:

- The dialogue shall be maintained when the ActivityTest operation is sent.
- For sending one or more CallGap operations, the SCME FSM shall use an existing SCSM FSM associated dialogue which was initiated by a gsmSSF FSM (i.e. established for the transmission of the InitialDP operation). The dialogue shall be maintained.

-- Next modified section --

14.1.3 gsmSCF-gsmSRF interface

14.1.3.1 Normal procedures

14.1.3.1.1 gsmSCF-to/from-gsmSRF messages

A dialogue is established when the gsmSRF sends an AssistRequestInstructions operation to the gsmSCF. For all other operations sent to/from the gsmSRF, the dialogue shall be maintained.

In the case that there is no pending operation and TC dialogue is established, TC dialogue can be terminated by TC-END primitive with zero component. When the SCSM makes a non-error case state transition to end-user interaction and there is no operation to be sent, the dialogue is ended by means of a TC-END request primitive (basic) with zero components.

CR editor's note: Hard to read but this section applies only to ARI dialogue. AssistRequestIntruction belongs to gsmSRF and assist gsmSSF application packages/sections.

When ~~T~~the dialogue is opened with the AssistRequestInstructions operation then the gsmSRF shall no longer ~~be~~ maintain~~ed~~ the dialogue when sending the SpecialisedResourceReport operation indicating announcement complete for PlayAnnouncement with disconnectFromIPForbidden parameter was set to false ~~disconnection from the gsmSRF set to true~~ or Return Result of the PromptAndCollectUserInformation with disconnectFromIPForbidden parameter was set to false~~disconnection from the gsmSRF set to true with disconnection from the gsmSRF set to true~~. The dialogue~~s~~ is ended by means of a TC-END request primitive with basic end, and the ~~one of above operations~~ SpecialisedResourceReport operation is transmitted with the same request.

CR editor's note: SpecialisedResourceReport may also indicate announcement started.

Regardless of whether pending operation exists or not, when the SRSM-FSM is informed of the disconnection of bearer connection (in the case of gsmSCF initiated disconnection or call abandon from call party) and dialogue is established, the dialogue is ended by means of a TC-END request primitive (basic) with zero components or TC-END request primitive (prearranged end).

The dialogue shall no longer be maintained when the prearranged end condition is met in the gsmSRF. When the SRSM-FSM is informed the disconnection of bearer connection and TC dialogue is not established, TC dialogue is locally terminated by TC-END primitive with prearranged end.

When the gsmSCF does not expect any messages other than possibly REJECT or ERROR messages for the operations sent and when the last associated operation timer expires, the dialogue is locally ended by means of a TC-END request primitive with prearranged end. Alternatively, the sending of operations, leading to the termination of the relationship, by means of a TC-END request primitive (basic end) is possible.

In the relay case, the gsmSRF-gsmSCF relationship uses the gsmSSF-gsmSCF TC dialogue. This is possible, because begin and end of the gsmSRF-gsmSCF relationship are embedded in the gsmSSF-gsmSCF relationship. gsmSRF-gsmSCF information shall be exchanged with TC-CONTINUE request primitives.

CHANGE REQUEST

⌘ **23.078** **CR** **633** ⌘ **rev** **1** ⌘ Current version: **5.5.1** ⌘

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

Title:	⌘	Reporting Basic Service at DP Answer for SCUDIF calls
Source:	⌘	L.M. Ericsson / NTT DoCoMo
Work item code:	⌘	CAMEL4
Date:	⌘	28/10/2003
Category:	⌘	F (essential correction)
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*

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:	⌘	A SCUDIF call is requested with two basic services (speech and UDI 64 kbit/s multimedia) and is negotiated across the network using BICC codec negotiation (OoBTC), as described in 3GPP TS 23.172. The result from the negotiation is received from the terminating side in a BICC APM message (*i.e.* before alerting), where the result can be: both services as requested by the originating side, both services but in a reversed order, only the first requested service (fallback to preferred service), or only the second requested service (fallback to less preferred service). So far, the gsmSCF only receives the services as requested by the originating side (see approved CR N2-030458), but is unaware of the result from the negotiation, and thus does not know what services are allowed for this call and which one is active at answer (aka selected service). The result from the negotiation of services for a SCUDIF call needs to be reported to the gsmSCF, by reporting "Ext-basic service code" (for the selected service) and when needed "Ext-basic service code 2" (for the other service, if available for service change during the call).
Summary of change:	⌘	The result from the negotiation is reported to the gsmSCF at Answer by including Ext-basic service code and when needed Ext-basic service code 2.
Consequences if not approved:	⌘	The result from the negotiation cannot be reported, which results in the gsmSCF not knowing what services are allowed for this call and which one is active at answer. One of the consequences is that the gsmSCF may not be able to charge properly for the call.

Clauses affected:	⌘	4.6.1.6

Y N

Other specs affected:	⌘	X		Other core specifications	⌘ 29.078-CR336
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

First modified section

4.6.1.6 Event Report BCSM

4.6.1.6.1 Description

This IF is used to notify the gsmSCF of a call-related event (i.e. BCSM events as answer and disconnect) previously requested by the gsmSCF in a Request Report BCSM Event IF.

4.6.1.6.2 Information Elements

Information element name	MO	MF	MT	VT	NC	NP	Description
Event Type BCSM	M	M	M	M	M	M	This IE specifies the type of event that is reported.
Event Specific Information BCSM	C	C	C	C	C	C	This IE indicates the call related information specific to the event.
Leg ID	M	M	M	M	M	M	This IE indicates the party in the call for which the event is reported.
Misc Call Info	M	M	M	M	M	M	This IE indicates the DP type.

If the Event Type BCSM IE contains either O_Answer or T_Answer, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Destination Address	M	M	M	M	M	M	This IE specifies the destination address for the call leg. The *NatureOfAddress indicator* may contain a national-specific value. For some national-specific *NatureOfAddress indicator* values the length of the digit part of destination address may be zero.
OR	-	C	C	-	-	-	This IE indicates that the call was subject to basic Optimal Routeing as specified in 3GPP TS 23.079 [**Error! Reference source not found.**].
Forwarded Call	-	M	C	C	-	-	This IE indicates that the call has been subject to a Call Forwarding supplementary service.
Charge Indicator	S	S	S	S	S	S	This IE specifies the value which will be stored in the Call Data Record. See ITU-T Recommendation Q.763 [**Error! Reference source not found.**].
Ext-Basic Service Code	S	S	S	S	-	-	This IE is used for SCUDIF calls. The IE indicates the type of basic service, *i.e.* teleservice or bearer service. It indicates the service active at answer for the SCUDIF call (as defined in 3GPP TS 23.172 [27]).
Ext-Basic Service Code 2	S	S	S	S	-	-	This IE is used for SCUDIF calls.The IE indicates the type of basic service, *i.e.* teleservice or bearer service. It indicates the service which is not active at answer for the SCUDIF call (as defined in 3GPP TS 23.172 [27]). It shall be present if the negotiation of the SCUDIF services resulted in both basic services for the SCUDIF call. Otherwise shall be absent.

If the Event Type BCSM IE contains either O_Mid_Call or T_Mid_Call, then the Event Specific Information BCSM IE contains the following information element:

Information element name	MO	MF	MT	VT	NC	NP	Description

Midcall Info	M	-	-	M	-	-	This IE is described in a table below.

MidCall Info contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
DTMF Digits Completed	S,E	-	-	S,E	-	-	This IE contains the detected mid-call digits. This IE shall be present when triggering takes place after the minimum number of digits has been detected.
DTMF Digits Timeout	S,E	-	-	S,E	-	-	This IE contains the detected mid-call digits. This IE shall be present when triggering takes place before the minimum number of digits has been detected.

If the Event Type BCSM IE contains one of Route_Select_Failure, O_Busy, O_Disconnect or T_Disconnect, then the Event Specific Information BCSM IE contains the following information element:

Information element name	MO	MF	MT	VT	NC	NP	Description
Cause	C	C	C	C	C	C	This IE indicates the cause.

If the Event Type BCSM IE contains T_Busy, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Cause	C	C	C	C	-	-	This IE indicates the cause.
Call forwarded	-	-	C	C	-	-	This IE indicates that the call may be forwarded by the appropriate Call Forwarding supplementary service or Call Deflection supplementary service. If T_Busy is reported from the GMSC, then this IE shall be present in the following cases: - The event is triggered by the reception of an FTN in the 2nd Send Routeing Info ack from the HLR; - The event is triggered by the reception of the Resume Call Handling information flow from the VMSC. If T_Busy is reported from the VMSC, then this IE shall be present in the following cases: - The event is triggered by the invocation of conditional call forwarding (Busy or Not_Reachable); - The event notification is triggered by the invocation of Call Deflection.
Route Not permitted	-	-	S	-	-	-	This IE indicates that the further call setup will not take place in this GMSC due to the rules of basic optimal routeing. See 3GPP TS 23.079 [**Error! Reference source not found.**].
Forwarding Destination Number	-	-	C	C	-	-	This IE contains the Forwarded-to-Number or the Deflected-to-Number. It shall be present if the Call Forwarded IE is present. Otherwise, it shall be absent.

If the Event Type BCSM IE contains T_No_Answer, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Call Forwarded	-	-	C	C	-	-	This IE indicates that the call may be forwarded by the appropriate Call Forwarding supplementary service.

Information element name	MO	MF	MT	VT	NC	NP	Description
							If T_No_Answer is reported from the GMSC, then this IE shall be present in the following cases: - The event is triggered by the reception of the Resume Call Handling information flow from the VMSC. If the T_No_Answer is reported from the VMSC, then this IE shall be present in the following cases: - The event is triggered by the invocation of conditional call forwarding (No_Answer).
Forwarding Destination Number	-	-	C	C	-	-	This IE contains the Forwarded-to-Number or the Deflected-to-Number. It shall be present if the Call Forwarded IE is present. Otherwise, it shall be absent.

If the Event Type BCSM IE contains Call_Accepted, O_Term_Seized, O_Change_Of_Position or T_Change_Of_Position, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Location Information	C	-	-	C	-	-	See subclause **Error! Reference source not found.** with VLR Number IE as "- (not applicable)".

If the Event Type BCSM IE contains O_Abandon, then the Event Specific Information BCSM IE contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Route Not Permitted	-	S	-	-	-	-	This IE indicates that the further call setup will not take place in this MSC due to the rules of basic optimal routeing. See 3GPP TS 23.079 [**Error! Reference source not found.**].

If the Event Type BCSM IE contains O_No_Answer, then the Event Specific Information BCSM IE is not included.

End of modified section

3GPP TSG CN WG2 Meeting #31 **N2-030564**
Bangkok, Thailand, 27th – 31th October 2003 *(N2-030496)*

CHANGE REQUEST

⌘ **29.078** **CR** **336** ⌘ **rev** **1** ⌘ Current version: **5.5.0** ⌘

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

Title:	⌘	Reporting Basic Service at DP Answer for SCUDIF calls
Source:	⌘	L.M. Ericsson / NTT DoCoMo
Work item code:	⌘	CAMEL4
Date:	⌘	28/10/2003
Category:	⌘	F (essential correction)
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(addition of feature),*
C *(functional modification of feature)*
D *(editorial modification)*

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:	⌘	A SCUDIF call is requested with two basic services (speech and UDI 64 kbit/s multimedia) and is negotiated across the network using BICC codec negotiation (OoBTC), as described in 3GPP TS 23.172. The result from the negotiation is received from the terminating side in a BICC APM message (*i.e.* before alerting), where the result can be: both services as requested by the originating side, both services but in a reversed order, only the first requested service (fallback to preferred service), or only the second requested service (fallback to less preferred service). So far, the gsmSCF only receives the services as requested by the originating side (see approved CR N2-030458), but is unaware of the result from the negotiation, and thus does not know what services are allowed for this call and which one is active at answer (aka selected service). The result from the negotiation of services for a SCUDIF call needs to be reported to the gsmSCF, by reporting "Ext-basic service code" (for the selected service) and when needed "Ext-basic service code 2" (for the other service, if available for service change during the call).
Summary of change:	⌘	The parameters allowing to report the result to the gsmSCF are added to the Event Specific Information BCSM IE for the Event Report BCSM.
Consequences if not approved:	⌘	The result from the negotiation cannot be reported, which results in the gsmSCF not knowing what services are allowed for this call and which one is active at answer. One of the consequences is that the gsmSCF may not be able to charge properly for the call.

Clauses affected:	⌘	2, 5.1, 11.18.1.1

☒ Y ☐ N

Other specs affected:	⌘	X		Other core specifications	⌘ 23.078-CR633
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘				

First modified section

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document.*

existing references skipped for clarity

[91] ANSI T1.112-1996: "American National Standards for Telecommunications- Signalling System Number 7 (SS7) - Signalling Connection Control Part (SCCP)".

[92] ANSI T1.113-1995: "American National Standards for Telecommunications- Signalling System Number 7 (SS7) - ISDN User Part".

[x] 3GPP TS 23.172: "Technical realisation of Circuit Switched (CS) multimedia service UDI/RDI fallback and service modification; Stage 2".

Next modified section

5 Common CAP Types

5.1 Data types

ASN.1 text skipped for clarity

```
EventSpecificInformationBCSM {PARAMETERS-BOUND : bound} ::= CHOICE {
    routeSelectFailureSpecificInfo      [2] SEQUENCE {
        failureCause                        [0] Cause {bound}                       OPTIONAL,
        ...
        },
    oCalledPartyBusySpecificInfo        [3] SEQUENCE {
        busyCause                           [0] Cause {bound}                       OPTIONAL,
        ...
        },
    oNoAnswerSpecificInfo               [4] SEQUENCE {
        -- no specific info defined --
        ...
        },
    oAnswerSpecificInfo                 [5] SEQUENCE {
        destinationAddress                  [50] CalledPartyNumber {bound}          OPTIONAL,
        or-Call                             [51] NULL                               OPTIONAL,
        forwardedCall                       [52] NULL                               OPTIONAL,
        chargeIndicator                     [53] ChargeIndicator                    OPTIONAL,
        ext-basicServiceCode                [54] Ext-BasicServiceCode               OPTIONAL,
        ext-basicServiceCode2               [55] Ext-BasicServiceCode               OPTIONAL,
        ...
        },
    oMidCallSpecificInfo                [6] SEQUENCE {
```

```
        midCallEvents                       [1] CHOICE {
            dTMFDigitsCompleted                 [3] Digits {bound},
            dTMFDigitsTimeOut                   [4] Digits {bound}
            }                                                               OPTIONAL,
        ...
        },
    oDisconnectSpecificInfo             [7] SEQUENCE {
        releaseCause                        [0] Cause {bound}               OPTIONAL,
        ...
        },
    tBusySpecificInfo                   [8] SEQUENCE {
        busyCause                           [0] Cause {bound}               OPTIONAL,
        callForwarded                       [50] NULL                       OPTIONAL,
        routeNotPermitted                   [51] NULL                       OPTIONAL,
        forwardingDestinationNumber         [52] CalledPartyNumber {bound}  OPTIONAL,
        ...
        },
    tNoAnswerSpecificInfo               [9] SEQUENCE {
        callForwarded                       [50] NULL                       OPTIONAL,
        forwardingDestinationNumber         [52] CalledPartyNumber {bound}  OPTIONAL,
        ...
        },
    tAnswerSpecificInfo                 [10] SEQUENCE {
        destinationAddress                  [50] CalledPartyNumber {bound}  OPTIONAL,
        or-Call                             [51] NULL                       OPTIONAL,
        forwardedCall                       [52] NULL                       OPTIONAL,
        chargeIndicator                     [53] ChargeIndicator            OPTIONAL,
        ext-basicServiceCode                [54] Ext-BasicServiceCode       OPTIONAL,
        ext-basicServiceCode2               [55] Ext-BasicServiceCode       OPTIONAL,
        ...
        },
    tMidCallSpecificInfo                [11] SEQUENCE {
        midCallEvents                       [1] CHOICE {
            dTMFDigitsCompleted                 [3] Digits {bound},
            dTMFDigitsTimeOut                   [4] Digits {bound}
            }                                                               OPTIONAL,
        ...
        },
    tDisconnectSpecificInfo             [12] SEQUENCE {
        releaseCause                        [0] Cause {bound}               OPTIONAL,
        ...
        },
    oTermSeizedSpecificInfo             [13] SEQUENCE {
        locationInformation                 [50] LocationInformation        OPTIONAL,
        ...
        },
    callAcceptedSpecificInfo            [20] SEQUENCE {
        locationInformation                 [50] LocationInformation        OPTIONAL,
        ...
        },
    oAbandonSpecificInfo                [21] SEQUENCE {
        routeNotPermitted                   [50] NULL                       OPTIONAL,
        ...
        },
    oChangeOfPositionSpecificInfo       [50] SEQUENCE {
        locationInformation                 [50] LocationInformation        OPTIONAL,
        ...
        },
    tChangeOfPositionSpecificInfo       [51] SEQUENCE {
        locationInformation                 [50] LocationInformation        OPTIONAL,
        ...
        }
    }
-- Indicates the call related information specific to the event.
```

text skipped for clarity

Next modified section

11.18 EventReportBCSM procedure

11.18.1 General description

The gsmSSF uses this operation to notify the gsmSCF of a call related event previously requested by the gsmSCF in a "RequestReportBCSMEvent" operation.

11.18.1.1 Parameters

- eventTypeBCSM:
  This parameter specifies the type of event that is reported.

- eventSpecificInformationBCSM:
  This parameter indicates the call related information specific to the event.

  For Route_Select_Failure it shall contain the "FailureCause", if available.

  For O_Busy it shall contain the "BusyCause", if available.

- If the busy event is triggered by an ISUP release message, then the BusyCause is a copy of the ISUP release cause, for example: Subscriber absent, 20 or User busy, 17.

- If the busy event is trigerred by a MAP error, for example: Absent subscriber, received from the HLR, then the MAP cause is mapped to the corresponding ISUP release cause.

NOTE 1: If no BusyCause is received, then the gsmSCF shall assume busy.

For T_Busy it may contain the following parameters, if available.

- CallForwarded:
  This parameter indicates that the busy event is triggered by call forwarding at the GMSC or VMSC.

- ForwardingDestinationNumber:
  This parameter indicates the forwarding destination.

- RouteNotPermitted:
  This parameter indicates that the busy event is triggered because call forwarding was not invoked in this GMSC due to the rules of Basic Optimal Routeing.

- BusyCause:

  - If the busy event is triggered by an ISUP release message, then the BusyCause is a copy of the ISUP release cause, for example: Subscriber absent, 20 or User busy, 17.

  - If the busy event is triggered by a MAP error, for example: Absent subscriber, received from the HLR, then the MAP cause is mapped to the corresponding ISUP release cause.

  - If the busy event is triggered by call forwarding or call deflection invocation in the GMSC or VMSC, then the BusyCause will refer to the release cause in accordance with the mapping table in 3GPP TS 23.078 [7].

NOTE 2: If no BusyCause is received, then the gsmSCF shall assume busy.

- If the busy event is triggered by call forwarding at the GMSC, then the BusyCause reflects the forwarding reason (Subscriber Absent, 20 or User busy, 17). The eventSpecificInformationBCSM shall in that case also contain the CallForwarded indication.

For O_No_Answer it shall be empty.

For T_No_Answer it may contain the CallForwarded indication and the ForwardingDestinationNumber.

- If the No_Answer event is triggered by an ISUP release message or expiry of the CAMEL timer TNRy, then the eventSpecificInformationBCSM shall be empty.

- If the No_Answer event is triggered by call forwarding at the GMSC or VMSC, then the eventSpecificInformationBCSM shall contain the CallForwarded indication and the ForwardingDestinationNumber.

For O_Answer or T_Answer it shall contain the following information, if available:

- The destination address for the call;

- The OR indicator, in the case that the call was subject to Basic Optimal Routeing, as specified in 3GPP TS 23.079 [8];

- The forwarding indicator, in the case that the Call Forwarding Supplementary Service was invoked;
- The charge indicator;
- The Extended Basic Service Code, for SCUDIF calls (see 3GPP TS 23.172 [x]);
- The Extended Basic Service Code 2, for SCUDIF calls (see 3GPP TS 23.172 [x]).

For O_Mid_Call and T_Mid_Call it shall contain the detected digit string, in accordance with the criterion defined in the RequestReportBCSMEvent operation.

For Call_Accepted, O_Term_Seized, O_Change_Of_Position and T_Change_Of_Position it shall contain the following information:

- locationInformation:
  This parameter indicates the location of the MS.

For O_Disconnect and T_Disconnect it shall contain the "releaseCause", if available.

For O_Abandon" it may contain the following parameter, if available.

- routeNotPermitted:
  This parameter indicates that the O-Abondon event is triggered because call set up shall not be invoked in this MSC due to the rules of Basic Optimal Routeing.

- legID:
  This parameter indicates the party in the call for which the event is reported. The gsmSSF shall use the option "receivingSideID" only.

- receivingSideID:
  If not included, then the following defaults are assumed:

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

  "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 and T_Answer.

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

- miscCallInfo:
  This parameter indicates Detection Point (DP) related information.

- messageType:
  This parameter indicates whether the message is a request, i.e. resulting from a "RequestReportBCSMEvent" with monitorMode = interrupted, or a notification, i.e. resulting from a "RequestReportBCSMEvent" with "monitorMode" = "notifyAndContinue".

End of modified section

3GPP TSG CN WG2 Meeting #31 **N2-030577**
Bangkok, Thailand, 27th – 31st Oct 2003

CR-Form-v7

CHANGE REQUEST

⌘ **23.078** **CR** **568** ⌘**rev** **2** ⌘ 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:	⌘	CLIR/CLIP interaction with CSE initiated calls
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	30.9.2003
Category:	⌘	**F (essential correction)**
Release:	⌘	Rel-5

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

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

Reason for change: ⌘
The current situation is unclear.
1. 22.078 chapter 18.2.2 allows the CLIR setting for MO call.
2. 22.078 and 23.078 allow to change *additional calling party number* in all call cases. The CLIR indicator of CLI impacts also on the additional calling party number, and additional calling party number is shown to the called or forwarded-to party.
3. 23.078 chapter 4.6.2.6 allows CLIR setting in MO and NC (New call created out of the blue) calls in Connect operation.
4. 23.078 chapter 4.6.2.9 allows CLIR setting in MO and NP (new leg created) calls in ContinueWithArgument operation

The restrictions can be work-arounded by using ICA(new leg). Then all changes are allowed. However, this is a heavy solution.

Summary of change: ⌘
1. 22.078 would allow CLIR setting in all call cases. MT, VT and CSE initiated calls have been added.
2. 23.078 would allow CLIR setting in all call cases. Connect and CWA aligned.
3. Connect's description is copied to ContinueWithArgument description field

Consequences if not approved: ⌘ Inconsistent and complex specification

Clauses affected: ⌘

Other specs affected: ⌘

Y	N		
X		Other core specifications	⌘ 22.078-CRxxx
	X	Test specifications	
	X	O&M Specifications	

Other comments: ⌘	

-- First Modified Section --

4.6.2.6 Connect

4.6.2.6.1 Description

This IF is used to request the gsmSSF to perform the call processing actions to route a call to a specific destination. To do so, the gsmSSF may use destination information from the calling party and existing call set-up information depending on the information provided by the gsmSCF.

The gsmSCF shall not send this IF when there is a CSA with a single call segment which includes only leg 1.

4.6.2.6.2 Information Elements

Information element name	MO	MF	MT	VT	NC	NP	Description
Alerting Pattern	-	-	O	O	-	-	This IE indicates the kind of Alerting Pattern to be applied.
Calling Partys Category	O	O	O	O	O	O	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
Destination Routing Address	M	M	M	M	M	M	This IE contains the called party number towards which the call is to be routed. 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. The gsmSCF may use national-specific *NatureOfAddress indicator* values of the gsmSSF country.
Generic Number	O	O	O	O	O	O	This IE contains the generic number. Its used to convey the additional calling party number, which e.g. could be used to modify the calling line ID presented to the called user.
Carrier	O	O	O	O	O	O	This IE is described in a table below.
NA Originating Line Information	O	O	O	O	O	O	This IE identifies the type of number in the Charge Number (e.g. subscriber versus PLMN operator number).
Charge Number	O	O	O	O	O	O	This IE identifies the chargeable number for the usage of a North American carrier.
O-CSI Applicable	-	-	O	O	-	-	This IE indicates that the O-CSI, if present shall be applied on the outgoing leg.
Original Called Party ID	O	O	O	O	O	O	This IE carries the dialled digits if the call has met call forwarding on route to the gsmSSF or is forwarded by the gsmSCF.

Leg To Be Connected	S	S	S	S	S	S	This IE indicates the leg to which the Connect IF applies.
							The gsmSCF shall include this IE if:
							- The CSA has more than one call segment, or
							- The CSA has a single call segment, which contains:
							  - one leg, which is not leg 2; or
							  - two legs, which are not leg 1 and leg 2, or
							  - more than two legs.
							Otherwise this IE may be present or absent as required by the service logic.
							This IE shall not indicate leg1.

Redirecting Party ID	O	O	O	O	O	O	This IE indicates the directory number the call was redirected from.
Redirection Information	O	O	O	O	O	O	This IE contains forwarding related information, such as redirecting counter.

Information element name	MO	MF	MT	VT	NC	NP	Description
Suppression Of Announcements	-	-	O	O	O	O	This IE indicates that announcements or tones generated as a result of unsuccessful call establishment shall be suppressed.
Service Interaction Indicators Two	O	O	O	O	O	O	This IE is described in a table below.
CUG Interlock Code	O	O	O	O	O	O	See 3GPP TS 23.085 [**Error! Reference source not found.**] for details of this IE.
Outgoing Access Indicator	O	O	O	O	O	O	See 3GPP TS 23.085 [**Error! Reference source not found.**] for details of this IE.
Basic OR interrogation requested	O	O	-	-	O	O	This IE indicates that a Basic Optimal Routeing interrogation is requested for the call. If Basic Optimal Routeing is successful, this will be reported to the gsmSCF in the Answer event report. This IE shall be ignored if the VMSC associated with the gsmSSF does not support Basic Optimal Routeing. This IE shall be ignored if it is received in a gsmSSF which is handling the MF call case in the GMSC function of the forwarding subscriber.

Carrier contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Carrier Identification Code	M	M	M	M	M	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	M	M	M	M	M	This IE indicates the way the carrier was selected e.g.: - 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	O	O	O	O	O	O	This IE is described in a table below.
Backward Service Interaction Indicator	O	O	O	O	-	-	This IE is described in a table below.
HOLD Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the invocation of HOLD by the CAMEL subscriber.
CW Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the invocation of CW for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the call leg to become part of an ECT call initiated by the CAMEL subscriber.
Connected number treatment indicator	O	O	O	O	-	-	This IE indicates the treatment of the connected number at the originating side.
Non-CUG Call	O	O	O	O	O	O	This IE indicates that no parameters for CUG should be used for the call (i.e. the call should be a non-CUG call). Shall be absent if one or more of CUG Interlock Code and Outgoing Access Indicator is present in the IF.

Forward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	O	O	O	O	O	-	This IE allows the gsmSCF to disallow the call leg to become part of a MPTY call initiated by the CAMEL subscriber.

Information element name	MO	MF	MT	VT	NC	NP	Description
Call Diversion Treatment Indicator	O	O	O	O	O	-	This IE allows the gsmSCF to disallow the Call Forwarding or Call Deflection supplementary services for this call.
Calling Party Restriction Indicator	O	-O	-O	-O	O	-O	This IE allows the gsmSCF to mark the CLI as Restricted for the call. ~~NP only applicable within an MO or NC case.~~

Backward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	O	O	O	O	-	O	This IE allows the gsmSCF to disallow the call leg to become part of a MPTY call initiated by the calling subscriber.
Call Completion Treatment Indicator	O	O	O	O	-	O	This IE allows the gsmSCF to disallow a CCBS request to be made for the call. See also 3GPP TS 23.093 [**Error! Reference source not found.**] for description.

-- Next Modified Section --

4.6.2.9 Continue With Argument

4.6.2.9.1 Description

This IF requests the gsmSSF to continue the call processing with modified information at the DP at which it previously suspended call processing to await gsmSCF instructions or to continue call processing after a Call Party Handling IF was received. The gsmSSF completes DP processing if necessary, and continues basic call processing (i.e. proceeds to the next point in call in the BCSM) with the modified call setup information as received from the gsmSCF.

This IF may also be used to continue call processing after an Initiate Call Attempt IF and Call Party Handling IF.

The gsmSCF can send modified call information at DP Collected_Info and at DP Analysed_Info, as listed in the MO and MF columns in subclause 4.6.2.9.2.

The gsmSCF can send modified call information at DP Termination_Attempt_Authorised, as listed in the MT and VT columns in subclause 4.6.2.9.2.

The gsmSCF can send modified call information immediately after sending an Initiate Call Attempt IF, as listed in the NC and NP columns in subclause 4.6.2.9.2.

In all other cases, Continue With Argument shall contain no other IE than Leg ID or Call Segment ID.

When this IF is used to resume the processing of an Initiate Call Attempt IF or a Call Party Handling IF, then a Call Segment ID shall be included and Leg ID shall be absent.

When this IF is used to resume processing after an EDP-R or TDP-R, then a Leg ID shall be included and Call Segment ID shall be absent. The following exception exists: if this IF is used to resume processing after an EDP-R or TDP-R in one of the following scenarios:

- the CSA has one Call Segment only, which includes leg 1 only;
- the CSA has one Call Segment only, which includes leg 2 only;
- the CSA has one Call Segment only, which includes leg 1 and leg 2, but no other legs;

then, the Leg ID may be present or absent, as required by the Service Logic.

4.6.2.9.2 Information Elements

Information element name	MO	MF	MT	VT	NC	NP	Description
Alerting Pattern	-	-	O	O	O	-	This IE indicates the kind of Alerting Pattern to be applied.
Calling Partys Category	O	O	O	O	O	O	This IE indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
Generic Number	O	O	O	O	O	O	This IE contains the generic number. It is used to convey the additional calling party number, which e.g. could be used to modify the calling line ID presented to the called user.
Carrier	O	O	O	O	O	O	This IE is described in a table below.
NA Originating Line Information	O	O	O	O	O	O	This IE identifies the type of number in the Charge Number (e.g. subscriber versus PLMN operator number).
Charge Number	O	O	O	O	O	O	This IE identifies the chargeable number for the usage of a North American carrier.
Suppression Of Announcements	-	-	O	O	O	O	This IE indicates that announcements or tones generated as a result of unsuccessful call establishment shall be suppressed.
Service Interaction Indicators Two	O	O	O	O	O	O	This IE is described in a table below.

Information element name	MO	MF	MT	VT	NC	NP	Description
CUG Interlock Code	O	O	-	-	O	O	See 3GPP TS 23.085 [**Error! Reference source not found.**] for details of this IE.
Outgoing Access Indicator	O	O	-	-	O	O	See 3GPP TS 23.085 [**Error! Reference source not found.**] for details of this IE.
Basic OR Interrogation Requested	O	O	-	-	O	O,S	This IE indicates that a Basic Optimal Routeing interrogation is requested for the call. If Basic Optimal Routeing is successful, this will be reported to the gsmSCF in the Answer event report. This IE shall be ignored if the VMSC associated with the gsmSSF does not support Basic Optimal Routeing. This IE shall be ignored if it is received in a gsmSSF which is handling the MF call case in the GMSC function of the forwarding subscriber. For an NP call leg, this IE can only be included if the original call was an MO or NC call.
Leg ID	O,E	O,E	O,E	O,E	O,E	O,E	This IE indicates the party for which call processing is to be resumed.
Call Segment ID	O,E	O,E	O,E	O,E	O,E	O,E	This IE indicates the call segment for which call processing is to be resumed.
Suppress O-CSI	-	-	O	O	-	-	This IE indicates that O-CSI shall be suppressed for the forwarding leg or deflecting leg.
Suppress D-CSI	-	-	-	-	-	O	This IE indicates that D-CSI shall be suppressed for the new call leg. This IE can only be included if this IE is sent to the VMSC of the CAMEL subscriber.
Suppress N-CSI	-	-	-	-	-	O	This IE indicates that N-CSI shall be suppressed for the new call leg. This IE can only be included if this IE is sent to the VMSC of the CAMEL subscriber.
Suppress Outgoing Call Barring	-	-	-	-	-	O	This IE indicates that Outgoing Call Barrings for the created leg shall be suppressed. This IE can only be included if the Initiate Call Attempt IF is sent to the VMSC of the CAMEL subscriber.

Carrier contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Carrier Identification Code	M	M	M	M	M	M	This IE uniquely identifies a North American long distance carrier.
Carrier Selection Information	M	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	O	O	O	O	O	O	This IE is described in a table below.
Backward Service Interaction Indicator	O	O	O	O	-	-	This IE is described in a table below.
HOLD Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the invocation of HOLD by the CAMEL subscriber.
CW Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the invocation of CW for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	O	-	-	O	-	-	This IE allows the gsmSCF to disallow the

Information element name	MO	MF	MT	VT	NC	NP	Description
							call leg to become part of an ECT call initiated by the CAMEL subscriber.
Connected Number Treatment Indicator	O	O	O	O	-	-	This IE indicates the treatment of the connected number at the originating side.
Non-CUG Call	O	O	-	-	-	O	This IE indicates that no parameters for CUG should be used for the call (i.e. the call should be a non-CUG call). This IE shall be absent if one or more of CUG Interlock Code and Outgoing Access Indicator are present in the IF.

Forward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	O	O	O	O	O	O	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	O	O	O	O	O	O	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection supplementary services.
Calling Party Restriction Indicator	O	~~-~~O	~~-~~O	~~-~~O	~~-~~O	O	This IE allows the gsmSCF to mark the CLI as Restricted for the call.~~This IE indicates whether the CLI shall be marked as Restricted by CAMEL action for the call. For an NP case, this IE can only be included if the original call was an MO call.~~

Backward Service Interaction Indicator contains the following information elements:

Information element name	MO	MF	MT	VT	NC	NP	Description
Conference Treatment Indicator	O	O	O	O	-	-	This IE indicates if the call leg can become part of a MPTY call initiated by the calling subscriber.
Call Completion Treatment Indicator	O	O	O	O	-	-	This IE indicates whether a CCBS request can be made for the call. See also 3GPP TS 23.093 [**Error! Reference source not found.**] for description.

3GPP TSG CN WG2 Meeting #31 **N2-030583**
Bangkok, Thailand, 27th – 31st Oct 2003

CR-Form-v7

CHANGE REQUEST

⌘ **29.078** **CR** **338** ⌘ **rev** **2** ⌘ 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:	⌘	More call related CAPv4 extensions for future releases
Source:	⌘	Nokia
Work item code:	⌘	CAMEL4
Date:	⌘	30.10.2003
Category:	⌘	**F (essential correction)**
Release:	⌘	Rel-5

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

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

Reason for change:	⌘	CAMEL4 may be enhanced in future 3GPP releases without creating new CAMEL phase. Therefore, the CAPv4 shall have enough extensibility for Rel-6 and onwards. Having ellipses in proper places changes will be backward compatible. Especially, RRB and ERB operations shall be more extensible.
Summary of change:	⌘	A. Some of call related datatypes have been added with ellipsis (…). The recipient will ignore unrecognised parameters after ellipsis. B. Some constants have been increased. C. Enumerated datatypes have been added with spare values and description how to ignore. D. Choice type can not have ellipsis, in those cases a new data type has been added. The new type is then a new choice.
Consequences if not approved:	⌘	Impossible to introduce any enhancements to call related CAPv4 messages in future releases. We have one Rel-6 example already, ChangeOfPosition EDP. That EDP does not need this CR.

Clauses affected:	⌘	5.2, 5.5

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

⌘

Other comments:	⌘	The following operation and parameters are intentionally unchanged but can be discussed: - ReleaseCallArg

	- CancelArg - EntityReleasedArg - VariablePart - CollecedDigits - ElapsedTime - GapTreatment, GapCriteria, CompoundCriteria

-- First modified section --

5 Common CAP Types

5.1 Data types

```
Burst ::= SEQUENCE {
    numberOfBursts                  [0] INTEGER (1..3)  DEFAULT 1,
    burstInterval                   [1] INTEGER (1..20) DEFAULT 2,
    numberOfTonesInBurst            [2] INTEGER (1..3)  DEFAULT 3,
    toneDuration                    [3] INTEGER (1..20) DEFAULT 2,
    toneInterval                    [4] INTEGER (1..20) DEFAULT 2,
    ...
    }
-- burstInterval, toneDurartion and toneInterval are measured in 100 millisecond units

BurstList ::= SEQUENCE {
    warningPeriod                   [0] INTEGER (1..1200) DEFAULT 30,
    bursts                          [1] Burst,
    ...
    }
-- warningPeriod is measured in 1 second units.


CallResult {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE(
    bound.&minCallResultLength .. bound.&maxCallResultLength))
    (CONSTRAINED BY {-- shall be the result of the BER-encoded value of type -
    CAMEL-CallResult {bound}})
-- The violation of the UserDefinedConstraint shall be handled as an ASN.1 syntax error.

-- This parameter provides the gsmSCF with the charging related information previously requested
-- using the ApplyCharging operation. This shall include the partyToCharge parameter as
-- received in the related ApplyCharging operation to correlate the result to the request


CAMEL-CallResult {PARAMETERS-BOUND : bound} ::= CHOICE {
    timeDurationChargingResult          [0] SEQUENCE {
        partyToCharge                       [0] ReceivingSideID,
        timeInformation                     [1] TimeInformation,
        legActive                           [2] BOOLEAN DEFAULT TRUE,
        callLegReleasedAtTcpExpiry              [3] NULL                        OPTIONAL,
        extensions                          [4] Extensions {bound}          OPTIONAL,
        aChChargingAddress                  [5] AChChargingAddress {bound}
                                                DEFAULT legID:receivingSideID:leg1,

        ...
        }
    }

CAMEL-FCIBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= CHOICE{
    fCIBCCCAMELsequence1                [0] SEQUENCE {
        freeFormatData                      [0] OCTET STRING (SIZE(
            bound.&minFCIBillingChargingDataLength .. bound.&maxFCIBillingChargingDataLength)),
        partyToCharge                       [1] SendingSideID DEFAULT sendingSideID: leg1,
        appendFreeFormatData                [2] AppendFreeFormatData DEFAULT overwrite,
        ...

        }
    }

CAMEL-FCIGPRSBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= SEQUENCE{
    fCIBCCCAMELsequence1                [0] SEQUENCE {
        freeFormatData                      [0] OCTET STRING (SIZE(
            bound.&minFCIBillingChargingDataLength .. bound.&maxFCIBillingChargingDataLength)),
        pDPID                               [1] PDPID OPTIONAL,
        appendFreeFormatData                [2] AppendFreeFormatData DEFAULT overwrite,
        ...
        }
    }

CAMEL-FCISMSBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= CHOICE{
    fCIBCCCAMELsequence1                [0] SEQUENCE {
        freeFormatData                      [0] OCTET STRING (SIZE(
            bound.&minFCIBillingChargingDataLength .. bound.&maxFCIBillingChargingDataLength)),
        appendFreeFormatData                [1] AppendFreeFormatData DEFAULT overwrite
        }
    }
```

CR editor's note: Don't dare to touch this one.

```
CAMEL-SCIBillingChargingCharacteristics ::= CHOICE {
    aOCBeforeAnswer                     [0] AOCBeforeAnswer,
    aOCAfterAnswer                      [1] AOCSubsequent,
    aOC-extension                       [2] CAMEL-SCIBillingChargingCharacteristicsAlt

    }
```

CR editor's note: Every operation should be extensible at least on main level. This syntactically mandatory, therefore good to have alternative choice here so that something else than AOC-before or AOC-after answer can be sent.

```
CAMEL-SCIBillingChargingCharacteristicsAlt ::= SEQUENCE {
    ...
    }
--  This datatype is for extension in future releases.

CAMEL-SCIGPRSBillingChargingCharacteristics ::= SEQUENCE {
    aOCGPRS                             [0] AOCGPRS,
    pDPID                               [1] PDPID                                   OPTIONAL,
    ...
    }


CollectedDigits ::= SEQUENCE {
    minimumNbOfDigits                   [0] INTEGER (1..30) DEFAULT 1,
    maximumNbOfDigits                   [1] INTEGER (1..30),
    endOfReplyDigit                     [2] OCTET STRING (SIZE (1..2))              OPTIONAL,
    cancelDigit                         [3] OCTET STRING (SIZE (1..2))              OPTIONAL,
    startDigit                          [4] OCTET STRING (SIZE (1..2))              OPTIONAL,
    firstDigitTimeOut                   [5] INTEGER (1..127)                        OPTIONAL,
    interDigitTimeOut                   [6] INTEGER (1..127)                        OPTIONAL,
    errorTreatment                      [7] ErrorTreatment DEFAULT stdErrorAndInfo,
    interruptableAnnInd                 [8] BOOLEAN DEFAULT TRUE,
    voiceInformation                    [9] BOOLEAN DEFAULT FALSE,
    voiceBack                           [10] BOOLEAN DEFAULT FALSE
    }
-- The use of voiceBack and the support of voice recognition via voiceInformation
-- is network operator specific.
-- The endOfReplyDigit, cancelDigit, and startDigit parameters have been
-- designated as OCTET STRING, and are to be encoded as BCD, one digit per octet
-- only, contained in the four least significant bits of each OCTET. The following encoding shall
-- be applied for the non-decimal characters:
-- 1011 (*), 1100 (#).
-- The usage is service dependent.
-- firstDigitTimeOut and interDigitTimeOut are measured in seconds.

CollectedInfo ::= CHOICE {
    collectedDigits                     [0] CollectedDigits
    }


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 {
    ...
    }
--  This datatype is for extension in future releases.

DpSpecificInfoAlt {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    ...
    }
--  This datatype is for extension in future releases.

EventSpecificInformationBCSM {PARAMETERS-BOUND : bound} ::= CHOICE {
    routeSelectFailureSpecificInfo      [2] SEQUENCE {
        failureCause                        [0] Cause {bound}                       OPTIONAL,
        ...
        },
    oCalledPartyBusySpecificInfo        [3] SEQUENCE {
        busyCause                           [0] Cause {bound}                       OPTIONAL,
        ...
```

```
        },
    oNoAnswerSpecificInfo               [4] SEQUENCE {
        -- no specific info defined --
        ...
        },
    oAnswerSpecificInfo                 [5] SEQUENCE {
        destinationAddress                  [50] CalledPartyNumber {bound}          OPTIONAL,
        or-Call                             [51] NULL                               OPTIONAL,
        forwardedCall                       [52] NULL                               OPTIONAL,
        chargeIndicator                     [53] ChargeIndicator                    OPTIONAL,
        ...
        },
    oMidCallSpecificInfo                [6] SEQUENCE {
        midCallEvents                       [1] CHOICE {
            dTMFDigitsCompleted                 [3] Digits {bound},
            dTMFDigitsTimeOut                   [4] Digits {bound}
            }                                                                       OPTIONAL,
        ...
        },
    oDisconnectSpecificInfo             [7] SEQUENCE {
        releaseCause                        [0] Cause {bound}                       OPTIONAL,
        ...
        },
    tBusySpecificInfo                   [8] SEQUENCE {
        busyCause                           [0] Cause {bound}                       OPTIONAL,
        callForwarded                       [50] NULL                               OPTIONAL,
        routeNotPermitted                   [51] NULL                               OPTIONAL,
        forwardingDestinationNumber         [52] CalledPartyNumber {bound}          OPTIONAL,
        ...
        },
    tNoAnswerSpecificInfo               [9] SEQUENCE {
        callForwarded                       [50] NULL                               OPTIONAL,
        forwardingDestinationNumber         [52] CalledPartyNumber {bound}          OPTIONAL,
        ...
        },
    tAnswerSpecificInfo                 [10] SEQUENCE {
        destinationAddress                  [50] CalledPartyNumber {bound}          OPTIONAL,
        or-Call                             [51] NULL                               OPTIONAL,
        forwardedCall                       [52] NULL                               OPTIONAL,
        chargeIndicator                     [53] ChargeIndicator                    OPTIONAL,
        ...
        },
    tMidCallSpecificInfo                [11] SEQUENCE {
        midCallEvents                       [1] CHOICE {
            dTMFDigitsCompleted                 [3] Digits {bound},
            dTMFDigitsTimeOut                   [4] Digits {bound}
            }                                                                       OPTIONAL,
        ...
        },
    tDisconnectSpecificInfo             [12] SEQUENCE {
        releaseCause                        [0] Cause {bound}                       OPTIONAL,
        ...
        },
    oTermSeizedSpecificInfo             [13] SEQUENCE {
        locationInformation                 [50] LocationInformation                OPTIONAL,
        ...
        },
    callAcceptedSpecificInfo            [20] SEQUENCE {
        locationInformation                 [50] LocationInformation                OPTIONAL,
        ...
        },
    oAbandonSpecificInfo                [21] SEQUENCE {
        routeNotPermitted                   [50] NULL                               OPTIONAL,
        ...
        },
    oChangeOfPositionSpecificInfo       [50] SEQUENCE {
        locationInformation                 [50] LocationInformation                OPTIONAL,
        ...
        },
    tChangeOfPositionSpecificInfo       [51] SEQUENCE {
        locationInformation                 [50] LocationInformation                OPTIONAL,
        ...
        },
    dpSpecificInfoAlt                   [52] DpSpecificInfoAlt {bound}              OPTIONAL
```

CR editor's note: No error handling needed, SCP should not receive information on non-armed EDPs.

```
    }
-- Indicates the call related information specific to the event.


EventTypeBCSM ::= ENUMERATED {
    collectedInfo                       (2),
    analyzedInformation                 (3),
    routeSelectFailure                  (4),
    oCalledPartyBusy                    (5),
    oNoAnswer                           (6),
```

```
    oAnswer                          (7),
    oMidCall                         (8),
    oDisconnect                      (9),
    oAbandon                         (10),
    termAttemptAuthorized            (12),
    tBusy                            (13),
    tNoAnswer                        (14),
    tAnswer                          (15),
    tMidCall                         (16),
    tDisconnect                      (17),
    tAbandon                         (18),
    oTermSeized                      (19),
    callAccepted                     (27),
    oChangeOfPosition                (50),
    tChangeOfPosition                (51),
    ...

    }
-- Indicates the BCSM detection point event.
-- Values collectedInfo, analyzedInformation and termAttemptAuthorized may be used
-- for TDPs only.
--  Exception handling: reception of an unrecognized value shall be treated like
--  reception of no detection point.


FCIBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE(
    bound.&minFCIBillingChargingLength .. bound.&maxFCIBillingChargingLength))
    (CONSTRAINED BY {-- shall be the result of the BER-encoded value of type --
    CAMEL-FCIBillingChargingCharacteristics {bound}})
-- This parameter indicates the billing and/or charging characteristics.
-- The violation of the UserDefinedConstraint shall be handled as an ASN.1 syntax error.

GapCriteria {PARAMETERS-BOUND : bound}::= CHOICE {
    basicGapCriteria                 BasicGapCriteria {bound},
    compoundGapCriteria              CompoundCriteria {bound}
    }

MidCallControlInfo ::= SEQUENCE {
    minimumNumberOfDigits            [0] INTEGER (1..30) DEFAULT 1,
    maximumNumberOfDigits            [1] INTEGER (1..30) DEFAULT 30,
    endOfReplyDigit                  [2] OCTET STRING (SIZE (1..2))          OPTIONAL,
    cancelDigit                      [3] OCTET STRING (SIZE (1..2))          OPTIONAL,
    startDigit                       [4] OCTET STRING (SIZE (1..2))          OPTIONAL,
    interDigitTimeout                [6] INTEGER (1..127) DEFAULT 10,
    ...
    }
--
-- - minimumNumberOfDigits          specifies the minumum number of digits that shall be collected
-- - maximumNumberOfDigits          specifies the maximum number of digits that shall be collected
-- - endOfReplyDigit                specifies the digit string that denotes the end of the digits
--                                  to be collected.
-- - cancelDigit                    specifies the digit string that indicates that the input shall
--                                  be erased and digit collection shall start afresh.
-- - startDigit                     specifies the digit string that denotes the start of the digits
--                                  to be collected.
-- - interDigitTimeout              specifies the maximum duration in seconds between successive
--                                  digits.
--
-- endOfReplyDigit, cancelDigit and startDigit shall contain digits in the range 0..9, '*' and '#'
-- only. The collected digits string, reported to the gsmSCF, shall include the endOfReplyDigit and
-- the startDigit, if present.
--
-- endOfReplyDigit, cancelDigit and startDigit shall be encoded as BCD digits. Each octet shall
-- contain one BCD digit, in the 4 least significant bits of each octet.
-- The following encoding shall be used for the over-decadic digits: 1011 (*), 1100 (#).


RequestedInformationTypeList ::= SEQUENCE SIZE (1.. numOfInfoItems) OF RequestedInformationType


END
```

-- Next modified section --

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,
    &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
```

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    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-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
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CR editor's note: 225 octets have space for enhancements already. 225 octets fit into one SCCP UDT message.

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    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
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    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~~225
    MINIMUM-FOR-TIME-AND-TIMEZONE               8
    MAXIMUM-FOR-TIME-AND-TIMEZONE               8
    NUM-OF-BCSM-EVENT                           ~~10~~30
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CR editor's note: We have 10 DP numbers for T-BCSM already in Rel-5.

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    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
```