3GPP TSG CN Plenary Meeting #15 **Tdoc NP-020056**
Korea, Jeju Island, 6th – 8th March 2002

Source: TSG CN WG2

Title: CR on R99 Work Item CAMEL3, Pack 3

Agenda item: 7.2

Document for: APPROVAL

Introduction:

This document contains 10 CRs on R99 WI CAMEL3 (5 CRs for R99 and the 5 mirror CRs for Rel-4). These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #15 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.078	233	1	N2-020181	R99	Error handling for sequential TCAP Operation components	F	3.10.0
29.078	241		N2-020212	Rel-4	Error handling for sequential TCAP Operation components	A	4.3.0
29.078	237	1	N2-020190	R99	Mapping of CUG information from CAP to ISUP	F	3.10.0
29.078	238	1	N2-020191	Rel-4	Mapping of CUG information from CAP to ISUP	A	4.3.0
29.078	234	3	N2-020214	R99	Correction to GPRS operation error handling	F	3.10.0
29.078	242		N2-020215	Rel-4	Correction to GPRS operation error handling	A	4.3.0
29.078	232	2	N2-020218	R99	Clarification on national values of the Called Party Number's Nature of Address field	F	3.10.0
29.078	243		N2-020219	Rel-4	Clarification on national values of the Called Party Number's Nature of Address field	A	4.3.0
23.078	373	2	N2-020216	R99	Clarification on national values of the Called Party Number's Nature of Address field	F	3.11.0
23.078	393		N2-020217	Rel-4	Clarification on national values of the Called Party Number's Nature of Address field	A	4.3.0

3GPP TSG CN WG2 Meeting #22 ***N2-020181***
Sophia Antipolis, France, 28th January – 2nd February 2002 (revision of N2-020030)

CHANGE REQUEST

⌘ **29.078** **CR** **233** ⌘ **rev** **1** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Error handling for sequential TCAP Operation components
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	30 January 2002
Category:	⌘	F
Release:	⌘	R99

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

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

Reason for change: ⌘

When the gsmSCF needs to send a set of Operations to the gsmSSF, smsSSF or gprsSSF, it may combine these Operation components into a single TC Message. A few examples are:

- RequestReportBCSMEvent + Continue to gsmSSF
- RequestReportSMSEvent + FurnishChargingInformationSMS + ConnectSMS to smsSSF
- RequestReportGPRSEvent + ApplyChargingGPRS + ContinueGPRS to gprsSSF

TC receives these operation components and passes these individually on to the TC-User.

If, however, the processing of e.g. RequestReportBCSMEvent fails, then the remaining Operations carried in the same TC Message should not be processed by the TC-User.

This gsmSSF behaviour is specified in CS1. It is however not specified in CAP. The body part of the present CR contains a copy of the relevant section from CS1.

This behaviour is very important. If the gsmSSF would not behave as described above, the result may e.g. be that a CAP Continue would be executed without events being armed. The gsmSSF would close the TC dialogue and the Service Logic would loose control of the call.

The present CR proposes therefore that this behaviour be specified for CAP.

It is especially relevant for gprsSSF and smsSSF. These functional entities are new in CAMEL Phase 3. Implementations of these entities may not have automatically inherited this functionality from CS1 implementation.

Summary of change:	⌘	Specify SSF error handling for sequential Operation execution.
Consequences if not approved:	⌘	- Inconsistent behaviour of gsmSSFs from different vendors; - Inconsistent behaviour between gsmSSF, smsSSF and gprsSSF; - The gsmSCF may unintentionally loose control of a call / short message / GPRS Session / PDP Context if one Operation in a sequence of Operations fails.

Clauses affected:	⌘	12.1.1.2		
Other specs Affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** For Information ***

Extract from ETS 300 374-1 (ETSI CS1)

One or a sequence of components received in one or more TCAP messages may include a single operation or multiple operations, and is processed as follows:

- process the operations in the order in which they are received;
- each operation causes a state transition independent of whether or not a single operation or multiple operations are received in a message;
- the SSF examines subsequent operations in the sequence. As long as sequential execution of these operations would leave the FSM in the same state, it will execute them (e.g., RequestReportBCSMEvent). If a subsequent operation causes a transition out of the state then the following operations should be buffered until the current operation has been executed. In all other cases, await an event that would cause a transition out of the current state (such an event would be the completion of operation being executed), or reception of an external event.

EXAMPLE: The SSF receives the operations FurnishChargingInformation, ConnectToResource, and PlayAnnouncement in a component sequence inside a single TCAP message. Upon receipt of this message, these operations are executed up to and including ConnectToResource while the SSF is in the **Waiting for Instruction** state. As the ConnectToResource operation is executed (and when, or after the FurnishChargingInformation operation has been completed), the SSF FSM will transition to the **Waiting for End of User Interaction** state. The PlayAnnouncement operation is relayed to the SRF while the SSF is in **Waiting for End of User Interaction** state.

- if there is an error in processing one of the operations in the sequence, the SSF FSM processes the error (see below) and discards all remaining operations in the sequence;
- if an operation is not understood or is out of context (i.e. violates the SACF rules defined by the SSF FSM) as described above, the SSF FSM processes the error according to the rules given in subclause 10.2 (using TC-U-REJECT or the operation error UnexpectedComponentSequence).

*** First Modification ***

12.1.1.2 Abnormal procedures

This subclause describes the procedures and TC primitives that shall be used for reporting abnormal situations between AEs. The error cases are defined in clause 10.

The following primitives shall be used to report abnormal situations:

- operation errors, as defined in the CAP, are reported with TC-U-ERROR request primitive.
- rejection of a TC component by the TC-user shall be reported with TC-U-REJECT request primitive.
- when the FE detecting error or rejecting operation decides the termination of TC dialogue, TC-END request primitive (basic) with error or reject can be used for the termination of TC dialogue.
- when the gsmSSF or the gsmSRF detecting error or rejecting operation recognizes the possibility to continue dialogue, TC-CONTINUE request primitive with error or reject can be used for the continuation of TC dialogue.
- a dialogue shall be aborted by the TC-user with a TC-U-ABORT request primitive.
- on expiration of application timer TSSF or TSRF, dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason, regardless of TC dialogue is established or not.

For abnormal situations detected by TC the same rules shall apply for reception of TC-R-REJECT indication as for transmission of TC-U-REJECT request and for transmission of TC-P-ABORT indication as for transmission of TC-U-ABORT request primitive.

The following rules shall be applied to terminate the TC dialogue under abnormal situations:

- in the case that abort condition is detected and TC dialogue is established, TC dialogue is terminated by TC-U-ABORT primitive with an Abort reason.
- in the case that abort condition is detected and TC dialogue is not established, TC dialogue is locally terminated by TC-U-ABORT primitive. (in the case such as application time out).

In error situations prearranged end shall not be used to terminate the TC dialogue. In case any AE encounters an error situation the peer entity shall be explicitly notified of the error, if possible. If from any entity's point of view the error encountered requires the relationship to be ended, it shall close the dialogue via a TC-END request primitive with basic end or via a TC-U-ABORT request primitive, depending on whether any pending ERROR or REJECT component is to be sent or not.

In case an entity receives a TC-END indication primitive and after all components have been considered, the FSM is not in a state to terminate the relationship, an appropriate internal error should be provided.

In cases when a dialogue needs to be closed by the initiating entity before its establishment has been completed (before the first TC indication primitive to the TC-BEGIN request primitive has been received from the responding entity), the TC-user shall issue a TC-END request primitive with prearranged end or a TC-U-ABORT request primitive. The result of these primitives will be only local, any subsequent TC indication received for this dialogue will be handled according to the abnormal procedures as specified in ETS 300 287-1 [6]).

~~When multiple Operation components are received in a single TC Message and there is an error in processing one of the operations in the sequence, then the SSF FSM shall process the error and shall discard all remaining operations in the sequence.~~

When the gsmSSF, gprsSSF or smsSSF receives multiple Operation components in a single TC Message and there is an error in the processing of one of these Operations, then the gsmSSF FSM, gprsSSF FSM or smsSSF FSM shall process the error and shall discard all Operation components in that TC Message of which the processing has not yet started.

*** End of Document ***

3GPP TSG CN WG2 Meeting #22 ***N2-020219***
Sophia Antipolis, France, 28th January – 2nd February 2002

CR-Form-v5

CHANGE REQUEST

⌘ **29.078** **CR** **243** ⌘ **rev** **-** ⌘ Current version: 4.3.0 ⌘

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

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

Title:	⌘	Clarification on national values of the Called Party Number's Nature of Address field
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	2nd of January 2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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

Reason for change: ⌘

The CAMEL3 introduced new trigger detection points (DP3 Analysed_Information and Route_Select_Failure). In these DPs the MSC/SSP has analysed the Called Party Number (CdPN) and the Nature Of Address (NoA) may be different to the one sent from the mobile station due to Connect operation, or due to digit analysis.

Also, the Destination Address parameter of EventReportBCSM operation at O/T_Answer DP may contain a CdPN with a national-specific NoA.

Thirdly, the Connect operation may contain a CdPN with a national-specific NoA.

Especially in the US markets the ANSI ISUP (ANSI T1.113) uses nationally specified NoA values for the operator-assisted calls.
Currently it is not specified how the CAP interface works in the following cases:

- An US MSC triggers to US SCP in a 01+, 0- or 0+ call.
- An US MSC triggers to non-US SCP when an in-bound roamer dials operator number. It up to service logic if it allows the call to continue.
- An US SCP should be able to route a mobile call to an operator by using connect (when the MSC/SSP is also in US).

Also the fact the Called Party Number of CAP is referencing to an ETSI specification ETS300356-1 may cause confusion in the non-European markets.

The American user diallings CAC+0, 0 and 00 must be supported by CAMEL. In these cases the number length is zero after the analysis and the ANSI ISUP CdPN.NoA='no number present, operator requested' (1110100). The non-American SCPs shall be aware of this kind of possibility. Same with cut-through calls. Currently this is not possible.

Summary of change: ⌘

- 23.078 warning for the service logic designers about nationally specific NoA values.
- The CAP-Connect operation shall not contain country-specific NoA values if the SCP is not sure that MSC/SSP can understand & accept

		these values.
Consequences if not approved:	⌘	• Incompatibility, especially in the US markets.

Clauses affected:	⌘				
Other specs affected:	⌘	X	Other core specifications	⌘	23.078-CR373 (R99), 29.078-CR232 (R99), 23.078-CR393 (Rel-4), 29.078-CR243 (Rel-4)
			Test specifications		
			O&M Specifications		
Other comments:	⌘	• Currently, the contributor does not see any reason to support nationally specific NoA values in the ETC or AssistRequestIntructions operation. The user interaction is not given by the operator. • The CAMEL4 ICA does not need these values in Nokia's understanding. • The national values are not significant in MT calls, since the MSISDN shall be either in international, national or subscriber number format. This CR tries primarily to solve the US specific problems.			

****** For Your Information ******

Copy from ETS300356-1

g2 .A) Originating address length
The values are 0, 3-20.
g2. B) Destination address length
The values are 0, 3-20.
g2 .C)Originating address/Destination address
The originating address (destination address) field is not present if the originating address length (destination address length) is set to zero.

The format of the Originating and Destination address fields is shown in Figure 77.3.

8 7 6 5 4 3 2 1
1
O/E Nature of address indicator
2 INN
Ind.
Numbering plan Ind. Spare
3 2nd address signal 1st address signal
.
.
M Filler (if necessary) nth address signal

Figure 77.3/Q.763: Content of the Originating address (Destination address) field

The following codes are used in the Originating address and the Destination address fields:
Odd/even indicator (O/E): as subclause 3.9 a)
Nature of address indicator

0000 0 0 0 spare
0000 0 0 1 reserved for subscriber number
0000 0 1 0 unknown (national use)
0000 0 1 1 national (significant) number
0000 1 0 0 international number
000 0 01 0 1 network-specific number (national use)
0000 1 1 0 network routeing number in national (significant) number format (national use)

0000 1 1 1 network routeing number in network specific number format (national use)
0001 0 0 0 reserved for network routeing number concatenated with directory number

0001 0 0 1 spare
to _
1101 1 1 1

1110 0 0 0 reserved for national use
to _
1111 1 1 0

1111 1 1 1 spare

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

5 Common CAP Types

5.1 Data types

```
-- The Definition of Common Data Types follows


...

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,
            ...
            },
    oDisconnectSpecificInfo         [7] SEQUENCE {
            releaseCause                [0] Cause {bound}           OPTIONAL,
            ...
            },
    tBusySpecificInfo               [8] SEQUENCE {
            busyCause                   [0] Cause {bound}           OPTIONAL,
            callForwarded               [50] NULL                   OPTIONAL,
            routeNotPermitted           [51] NULL                   OPTIONAL,
            ...
            },
    tNoAnswerSpecificInfo           [9] SEQUENCE {
            callForwarded               [50] NULL                   OPTIONAL,
            ...
            },
    tAnswerSpecificInfo             [10] SEQUENCE {
            destinationAddress          [50] CalledPartyNumber {bound}  OPTIONAL,
            or-Call                     [51] NULL                   OPTIONAL,
            forwardedCall               [52] NULL                   OPTIONAL,
            ...
            },
    tDisconnectSpecificInfo         [12] SEQUENCE {
            releaseCause                [0] Cause {bound}           OPTIONAL,
            ...
            }
    }
-- Indicates the call related information specific to the event.


...

CalledPartyNumber {PARAMETERS-BOUND : bound}    ::= OCTET STRING (SIZE(
    bound.&minCalledPartyNumberLength .. bound.&maxCalledPartyNumberLength))
-- Indicates the Called Party Number. Refer to ETS 300 356-1 [8] for encoding.

-- A CalledPartyNumber may contain national-specific values
-- of the Nature Of Address indicator.
-- The filling-in of the national-specific Nature Of Address indicator values shall be done
-- according to the national ISUP of the gsmSSF country, e.g. ANSI T1.113-1995 [53].
-- In terms of ETS 300 356-1 [8],
-- the Destination Address Field is not present if the destination address length is set to zero.
-- This is the case e.g. when the ANSI ISUP Nature Of Address indicator indicates no number present,
-- operator requested (1110100) or no number present, cut-through call to carrier (1110101).
-- See also see 3GPP TS 23.078 [42].
```

```
...

DestinationRoutingAddress {PARAMETERS-BOUND : bound} ::= SEQUENCE SIZE(1) OF
                                                    CalledPartyNumber {bound}
-- Indicates the Called Party Number.
```

****** NON-MODIFIED SECTION ******

```
ConnectArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    destinationRoutingAddress       [0] DestinationRoutingAddress {bound},
    alertingPattern                 [1] AlertingPattern                     OPTIONAL,
    originalCalledPartyID           [6] OriginalCalledPartyID {bound}       OPTIONAL,
    extensions                      [10] Extensions {bound}                 OPTIONAL,
    carrier                         [11] Carrier {bound}                    OPTIONAL,
    callingPartysCategory           [28] CallingPartysCategory              OPTIONAL,
    redirectingPartyID              [29] RedirectingPartyID {bound}         OPTIONAL,
    redirectionInformation          [30] RedirectionInformation             OPTIONAL,
    genericNumbers                  [14] GenericNumbers {bound}             OPTIONAL,
    serviceInteractionIndicatorsTwo [15] ServiceInteractionIndicatorsTwo    OPTIONAL,
    chargeNumber                    [19] ChargeNumber {bound}               OPTIONAL,
    cug-Interlock                   [31] CUG-Interlock                      OPTIONAL,
    cug-OutgoingAccess              [32] NULL                               OPTIONAL,
    suppressionOfAnnouncement       [55] SuppressionOfAnnouncement          OPTIONAL,
    oCSIApplicable                  [56] OCSIApplicable                     OPTIONAL,
    naOliInfo                       [57] NAOliInfo                          OPTIONAL,
    ...
    }
-- na-Info is included at the discretion of the gsmSCF operator.


...

InitialDPArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    serviceKey                      [0] ServiceKey  ,
    calledPartyNumber               [2] CalledPartyNumber {bound}           OPTIONAL,
    callingPartyNumber              [3] CallingPartyNumber {bound}          OPTIONAL,
    callingPartysCategory           [5] CallingPartysCategory               OPTIONAL,
    cGEncountered                   [7] CGEncountered                       OPTIONAL,
    iPSSPCapabilities               [8] IPSSPCapabilities {bound}           OPTIONAL,
    locationNumber                  [10] LocationNumber {bound}             OPTIONAL,
    originalCalledPartyID           [12] OriginalCalledPartyID {bound}      OPTIONAL,
    extensions                      [15] Extensions {bound}         OPTIONAL,
    highLayerCompatibility          [23] HighLayerCompatibility OPTIONAL,
    additionalCallingPartyNumber    [25] AdditionalCallingPartyNumber {bound}   OPTIONAL,
    bearerCapability                [27] BearerCapability {bound}           OPTIONAL,
    eventTypeBCSM                   [28] EventTypeBCSM                      OPTIONAL,
    redirectingPartyID              [29] RedirectingPartyID {bound}         OPTIONAL,
    redirectionInformation          [30] RedirectionInformation             OPTIONAL,
    cause                           [17] Cause {bound}                      OPTIONAL,
    serviceInteractionIndicatorsTwo [32] ServiceInteractionIndicatorsTwo    OPTIONAL,
    carrier                         [37] Carrier {bound}                    OPTIONAL,
    cug-Index                       [45] CUG-Index                          OPTIONAL,
    cug-Interlock                   [46] CUG-Interlock                      OPTIONAL,
    cug-OutgoingAccess              [47] NULL                               OPTIONAL,
    iMSI                            [50] IMSI                               OPTIONAL,
    subscriberState                 [51] SubscriberState                    OPTIONAL,
    locationInformation             [52] LocationInformation                OPTIONAL,
    ext-basicServiceCode            [53] Ext-BasicServiceCode               OPTIONAL,
    callReferenceNumber             [54] CallReferenceNumber                OPTIONAL,
    mscAddress                      [55] ISDN-AddressString                 OPTIONAL,
    calledPartyBCDNumber            [56] CalledPartyBCDNumber {bound}       OPTIONAL,
    timeAndTimezone                 [57] TimeAndTimezone {bound}            OPTIONAL,
    gsm-ForwardingPending           [58] NULL                               OPTIONAL,
    initialDPArgExtension           [59] InitialDPArgExtension              OPTIONAL,
    ...
    }
```

****** NEXT MODIFIED SECTION ******

5.5 Classes

```
CAP-classes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-classes(54) version3(2)}

...

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             32
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10


...
```

****** END OF DOCUMENT ******

3GPP TSG CN WG2 Meeting #22 ***N2-020218***
Sophia Antipolis, France, 28th January – 2nd February 2002

CR-Form-v5

CHANGE REQUEST

⌘ **29.078** **CR** **232** ⌘ **rev** **2** ⌘ Current version: 3.10.0 ⌘

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

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

Title:	⌘	Clarification on national values of the Called Party Number's Nature of Address field
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	2nd of January 2002
Category:	⌘	**F (essential correction)**
Release:	⌘	R99

Use one of the following categories:
F *(correction)*
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Reason for change: ⌘

The CAMEL3 introduced new trigger detection points (DP3 Analysed_Information and Route_Select_Failure). In these DPs the MSC/SSP has analysed the Called Party Number (CdPN) and the Nature Of Address (NoA) may be different to the one sent from the mobile station due to Connect operation, or due to digit analysis.

Also, the Destination Address parameter of EventReportBCSM operation at O/T_Answer DP may contain a CdPN with a national-specific NoA.

Thirdly, the Connect operation may contain a CdPN with a national-specific NoA.

Especially in the US markets the ANSI ISUP (ANSI T1.113) uses nationally specified NoA values for the operator-assisted calls.
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Also the fact the Called Party Number of CAP is referencing to an ETSI specification ETS300356-1 may cause confusion in the non-European markets.

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Summary of change: ⌘

- 23.078 warning for the service logic designers about nationally specific NoA values.
- The CAP-Connect operation shall not contain country-specific NoA values if the SCP is not sure that MSC/SSP can understand & accept

		these values.
Consequences if not approved:	⌘	• Incompatibility, especially in the US markets.

Clauses affected:	⌘				
Other specs affected:	⌘	X	Other core specifications	⌘	23.078-CR373
			Test specifications		
			O&M Specifications		
Other comments:	⌘	• Currently, the contributor does not see any reason to support nationally specific NoA values in the ETC or AssistRequestIntructions operation. The user interaction is not given by the operator. • The CAMEL4 ICA does not need these values in Nokia's understanding. • The national values are not significant in MT calls, since the MSISDN shall be either in international, national or subscriber number format. This CR tries primarily to solve the US specific problems.			

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O/E Nature of address indicator
2 INN
Ind.
Numbering plan Ind. Spare
3 2nd address signal 1st address signal
.
.
M Filler (if necessary) nth address signal

Figure 77.3/Q.763: Content of the Originating address (Destination address) field

The following codes are used in the Originating address and the Destination address fields:
Odd/even indicator (O/E): as subclause 3.9 a)
Nature of address indicator

0000 0 0 0 spare
0000 0 0 1 reserved for subscriber number
0000 0 1 0 unknown (national use)
0000 0 1 1 national (significant) number
0000 1 0 0 international number
000 0 01 0 1 network-specific number (national use)
0000 1 1 0 network routeing number in national (significant) number format (national use)

0000 1 1 1 network routeing number in network specific number format (national use)
0001 0 0 0 reserved for network routeing number concatenated with directory number

0001 0 0 1 spare
to _
1101 1 1 1

1110 0 0 0 reserved for national use
to _
1111 1 1 0

1111 1 1 1 spare

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

5 Common CAP Types

5.1 Data types

```
-- The Definition of Common Data Types follows


...

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,
            ...
            },
    oDisconnectSpecificInfo         [7] SEQUENCE {
            releaseCause                [0] Cause {bound}           OPTIONAL,
            ...
            },
    tBusySpecificInfo               [8] SEQUENCE {
            busyCause                   [0] Cause {bound}           OPTIONAL,
            callForwarded               [50] NULL                   OPTIONAL,
            routeNotPermitted           [51] NULL                   OPTIONAL,
            ...
            },
    tNoAnswerSpecificInfo           [9] SEQUENCE {
            callForwarded               [50] NULL                   OPTIONAL,
            ...
            },
    tAnswerSpecificInfo             [10] SEQUENCE {
            destinationAddress          [50] CalledPartyNumber {bound}  OPTIONAL,
            or-Call                     [51] NULL                   OPTIONAL,
            forwardedCall               [52] NULL                   OPTIONAL,
            ...
            },
    tDisconnectSpecificInfo         [12] SEQUENCE {
            releaseCause                [0] Cause {bound}           OPTIONAL,
            ...
            }
    }
-- Indicates the call related information specific to the event.


...

CalledPartyNumber {PARAMETERS-BOUND : bound}    ::= OCTET STRING (SIZE(
    bound.&minCalledPartyNumberLength .. bound.&maxCalledPartyNumberLength))
-- Indicates the Called Party Number. Refer to ETS 300 356-1 [8] for encoding.

-- A CalledPartyNumber may contain national-specific values
-- of the Nature Of Address indicator.
-- The filling-in of the national-specific Nature Of Address indicator values shall be done
-- according to the national ISUP of the gsmSSF country, e.g. ANSI T1.113-1995 [53].
-- In terms of ETS 300 356-1 [8],
-- the Destination Address Field is not present if the destination address length is set to zero.
-- This is the case e.g. when the ANSI ISUP Nature Of Address indicator indicates no number present,
-- operator requested (1110100) or no number present, cut-through call to carrier (1110101).
-- See also see 3GPP TS 23.078 [42].
```

```
...

DestinationRoutingAddress {PARAMETERS-BOUND : bound} ::= SEQUENCE SIZE(1) OF
                                                    CalledPartyNumber {bound}
-- Indicates the Called Party Number.
```

****** NON-MODIFIED SECTION ******

```
ConnectArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    destinationRoutingAddress       [0] DestinationRoutingAddress {bound},
    alertingPattern                 [1] AlertingPattern                         OPTIONAL,
    originalCalledPartyID           [6] OriginalCalledPartyID {bound}           OPTIONAL,
    extensions                      [10] Extensions {bound}                     OPTIONAL,
    carrier                         [11] Carrier {bound}                        OPTIONAL,
    callingPartysCategory           [28] CallingPartysCategory                  OPTIONAL,
    redirectingPartyID              [29] RedirectingPartyID {bound}             OPTIONAL,
    redirectionInformation          [30] RedirectionInformation                 OPTIONAL,
    genericNumbers                  [14] GenericNumbers {bound}                 OPTIONAL,
    serviceInteractionIndicatorsTwo [15] ServiceInteractionIndicatorsTwo        OPTIONAL,
    chargeNumber                    [19] ChargeNumber {bound}                   OPTIONAL,
    cug-Interlock                   [31] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess              [32] NULL                                   OPTIONAL,
    suppressionOfAnnouncement       [55] SuppressionOfAnnouncement              OPTIONAL,
    oCSIApplicable                  [56] OCSIApplicable                         OPTIONAL,
    naOliInfo                       [57] NAOliInfo                              OPTIONAL,
    ...
    }
-- na-Info is included at the discretion of the gsmSCF operator.


...

InitialDPArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    serviceKey                      [0] ServiceKey  ,
    calledPartyNumber               [2] CalledPartyNumber {bound}               OPTIONAL,
    callingPartyNumber              [3] CallingPartyNumber {bound}              OPTIONAL,
    callingPartysCategory           [5] CallingPartysCategory                   OPTIONAL,
    cGEncountered                   [7] CGEncountered                           OPTIONAL,
    iPSSPCapabilities               [8] IPSSPCapabilities {bound}               OPTIONAL,
    locationNumber                  [10] LocationNumber {bound}                 OPTIONAL,
    originalCalledPartyID           [12] OriginalCalledPartyID {bound}          OPTIONAL,
    extensions                      [15] Extensions {bound}             OPTIONAL,
    highLayerCompatibility          [23] HighLayerCompatibility OPTIONAL,
    additionalCallingPartyNumber    [25] AdditionalCallingPartyNumber {bound}   OPTIONAL,
    bearerCapability                [27] BearerCapability {bound}               OPTIONAL,
    eventTypeBCSM                   [28] EventTypeBCSM                          OPTIONAL,
    redirectingPartyID              [29] RedirectingPartyID {bound}             OPTIONAL,
    redirectionInformation          [30] RedirectionInformation                 OPTIONAL,
    cause                           [17] Cause {bound}                          OPTIONAL,
    serviceInteractionIndicatorsTwo [32] ServiceInteractionIndicatorsTwo        OPTIONAL,
    carrier                         [37] Carrier {bound}                        OPTIONAL,
    cug-Index                       [45] CUG-Index                              OPTIONAL,
    cug-Interlock                   [46] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess              [47] NULL                                   OPTIONAL,
    iMSI                            [50] IMSI                                   OPTIONAL,
    subscriberState                 [51] SubscriberState                        OPTIONAL,
    locationInformation             [52] LocationInformation                    OPTIONAL,
    ext-basicServiceCode            [53] Ext-BasicServiceCode                   OPTIONAL,
    callReferenceNumber             [54] CallReferenceNumber                    OPTIONAL,
    mscAddress                      [55] ISDN-AddressString                     OPTIONAL,
    calledPartyBCDNumber            [56] CalledPartyBCDNumber {bound}           OPTIONAL,
    timeAndTimezone                 [57] TimeAndTimezone {bound}                OPTIONAL,
    gsm-ForwardingPending           [58] NULL                                   OPTIONAL,
    initialDPArgExtension           [59] InitialDPArgExtension                  OPTIONAL,
    ...
    }
```

****** NEXT MODIFIED SECTION ******

5.5 Classes

```
CAP-classes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-classes(54) version3(2)}

...

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             32
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10


...
```

****** END OF DOCUMENT ******

3GPP TSG CN WG2 Meeting #22 ***N2-020217***
Sophia Antipolis, France, 28th January – 2nd February 2002

CR-Form-v5

CHANGE REQUEST

⌘ **23.078** **CR** **393** ⌘ **rev** **-** ⌘ Current version: **4.3.0** ⌘

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

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

Title:	⌘	Clarification on national values of the Called Party Number's Nature of Address field
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	2nd of January 2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

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

Reason for change: ⌘

The CAMEL3 introduced new trigger detection points (DP3 Analysed_Information and Route_Select_Failure). In these DPs the MSC/SSP has analysed the Called Party Number (CdPN) and the Nature Of Address (NoA) may be different to the one sent from the mobile station due to Connect operation, or due to digit analysis.

Also, the Destination Address parameter of EventReportBCSM operation at O/T_Answer DP may contain a CdPN with a national-specific NoA.

Thirdly, the Connect operation may contain a CdPN with a national-specific NoA.

Especially in the US markets the ANSI ISUP (ANSI T1.113) uses nationally specified NoA values for the operator-assisted calls.
Currently it is not specified how the CAP interface works in the following cases:

- An US MSC triggers to US SCP in a 01+, 0- or 0+ call.
- An US MSC triggers to non-US SCP when an in-bound roamer dials operator number. It up to service logic if it allows the call to continue.
- An US SCP should be able to route a mobile call to an operator by using connect (when the MSC/SSP is also in US).

Also the fact the Called Party Number of CAP is referencing to an ETSI specification ETS300356-1 may cause confusion in the non-European markets.

The American user diallings CAC+0, 0 and 00 must be supported by CAMEL. In these cases the number length is zero after the analysis and the ANSI ISUP CdPN.NoA='no number present, operator requested' (1110100). The non-American SCPs shall be aware of this kind of possibility. Same with cut-through calls. Currently this is not possible.

Summary of change: ⌘

- 23.078 warning for the service logic designers about nationally specific NoA values.
- The CAP-Connect operation shall not contain country-specific NoA values if the SCP is not sure that MSC/SSP can understand & accept

		these values.
Consequences if not approved:	⌘	• Incompatibility, especially in the US markets.

Clauses affected:	⌘				
Other specs affected:	⌘	X	Other core specifications	⌘	23.078-CR373 (R99), 29.078-CR232 (R99), 23.078-CR393 (Rel-4), 29.078-CR243 (Rel-4)
			Test specifications		
			O&M Specifications		
Other comments:	⌘	• Currently, the contributor does not see any reason to support nationally specific NoA values in the ETC or AssistRequestIntructions operation. The user interaction is not given by the operator. • The CAMEL4 ICA does not need these values in Nokia's understanding. • The national values are not significant in MT calls, since the MSISDN shall be either in international, national or subscriber number format. This CR tries primarily to solve the US specific problems.			

****** For Your Information ******

Here are some simplified examples of American national-specific NoA values:

User Dialling	**ANSI ISUP IAM CdPN NoA**	**ANSI ISUP CdPN digits**	**ANSI ISUP TNS**	**Call is routed to**
0	OP	-	-	Local / PLMN operator desk
00	OP	-	Pre-subscribed carrier	Pre-subscribed Long distance carrier
(1)+NPA-NXX-XXX	NAT	NPA-NXX-XXXX	None / Pre-subscribed carrier (local call / long distance call correspondingly)	Called number
0+NPA-NXX-XXXX	NATOP	NPA-NXX-XXXX	None / Pre-subscribed carrier	Called number via operator desk
011-CC-NSN	INT	CC-NSN	Pre-subscribed carrier	Called number via pre-subscribed carrier
011-CC-NSN	INTOP	CC-NSN	Pre-subscribed carrier	Called number via operator desk of pre-subscribed carrier
101xxxx+B#	As any above depending on B#	As any above depending on B#	Dialled carrier xxxx	To dialed B# or operator of dialed carrier

Abbreviaions used:

OP	No number present, operator requested
NATOP	National number, operator requested
INTOP	International number operator requested

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

4.6 Description of information flows

. . .

4.6.1.4 Event Report BCSM

4.6.1.4.1 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.

4.6.1.4.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Event type BCSM	M	M	M	M	This IE specifies the type of event that is reported.
Event Specific Information BCSM	C	C	C	C	This IE indicates the call related information specific to the event.
Leg ID	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	This IE indicates the DP type.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available).					

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	Description
Destination address	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 [36].
Forwarded call	-	M	C	C	This IE indicates that the call has been subject to GSM call forwarding.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent if its value is True, otherwise it shall not be sent). - Not applicable.					

If the Event Type BCSM IE contains one of Route_Select_Failure, O_Called_Party_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	Description
Cause	C	C	C	C	This IE indicates the cause.
C Conditional (The IE shall be sent if available).					

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	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 GSM Call Forwarding supplementary service.
Route not permitted	-	-	C	-	This IE indicates that call forwarding will not take place in this GMSC due to the rules of basic optimal routeing. See 3GPP TS 23.079 [36].
C Conditional (The IE shall be sent if available). - Not applicable.					

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

Information element name	MO	MF	MT	VT	Description
Call forwarded	-	-	C	C	This IE indicates that the call may be forwarded by the appropriate GSM Call Forwarding supplementary service.
C Conditional (The IE shall be sent if available). - Not applicable.					

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

****** NEXT MODIFIED SECTION ******

4.6.1.5 Initial DP

4.6.1.5.1 Description

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

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	C	C	C	C	The calling party number provided by the access signalling system of the calling user or received from the gsmSCF due to the previous CAMEL processing.
Bearer Capability	M	C	C	C	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number. If the Initial DP operation 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 MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a CONNECT operation, service selection information, such as * and # digits may be present (see clause 4.2.1.2.2), carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Party Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.

Information element name	MO	MF	MT	VT	Description
Call Reference Number	M	M	M	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the SCF to decide about the further handling of the call.
Event Type BCSM	M	M	M	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.
Ext-Basic Service Code	C	C	C	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	C	C	C	C	This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.
IMSI	M	M	M	M	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
Location Number	M	C	C	C	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in incoming ISUP signalling.
MSC Address	M	M	M	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialled by the calling subscriber. If no carrier was dialled, the IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For CF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	C	C	C	C	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Redirecting Party ID	C	C	C	C	This IE indicates the directory number the call was redirected from. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.

Information element name	MO	MF	MT	VT	Description
Redirection Information	C	C	C	C	This IE contains forwarding related information, such as redirection counter. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a table below.
CUG Index	C	-	-	-	See 3GPP TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used.
Outgoing Access Indicator	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available). - Not applicable.					

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

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3GPP TS 23.018 [3].
Service area ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Cell ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Geographical information	C	-	C	C	See 3GPP TS 23.018 [3].
Geodetic information	C	-	C	C	See 3GPP TS 23.018 [3].
VLR number	M	-	C	M	See 3GPP TS 23.018 [3].
Age Of location information	M	-	C	C	See 3GPP TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2	-	C2	C2	See 3GPP TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	This IE indicates the LSA identity associated with the current position of the MS. Shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [23].
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available. Further conditions are in the description column.). C1 Conditional (The IE shall be sent, if available and SoLSA is supported). C2 Conditional (One and only one of the three conditional IEs shall be sent). - Not applicable.					

Carrier contains the following information:

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

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	C	C	C	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the calling subscriber.
C Conditional (The IE shall be sent, if available). - Not applicable.					

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	C	C	C	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.
C Conditional (The IE shall be sent, if available).					

****** NEXT 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.

4.6.2.6.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Alerting Pattern	-	-	O	O	This parameter indicates the kind of Alerting Pattern to be applied.
Calling Party Category	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	This IE contains the called party number towards which the call is to be routed. The *NatureOfAddress indicator* may contain a national-specific value. ~~C~~ 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	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	This IE is described in the next table.
NA Originating Line Information	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	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	This IE carries the dialled digits if the call has met call forwarding on route to the gsmSSF or is forwarded by the gsmSCF.
Redirecting Party ID	O	O	O	O	This IE indicates the directory number the call was redirected from.
Redirection Information	O	O	O	O	This IE contains forwarding related information, such as redirecting counter.
Suppression Of Announcements	-	-	O	O	This IE indicates that announcements or tones generated as a result of unsuccessful call setup shall be suppressed.
Service Interaction Indicators Two	O	O	O	O	This IE is described in a table below.
CUG Interlock Code	O	O	O	O	See 3GPP TS 23.085 [9] for details of this IE.
Outgoing Access Indicator	O	O	O	O	See 3GPP TS 23.085 [9] for details of this IE.
O Optional (Service logic dependent). - Not applicable.					

Carrier contains the following information:

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

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	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 indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	O	-	-	O	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	O	-	-	O	This IE indicates whether the call leg can 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	This IE indicates that no parameters for CUG should be used for the call (i.e. the call should be a non-CUG call).
O Optional (Service logic dependent). - Not applicable.					

NOTE: Non-CUG Call shall not be present if at least one of CUG Interlock Code and Outgoing Access Indicator are present in the Information Flow.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	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	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.
Calling Party Restriction Indicator	O	-	-	-	This IE indicates whether the CLI shall be marked as Restricted by CAMEL action for the call.
O Optional (Service logic dependent). - Not applicable.					

Backward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	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 [38] for description.
O Optional (Service logic dependent).					

****** END OF DOCUMENT ******

3GPP TSG CN WG2 Meeting #22 ***N2-020216***
Sophia Antipolis, France, 28th January – 2nd February 2002

CR-Form-v5

CHANGE REQUEST

⌘ **23.078** **CR** **373** ⌘ **rev** **2** ⌘ Current version: **3.11.0** ⌘

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

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

Title:	⌘	Clarification on national values of the Called Party Number's Nature of Address field
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	2nd of January 2002
Category:	⌘	**F (essential corrction)**
Release:	⌘	R99

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

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

Reason for change: ⌘

The CAMEL3 introduced new trigger detection points (DP3 Analysed_Information and Route_Select_Failure). In these DPs the MSC/SSP has analysed the Called Party Number (CdPN) and the Nature Of Address (NoA) may be different to the one sent from the mobile station due to Connect operation, or due to digit analysis.

Also, the Destination Address parameter of EventReportBCSM operation at O/T_Answer DP may contain a CdPN with a national-specific NoA.

Thirdly, the Connect operation may contain a CdPN with a national-specific NoA.

Especially in the US markets the ANSI ISUP (ANSI T1.113) uses nationally specified NoA values for the operator-assisted calls.
Currently it is not specified how the CAP interface works in the following cases:

- An US MSC triggers to US SCP in a 01+, 0- or 0+ call.
- An US MSC triggers to non-US SCP when an in-bound roamer dials operator number. It up to service logic if it allows the call to continue.
- An US SCP should be able to route a mobile call to an operator by using connect (when the MSC/SSP is also in US).

Also the fact the Called Party Number of CAP is referencing to an ETSI specification ETS300356-1 may cause confusion in the non-European markets.

The American user diallings CAC+0, 0 and 00 must be supported by CAMEL. In these cases the number length is zero after the analysis and the ANSI ISUP CdPN.NoA='no number present, operator requested' (1110100). The non-American SCPs shall be aware of this kind of possibility. Same with cut-through calls. Currently this is not possible.

Summary of change: ⌘

- 23.078 warning for the service logic designers about nationally specific NoA values.
- The CAP-Connect operation shall not contain country-specific NoA values if the SCP is not sure that MSC/SSP can understand & accept

		these values.
Consequences if not approved:	⌘	• Incompatibility, especially in the US markets.

Clauses affected:	⌘				
Other specs affected:	⌘	X	Other core specifications	⌘	29.078-CR232 (R99)
			Test specifications		
			O&M Specifications		
Other comments:	⌘	• Currently, the contributor does not see any reason to support nationally specific NoA values in the ETC or AssistRequestIntructions operation. The user interaction is not given by the operator. • The CAMEL4 ICA does not need these values in Nokia's understanding. • The national values are not significant in MT calls, since the MSISDN shall be either in international, national or subscriber number format. This CR tries primarily to solve the US specific problems.			

****** For Your Information ******

Here are some simplified examples of American national-specific NoA values:

User Dialling	**ANSI ISUP IAM CdPN NoA**	**ANSI ISUP CdPN digits**	**ANSI ISUP TNS**	**Call is routed to**
0	OP	-	-	Local / PLMN operator desk
00	OP	-	Pre-subscribed carrier	Pre-subscribed Long distance carrier
(1)+NPA-NXX-XXX	NAT	NPA-NXX-XXXX	None / Pre-subscribed carrier (local call / long distance call correspondingly)	Called number
0+NPA-NXX-XXXX	NATOP	NPA-NXX-XXXX	None / Pre-subscribed carrier	Called number via operator desk
011-CC-NSN	INT	CC-NSN	Pre-subscribed carrier	Called number via pre-subscribed carrier
011-CC-NSN	INTOP	CC-NSN	Pre-subscribed carrier	Called number via operator desk of pre-subscribed carrier
101xxxx+B#	As any above depending on B#	As any above depending on B#	Dialled carrier xxxx	To dialed B# or operator of dialed carrier

Abbreviaions used:

OP	No number present, operator requested
NATOP	National number, operator requested
INTOP	International number operator requested

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

4.6 Description of information flows

. . .

4.6.1.4 Event Report BCSM

4.6.1.4.1 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.

4.6.1.4.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Event type BCSM	M	M	M	M	This IE specifies the type of event that is reported.
Event Specific Information BCSM	C	C	C	C	This IE indicates the call related information specific to the event.
Leg ID	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	This IE indicates the DP type.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available).					

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	Description
Destination address	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 [36].
Forwarded call	-	M	C	C	This IE indicates that the call has been subject to GSM call forwarding.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent if its value is True, otherwise it shall not be sent). - Not applicable.					

If the Event Type BCSM IE contains one of Route_Select_Failure, O_Called_Party_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	Description
Cause	C	C	C	C	This IE indicates the cause.
C Conditional (The IE shall be sent if available).					

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	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 GSM Call Forwarding supplementary service.
Route not permitted	-	-	C	-	This IE indicates that call forwarding will not take place in this GMSC due to the rules of basic optimal routeing. See 3GPP TS 23.079 [36].
C Conditional (The IE shall be sent if available). - Not applicable.					

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

Information element name	MO	MF	MT	VT	Description
Call forwarded	-	-	C	C	This IE indicates that the call may be forwarded by the appropriate GSM Call Forwarding supplementary service.
C Conditional (The IE shall be sent if available). - Not applicable.					

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

****** NEXT MODIFIED SECTION ******

4.6.1.5 Initial DP

4.6.1.5.1 Description

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

4.6.1.5.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Additional Calling Party Number	C	C	C	C	The calling party number provided by the access signalling system of the calling user or received from the gsmSCF due to the previous CAMEL processing.
Bearer Capability	M	C	C	C	This IE indicates the type of the bearer capability connection to the user.
Called Party Number	C	M	M	M	This IE contains the number used to identify the called party in the forward direction. For the MO and MF calls this parameter is used in the case of TDP Route_Select_Failure (this is the destination number used to route the call) and in the case of TDP Busy and TDP No Reply (this is the MSISDN when the destination number used for the call is a MSRN, or in the case of unsuccessful establishment received from the HLR via MAP interface, otherwise it is the number used to route the call). For the VT calls when there is no forwarding pending this is the MSISDN received in the Provide Roaming Number; if the MSISDN is not available, the basic MSISDN is used. For the MT and VT call case when there is call forwarding or call deflection pending, this is the MSISDN, i.e. not the forwarded-to or deflected-to number. If the Initial DP operation 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 MO call in all cases except in the case of TDP Route_Select_Failure. For the TDP Collected_Information, the number contained in this IE shall be identical to the number received over the access network. It may e.g. include service selection information, such as ∗ and # digits, or carrier selection information dialled by the subscriber. For the TDP Analysed_Information, the number contained in this IE shall be the dialled number received over the network access or received from a gsmSCF in a CONNECT operation, service selection information, such as * and # digits may be present (see clause 4.2.1.2.2), carrier selection information dialled by the subscriber is not present.
Calling Party Number	M	C	C	C	This IE carries the calling party number to identify the calling party or the origin of the call.
Calling Party Category	M	C	C	C	Indicates the type of calling party (e.g., operator, pay phone, ordinary subscriber).
CallGap Encountered	C	C	C	C	This parameter indicates the type of gapping the related call have been subjected to. This parameter shall be present only if a call gapping context is applicable to the initialDP operation.

Information element name	MO	MF	MT	VT	Description
Call Reference Number	M	M	M	M	This IE may be used by the gsmSCF for inclusion in a network optional gsmSCF call record. It has to be coupled with the identity of the MSC which allocated it in order to define unambiguously the identity of the call. For MO calls, the call reference number is set by the serving VMSC and included in the MO call record. For MT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For VT calls, the call reference number is set by the GMSC and included in the RCF call record in the GMSC and in the MT call record in the terminating MSC. For CF calls, the call reference number is set by the GMSC and included in the CF record in the forwarding MSC.
Cause	C	C	C	C	This IE indicates the cause specific to the armed BCSM DP event. This IE is applicable to DP Route_Select_Failure and DP T_Busy. The cause may be used by the SCF to decide about the further handling of the call.
Event Type BCSM	M	M	M	M	This IE indicates the armed BCSM DP event, resulting in the Initial DP IF.
Ext-Basic Service Code	C	C	C	C	This IE indicates the type of basic service i.e., teleservice or bearer service.
High Layer Compatibility	C	C	C	C	This IE indicates the type of the high layer compatibility, which will be used to determine the ISDN-teleservice of a connected ISDN terminal.
IMSI	M	M	M	M	This IE identifies the mobile subscriber.
IP SSP Capabilities	C	C	C	C	This IE indicates which SRF resources are supported within the gsmSSF and are available. If this IE is absent, this indicates that no gsmSRF is attached and available.
Location Information	M	-	C	M	This IE is described in the next table.
Location Number	M	C	C	C	For mobile originated calls this IE represents the location of the calling party. For all other call scenarios this IE contains the location number received in incoming ISUP signalling.
MSC Address	M	M	M	M	For MO calls, the MSC Address carries the international E.164 address of the serving VMSC. For MT calls, the MSC Address carries the international E.164 address of the GMSC. For VT calls, the MSC Address carries the international E.164 address of the serving VMSC. For CF calls, the MSC Address carries the international E.164 address of the forwarding MSC.
GMSC Address	-	M	-	M	For CF calls, the GMSC Address carries the international E.164 address of the GMSC. For VT calls, the GMSC Address carries the international E.164 address of the GMSC.
Carrier	C	C	C	C	The content of this IE is described in the next table. The IE may be sent when the VPLMN and the HPLMN of the subscriber are both North American. For MO calls, this IE shall contain any carrier that was dialled by the calling subscriber. If no carrier was dialled, the IE shall contain the calling subscriber's subscribed carrier. For MT and VT calls, the IE shall contain the carrier subscribed to by the called subscriber. For CF calls, the IE shall contain the carrier subscribed to by the forwarding subscriber.
Original Called Party ID	C	C	C	C	This IE carries the dialled digits if the call has met call forwarding on the route to the gsmSSF. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Redirecting Party ID	C	C	C	C	This IE indicates the directory number the call was redirected from. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.

Information element name	MO	MF	MT	VT	Description
Redirection Information	C	C	C	C	This IE contains forwarding related information, such as redirection counter. This IE shall also be sent if it was received from the gsmSCF due to the previous CAMEL processing.
Service Key	M	M	M	M	This IE indicates to the gsmSCF the requested CAMEL Service. It is used to address the required application/SLP within the gsmSCF.
Subscriber State	-	-	C	C	This IE indicates the status of the MS. The states are: - CAMELBusy: The MS is engaged on a transaction for a mobile originating or terminated circuit-switched call. - NetworkDeterminedNotReachable: The network can determine from its internal data that the MS is not reachable. - AssumedIdle: The state of the MS is neither "CAMELBusy" nor "NetworkDeterminedNotReachable". - Not provided from VLR.
Time And Timezone	M	M	M	M	This IE contains the time that the gsmSSF was triggered, and the time zone the gsmSSF resides in.
GSM Forwarding Pending	-	-	C	C	This parameter indicates that a forwarded-to-number was received and the call will be forwarded due to GSM supplementary service call forwarding in the GMSC/VMSC. This parameter is present in the following cases: - When the FTN is received from the HLR prior to triggering in the Terminating_Attempt_Authorised DP. - When a conditional call forwarding or call deflection is invoked in the GMSC/MSC, and T_Busy or T_No_answer is reported as a TDP.
Service Interaction Indicators Two	C	C	C	C	This IE is sent if it is received in the ISUP message or due to previous CAMEL processing. The IE is described in a table below.
CUG Index	C	-	-	-	See 3GPP TS 23.085 [9] for details of this IE.
CUG Interlock Code	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. The latest available data shall be used, i.e., if the CUG data which had been obtained in the ISUP IAM or from the VLR has been modified by the previous Connect or Continue With Argument IF, this modified data shall be used.
Outgoing Access Indicator	C	C	C	C	See 3GPP TS 23.085 [9] for details of this IE. In the MO case this IE is received from the VLR.
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available). - Not applicable.					

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

Information element name	MO	MF	MT	VT	Description
Location Number	-	-	C	C	See 3GPP TS 23.018 [3].
Service area ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Cell ID	C2	-	C2	C2	See 3GPP TS 23.018 [3].
Geographical information	C	-	C	C	See 3GPP TS 23.018 [3].
Geodetic information	C	-	C	C	See 3GPP TS 23.018 [3].
VLR number	M	-	C	M	See 3GPP TS 23.018 [3].
Age Of location information	M	-	C	C	See 3GPP TS 23.018 [3].
Current Location Retrieved	-	-	-	-	Not applicable
Location area ID	C2	-	C2	C2	See 3GPP TS 23.003 [37].
Selected LSA Identity	C1	-	C1	C1	This IE indicates the LSA identity associated with the current position of the MS. Shall be present if the LSA ID in the subscriber data matches the LSA ID of the current cell. In the case of multiple matches the LSA ID with the highest priority shall be sent. See 3GPP TS 23.073 [23].
M Mandatory (The IE shall always be sent). C Conditional (The IE shall be sent, if available. Further conditions are in the description column.). C1 Conditional (The IE shall be sent, if available and SoLSA is supported). C2 Conditional (One and only one of the three conditional IEs shall be sent). - Not applicable.					

Carrier contains the following information:

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

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	C	C	C	C	This IE is described in a table below.
HOLD Treatment Indicator	C	-	-	C	This IE indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	C	-	-	C	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	C	-	-	C	This IE indicates whether the call leg can become part of an ECT call initiated by the calling subscriber.
C Conditional (The IE shall be sent, if available). - Not applicable.					

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	C	C	C	C	This IE indicates whether the call leg can become part of a MPTY call initiated by the called subscriber.
Call Diversion Treatment Indicator	C	C	C	C	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.
C Conditional (The IE shall be sent, if available).					

****** NEXT 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.

4.6.2.6.2 Information Elements

The following information elements are required:

Information element name	MO	MF	MT	VT	Description
Alerting Pattern	-	-	O	O	This parameter indicates the kind of Alerting Pattern to be applied.
Calling Party Category	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	This IE contains the called party number towards which the call is to be routed. The *NatureOfAddress indicator* may contain a national-specific value. ~~C~~ 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	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	This IE is described in the next table.
NA Originating Line Information	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	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	This IE carries the dialled digits if the call has met call forwarding on route to the gsmSSF or is forwarded by the gsmSCF.
Redirecting Party ID	O	O	O	O	This IE indicates the directory number the call was redirected from.
Redirection Information	O	O	O	O	This IE contains forwarding related information, such as redirecting counter.
Suppression Of Announcements	-	-	O	O	This IE indicates that announcements or tones generated as a result of unsuccessful call setup shall be suppressed.
Service Interaction Indicators Two	O	O	O	O	This IE is described in a table below.
CUG Interlock Code	O	O	O	O	See 3GPP TS 23.085 [9] for details of this IE.
Outgoing Access Indicator	O	O	O	O	See 3GPP TS 23.085 [9] for details of this IE.
O Optional (Service logic dependent). - Not applicable.					

Carrier contains the following information:

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

Service Interaction Indicators Two contains the following information:

Information element name	MO	MF	MT	VT	Description
Forward Service Interaction Indicator	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 indicates whether the CAMEL subscriber can invoke HOLD for the call.
CW Treatment Indicator	O	-	-	O	This IE indicates whether CW can be applied for a call to the CAMEL subscriber whilst this call is ongoing.
ECT Treatment Indicator	O	-	-	O	This IE indicates whether the call leg can 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	This IE indicates that no parameters for CUG should be used for the call (i.e. the call should be a non-CUG call).
O Optional (Service logic dependent). - Not applicable.					

NOTE: Non-CUG Call shall not be present if at least one of CUG Interlock Code and Outgoing Access Indicator are present in the Information Flow.

Forward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	Description
Conference Treatment Indicator	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	This IE indicates whether the call can be forwarded using the Call Forwarding or Call Deflection Supplementary Services.
Calling Party Restriction Indicator	O	-	-	-	This IE indicates whether the CLI shall be marked as Restricted by CAMEL action for the call.
O Optional (Service logic dependent). - Not applicable.					

Backward Service Interaction Indicator contains the following information:

Information element name	MO	MF	MT	VT	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 [38] for description.
O Optional (Service logic dependent).					

****** END OF DOCUMENT ******

3GPP TSG CN WG2 Meeting #22 ***N2-020215***
Sophia Antipolis, France, 28th January – 2nd February 2002

CHANGE REQUEST

⌘ **29.078** **CR** **242** ⌘ **rev** ⌘ Current version: **4.3.0** ⌘

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

Title:	⌘	Correction to GPRS operation error handling
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	1 February 2002
Category:	⌘	A
Release:	⌘	Rel-4

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

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

Reason for change: ⌘

In circuit switched call control, most (if not all) of the CAP operations which may be sent from the gsmSSF to the gsmSCF do not have a RETURN RESULT specified in the OPERATION definition.

If an operation has no RETURN RESULT specified, then if the gsmSSF does not receive a response from the gsmSCF, after sending such operation, within the defined operation time, then the gsmSSF shall assume that no error has occurred with the processing of that operation.

For GPRS, the situation is different. All CAP operations that may be sent from the gprsSSF to the gsmSCF, except for InitialDPGPRS, have a RETURN RESULT specified in the OPERATION definition.

Therefore, if the operation timer expires for one of those operations, then an error has occurred in the gsmSCF or in the signalling link between the gsmSCF and the gprsSSF.

TS 29.078 has not specified the required behaviour of the gprsSSF in the case of an operation time-out.

TS 29.078 shall specify that in the case of an operation time-out, the gprsSSF shall abort the TC dialogue, terminate the GPRS dialogue and apply default handling for the GPRS Session or PDP Context for which the GPRS dialogue was established.

Summary of change: ⌘ Specify gprsSSF behaviour for operation time-out.

Consequences if not approved: ⌘ Inconsistent behaviour of the gprsSSF. HPLMN operators may want the VPLMN operator to terminate the PDP Context or Session in the case of a CAP signalling error. However, if this behaviour is not specified, then it can not be guaranteed.

Clauses affected: ⌘ 11.6, 11.22, 11.25

Other specs affected: ⌘ ☐ Other core specifications ⌘
☐ Test specifications

	☐ O&M Specifications	
Other comments:	⌘	

*** First Modification ***

11.6 ApplyChargingReportGPRS procedure

…

11.6.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services used for reporting operation errors are described in clause 12.

*** Next Modification ***

11.22 EntityReleasedGPRS procedure

…

11.22.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services which are used for reporting operation errors are described in clause 12.

*** Next Modification ***

11.25 EventReportGPRS procedure

…

11.25.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

In case the message type is request, on expiration of T_{SSF} before receiving any operation, the gprsSSF aborts the interaction with the gsmSCF and instructs the SGSN to handle the GPRS session or PDP context according to the default GPRS handling parameters of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services which are used for reporting operation errors are described in clause 12.

*** End of Document ***

3GPP TSG CN WG2 Meeting #22 ***N2-020214***
Sophia Antipolis, France, 28th January – 2nd February 2002 (revision of N2-020170)

CHANGE REQUEST

⌘ **29.078** **CR** **234** ⌘ **rev** **3** ⌘ Current version: **3.10.0** ⌘

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

Title:	⌘	Correction to GPRS operation error handling
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	31 January 2002
Category:	⌘	F
Release:	⌘	R99

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

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

Reason for change: ⌘

In circuit switched call control, most (if not all) of the CAP operations which may be sent from the gsmSSF to the gsmSCF do not have a RETURN RESULT specified in the OPERATION definition.

If an operation has no RETURN RESULT specified, then if the gsmSSF does not receive a response from the gsmSCF, after sending such operation, within the defined operation time, then the gsmSSF shall assume that no error has occurred with the processing of that operation.

For GPRS, the situation is different. All CAP operations that may be sent from the gprsSSF to the gsmSCF, except for InitialDPGPRS, have a RETURN RESULT specified in the OPERATION definition.

Therefore, if the operation timer expires for one of those operations, then an error has occurred in the gsmSCF or in the signalling link between the gsmSCF and the gprsSSF.

TS 29.078 has not specified the required behaviour of the gprsSSF in the case of an operation time-out.

TS 29.078 shall specify that in the case of an operation time-out, the gprsSSF shall abort the TC dialogue, terminate the GPRS dialogue and apply default handling for the GPRS Session or PDP Context for which the GPRS dialogue was established.

Summary of change: ⌘ Specify gprsSSF behaviour for operation time-out.

Consequences if not approved: ⌘ Inconsistent behaviour of the gprsSSF. HPLMN operators may want the VPLMN operator to terminate the PDP Context or Session in the case of a CAP signalling error. However, if this behaviour is not specified, then it can not be guaranteed.

Clauses affected: ⌘ 11.6, 11.22, 11.25

Other specs affected: ⌘ ☐ Other core specifications ⌘
☐ Test specifications

	☐ O&M Specifications	
Other comments:	⌘	

*** First Modification ***

11.6 ApplyChargingReportGPRS procedure

…

11.6.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services used for reporting operation errors are described in clause 12.

*** Next Modification ***

11.22 EntityReleasedGPRS procedure

…

11.22.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services which are used for reporting operation errors are described in clause 12.

*** Next Modification ***

11.25 EventReportGPRS procedure

…

11.25.2.2 Error handling

If the operation timer expires, then the gprsSSF shall ~~close~~abort the TC dialogue, terminate the GPRS dialogue and instruct the SGSN to handle the GPRS session or PDP context in accordance with the default GPRS handling parameter of the valid CSI.

In case the message type is request, on expiration of T_{SSF} before receiving any operation, the gprsSSF aborts the interaction with the gsmSCF and instructs the SGSN to handle the GPRS session or PDP context according to the default GPRS handling parameters of the valid CSI.

Generic error handling for the operation related errors is described in clause 10 and the TC services which are used for reporting operation errors are described in clause 12.

*** End of Document ***

3GPP TSG CN WG2 Meeting #22 ***N2-020212***
Sophia Antipolis, France, 28th January – 2nd February 2002

CHANGE REQUEST

⌘ **29.078** **CR** **241** ⌘ **rev** ⌘ Current version: **4.3.0** ⌘

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

Title:	⌘	Error handling for sequential TCAP Operation components
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	1 February 2002
Category:	⌘	A
Release:	⌘	Rel-4

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

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

Reason for change: ⌘

When the gsmSCF needs to send a set of Operations to the gsmSSF, smsSSF or gprsSSF, it may combine these Operation components into a single TC Message. A few examples are:

- RequestReportBCSMEvent + Continue to gsmSSF
- RequestReportSMSEvent + FurnishChargingInformationSMS + ConnectSMS to smsSSF
- RequestReportGPRSEvent + ApplyChargingGPRS + ContinueGPRS to gprsSSF

TC receives these operation components and passes these individually on to the TC-User.

If, however, the processing of e.g. RequestReportBCSMEvent fails, then the remaining Operations carried in the same TC Message should not be processed by the TC-User.

This gsmSSF behaviour is specified in CS1. It is however not specified in CAP. The body part of the present CR contains a copy of the relevant section from CS1.

This behaviour is very important. If the gsmSSF would not behave as described above, the result may e.g. be that a CAP Continue would be executed without events being armed. The gsmSSF would close the TC dialogue and the Service Logic would loose control of the call.

The present CR proposes therefore that this behaviour be specified for CAP.

It is especially relevant for gprsSSF and smsSSF. These functional entities are new in CAMEL Phase 3. Implementations of these entities may not have automatically inherited this functionality from CS1 implementation.

Summary of change:	⌘	Specify SSF error handling for sequential Operation execution.
Consequences if not approved:	⌘	- Inconsistent behaviour of gsmSSFs from different vendors; - Inconsistent behaviour between gsmSSF, smsSSF and gprsSSF; - The gsmSCF may unintentionally loose control of a call / short message / GPRS Session / PDP Context if one Operation in a sequence of Operations fails.

Clauses affected:	⌘	12.1.1.2		
Other specs Affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** For Information ***

Extract from ETS 300 374-1 (ETSI CS1)

One or a sequence of components received in one or more TCAP messages may include a single operation or multiple operations, and is processed as follows:

- process the operations in the order in which they are received;
- each operation causes a state transition independent of whether or not a single operation or multiple operations are received in a message;
- the SSF examines subsequent operations in the sequence. As long as sequential execution of these operations would leave the FSM in the same state, it will execute them (e.g., RequestReportBCSMEvent). If a subsequent operation causes a transition out of the state then the following operations should be buffered until the current operation has been executed. In all other cases, await an event that would cause a transition out of the current state (such an event would be the completion of operation being executed), or reception of an external event.

EXAMPLE: The SSF receives the operations FurnishChargingInformation, ConnectToResource, and PlayAnnouncement in a component sequence inside a single TCAP message. Upon receipt of this message, these operations are executed up to and including ConnectToResource while the SSF is in the **Waiting for Instruction** state. As the ConnectToResource operation is executed (and when, or after the FurnishChargingInformation operation has been completed), the SSF FSM will transition to the **Waiting for End of User Interaction** state. The PlayAnnouncement operation is relayed to the SRF while the SSF is in **Waiting for End of User Interaction** state.

- if there is an error in processing one of the operations in the sequence, the SSF FSM processes the error (see below) and discards all remaining operations in the sequence;
- if an operation is not understood or is out of context (i.e. violates the SACF rules defined by the SSF FSM) as described above, the SSF FSM processes the error according to the rules given in subclause 10.2 (using TC-U-REJECT or the operation error UnexpectedComponentSequence).

*** First Modification ***

12.1.1.2 Abnormal procedures

This subclause describes the procedures and TC primitives that shall be used for reporting abnormal situations between AEs. The error cases are defined in clause 10.

The following primitives shall be used to report abnormal situations:

- operation errors, as defined in the CAP, are reported with TC-U-ERROR request primitive.
- rejection of a TC component by the TC-user shall be reported with TC-U-REJECT request primitive.
- when the FE detecting error or rejecting operation decides the termination of TC dialogue, TC-END request primitive (basic) with error or reject can be used for the termination of TC dialogue.
- when the gsmSSF or the gsmSRF detecting error or rejecting operation recognizes the possibility to continue dialogue, TC-CONTINUE request primitive with error or reject can be used for the continuation of TC dialogue.
- a dialogue shall be aborted by the TC-user with a TC-U-ABORT request primitive.
- on expiration of application timer TSSF or TSRF, dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason, regardless of TC dialogue is established or not.

For abnormal situations detected by TC the same rules shall apply for reception of TC-R-REJECT indication as for transmission of TC-U-REJECT request and for transmission of TC-P-ABORT indication as for transmission of TC-U-ABORT request primitive.

The following rules shall be applied to terminate the TC dialogue under abnormal situations:

- in the case that abort condition is detected and TC dialogue is established, TC dialogue is terminated by TC-U-ABORT primitive with an Abort reason.
- in the case that abort condition is detected and TC dialogue is not established, TC dialogue is locally terminated by TC-U-ABORT primitive. (in the case such as application time out).

In error situations prearranged end shall not be used to terminate the TC dialogue. In case any AE encounters an error situation the peer entity shall be explicitly notified of the error, if possible. If from any entity's point of view the error encountered requires the relationship to be ended, it shall close the dialogue via a TC-END request primitive with basic end or via a TC-U-ABORT request primitive, depending on whether any pending ERROR or REJECT component is to be sent or not.

In case an entity receives a TC-END indication primitive and after all components have been considered, the FSM is not in a state to terminate the relationship, an appropriate internal error should be provided.

In cases when a dialogue needs to be closed by the initiating entity before its establishment has been completed (before the first TC indication primitive to the TC-BEGIN request primitive has been received from the responding entity), the TC-user shall issue a TC-END request primitive with prearranged end or a TC-U-ABORT request primitive. The result of these primitives will be only local, any subsequent TC indication received for this dialogue will be handled according to the abnormal procedures as specified in ETS 300 287-1 [6]).

~~When multiple Operation components are received in a single TC Message and there is an error in processing one of the operations in the sequence, then the SSF FSM shall process the error and shall discard all remaining operations in the sequence.~~

When the gsmSSF, gprsSSF or smsSSF receives multiple Operation components in a single TC Message and there is an error in the processing of one of these Operations, then the gsmSSF FSM, gprsSSF FSM or smsSSF FSM shall process the error and shall discard all Operation components in that TC Message of which the processing has not yet started.

*** End of Document ***

3GPP TSG CN WG2 Meeting #22 ***N2-020191***
Sophia Antipolis, FRANCE, 28th Jan. – 1st Feb. 2002 *(Revision of N2-020116)*

CR-Form-v6.1

CHANGE REQUEST

⌘ **29.078** **CR** **238** ⌘ **rev** **1** ⌘ Current version: **4.3.0** ⌘

Spec Title: **CAMEL Application Part (CAP) specification (Release 4)** ⌘

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

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

Title:	⌘	Mapping of CUG information from CAP to ISUP
Source:	⌘	Vodafone
Work item code:	⌘	CAMEL3
Date:	⌘	31st January 2002
Category:	⌘	**A**
Release:	⌘	Rel-4

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

Use one of the following releases:

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

Reason for change:	⌘	The mapping tables A.2 (ContinueWithArg) and A.3 (Connect) do not show the mapping of the cug-Interlock and cug-OutgoingAccess parameters to the ISUP message IAM
Summary of change:	⌘	Add the necessary entries to tables A.2 and A.3
Consequences if not approved:	⌘	Possible wrong implementations for CAMEL control of CUG

Clauses affected:	⌘	A.2; A.3		
Other specs affected:	⌘	☒ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	CR 29.078-237r1 (R99)
Other comments:	⌘	The punctuation of the parameter names in tables A.2 & A.3 has been aligned with the ASN.1 (lower case letter at the beginning of the parameter name).		

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

Annex A (normative): Mapping between CAP and ISUP

. . .

Unmodified text

. . .

A.2 ContinueWithArgument operation

Table A.2 illustrates the mapping of parameters received in the ContinueWithArgument operation to parameters sent in the ISUP IAM ~~message~~ to the succeeding exchange. Parameters which were received in the IAM and are not replaced by parameters of the ~~Connect~~ ContinueWithArgument operation are treated according to the normal procedures.

On sending of the IAM the awaiting address complete timer is started. If the timer expires the call is released in both directions and an appropriate indication is returned to the calling subscriber.

Table A.2

CAP operation ContinueWithArgument (Note 1)	ISUP message IAM
~~O~~originalCalledPartyID	Original called number
~~C~~callingPartysCategory	Calling party's category
~~R~~redirectingPartyID	Redirecting number
~~R~~redirectionInformation	Redirection information
~~G~~genericNumbers	Generic number (Note 2)
~~S~~serviceInteractionIndicatorTwo	See Table A.4
cug-Interlock	Closed user group interlock code
cug-OutgoingAccess	Optional forward call indicators (Note 3)

NOTE 1: Optional parameters may be absent, i.e. they are only mapped, if received.

NOTE 2: The set of generic numbers received in the genericNumbers parameter is mapped to the appropriate number of Generic Number parameters in the ISUP IAM. This shall be performed irrespective of the value of the screening indicator in the ISUP calling party number.

NOTE 3: The cug-OutgoingAccess is mapped to the Closed User Group indicator which is carried in bits A & B of the Optional forward call indicators.

A.3 Connect operation

On receipt of a Connect operation from the gsmSCF the called party number used for routing is derived from the destinationRoutingAddress (see Table A.3). If the triggering of the CAMEL service was made for a mobile terminating or forwarded call, an ISUP ACM ~~message~~ shall be sent to the preceding exchange. The encoding of the backward call indicators in the ACM is specified in 3GPP TS 09.12 [51].

Table A.3 illustrates the mapping of parameters received in the Connect operation to parameters sent in the ISUP IAM ~~message~~ to the succeeding exchange. Parameters which were received in the IAM and are not replaced by parameters of the Connect operation are treated according to the normal procedures.

On sending of the IAM the awaiting address complete timer is started. If the timer expires the call is released in both directions and an appropriate indication is returned to the calling subscriber.

Table A.3

CAP operation Connect (Note 1)	ISUP message IAM
destinationRoutingAddress	Called party number
originalCalledPartyID	Original called number
~~C~~callingPartysCategory	Calling party's category
~~R~~redirectingPartyID	Redirecting number
~~R~~redirectionInformation	Redirection information
genericNumbers	Generic number (Note 2)
~~S~~serviceInteractionIndicatorTwo	See Table A.4
cug-Interlock	Closed user group interlock code
cug-OutgoingAccess	Optional forward call indicators (Note 3)

NOTE 1: Optional parameters may be absent, i.e. they are only mapped, if received.

NOTE 2: The set of generic numbers received in the genericNumbers parameter is mapped to the appropriate number of Generic Number parameters in the ISUP IAM. This shall be performed irrespective of the value of the screening indicator in the ISUP calling party number.

NOTE 3: The cug-OutgoingAccess is mapped to the Closed User Group indicator which is carried in bits A & B of the Optional forward call indicators.

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Unmodified text

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

3GPP TSG CN WG2 Meeting #22 ***N2-020190***
Sophia Antipolis, FRANCE, 28th Jan. – 1st Feb. 2002 *(Revision of N2-020115)*

CR-Form-v6.1

CHANGE REQUEST

⌘ **29.078** **CR** **237** ⌘ **rev** **1** ⌘ Current version: **3.10.0** ⌘

Spec Title: **CAMEL Application Part (CAP) specification (Release 1999)** ⌘

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

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

Title:	⌘	Mapping of CUG information from CAP to ISUP
Source:	⌘	Vodafone
Work item code:	⌘	CAMEL3
Date:	⌘	31st January 2002
Category:	⌘	**F** (Essential correction)
Release:	⌘	R99

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

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

Reason for change:	⌘	The mapping tables A.2 (ContinueWithArg) and A.3 (Connect) do not show the mapping of the cug-Interlock and cug-OutgoingAccess parameters to the ISUP message IAM
Summary of change:	⌘	Add the necessary entries to tables A.2 and A.3
Consequences if not approved:	⌘	Possible wrong implementations for CAMEL control of CUG

Clauses affected:	⌘	A.2; A.3
Other specs affected:	⌘	☒ Other core specifications ⌘ CR 29.078-238r1 (Rel-4) ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	The punctuation of the parameter names in tables A.2 & A.3 has been aligned with the ASN.1 (lower case letter at the beginning of the parameter name).

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

Annex A (normative): Mapping between CAP and ISUP

. . .

Unmodified text

. . .

A.2 ContinueWithArgument operation

Table A.2 illustrates the mapping of parameters received in the ContinueWithArgument operation to parameters sent in the ISUP IAM ~~message~~ to the succeeding exchange. Parameters which were received in the IAM and are not replaced by parameters of the ~~Connect~~ ContinueWithArgument operation are treated according to the normal procedures.

On sending of the IAM the awaiting address complete timer is started. If the timer expires the call is released in both directions and an appropriate indication is returned to the calling subscriber.

Table A.2

CAP operation ContinueWithArgument (Note 1)	ISUP message IAM
~~O~~originalCalledPartyID	Original called number
~~C~~callingPartysCategory	Calling party's category
~~R~~redirectingPartyID	Redirecting number
~~R~~redirectionInformation	Redirection information
~~G~~genericNumbers	Generic number (Note 2)
~~S~~serviceInteractionIndicatorTwo	See Table A.4
cug-Interlock	Closed user group interlock code
cug-OutgoingAccess	Optional forward call indicators (Note 3)

NOTE 1: Optional parameters may be absent, i.e. they are only mapped, if received.

NOTE 2: The set of generic numbers received in the genericNumbers parameter is mapped to the appropriate number of Generic Number parameters in the ISUP IAM. This shall be performed irrespective of the value of the screening indicator in the ISUP calling party number.

NOTE 3: The cug-OutgoingAccess is mapped to the Closed User Group indicator which is carried in bits A & B of the Optional forward call indicators.

A.3 Connect operation

On receipt of a Connect operation from the gsmSCF the called party number used for routing is derived from the destinationRoutingAddress (see Table A.3). If the triggering of the CAMEL service was made for a mobile terminating or forwarded call, an ISUP ACM ~~message~~ shall be sent to the preceding exchange. The encoding of the backward call indicators in the ACM is specified in 3GPP TS 09.12 [51].

Table A.3 illustrates the mapping of parameters received in the Connect operation to parameters sent in the ISUP IAM ~~message~~ to the succeeding exchange. Parameters which were received in the IAM and are not replaced by parameters of the Connect operation are treated according to the normal procedures.

On sending of the IAM the awaiting address complete timer is started. If the timer expires the call is released in both directions and an appropriate indication is returned to the calling subscriber.

Table A.3

CAP operation Connect (Note 1)	ISUP message IAM
destinationRoutingAddress	Called party number
originalCalledPartyID	Original called number
~~C~~callingPartysCategory	Calling party's category
~~R~~redirectingPartyID	Redirecting number
~~R~~redirectionInformation	Redirection information
genericNumbers	Generic number (Note 2)
~~S~~serviceInteractionIndicatorTwo	See Table A.4
cug-Interlock	Closed user group interlock code
cug-OutgoingAccess	Optional forward call indicators (Note 3)

NOTE 1: Optional parameters may be absent, i.e. they are only mapped, if received.

NOTE 2: The set of generic numbers received in the genericNumbers parameter is mapped to the appropriate number of Generic Number parameters in the ISUP IAM. This shall be performed irrespective of the value of the screening indicator in the ISUP calling party number.

NOTE 3: The cuh-OutgoingAccess is mapped to the Closed User Group indicator which is carried in bits A & B of the Optional forward call indicators.

. . .

Unmodified text

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