

**Source:** **TSG\_N WG2**

**Title:** **CRs to R99 Work Item CAMEL phase 3 - corrections to 29.078**

**Agenda item:** **8.2.2**

**Document for:** **APPROVAL**

---

**Introduction:**

This document contains 13 CRs on R99 Work Item **CAMEL phase 3** that has been agreed by TSG\_N WG2, and is forwarded to TSG\_N Plenary meeting #9 for approval.

<b>Spec</b>	<b>CR</b>	<b>Rev</b>	<b>Doc-2nd-Level</b>	<b>Phase</b>	<b>Subject</b>	<b>Cat</b>	<b>Ver_C</b>	<b>Ver_N</b>
29.078	108		N2-000314	R99	Move of processing rules for GPRS context.	D	3.4.0	3.5.0
29.078	101		N2-000264	R99	CAP-GPRS-ReferenceNumber ASN.1 correction	F	3.4.1	3.5.0
29.078	102		N2-000270	R99	Removal of duplicate SGSN address/number from IDP-GPRS	F	3.4.0	3.5.0
29.078	103	2	N2-000348	R99	Comments on 'Introduction of GPRS reference in TCAP dialogue portion'	F	3.4.1	3.5.0
29.078	104	1	N2-000341	R99	Revised GPRS TCAP reference in TCAP dialogue portion	F	3.4.0	3.5.0
29.078	106	3	N2-000412	R99	Location Number GPRS	F	3.4.1	3.5.0
29.078	109		N2-000311	R99	Correction to GPRS CONTRACT	F	3.4.0	3.5.0
29.078	111	1	N2-000332	R99	Replacing 'NetworkSpecificBoundSet' by CapSpecificBoundSet'	F	3.4.0	3.5.0
29.078	112	1	N2-000343	R99	Renumbering of GPRS specific Error codes	F	3.4.0	3.5.0
29.078	113		N2-000333	R99	Correction of CAMEL-SCIBillingChargingCharacteristics	F	3.4.0	3.5.0
29.078	114	1	N2-000407	R99	Clarification on GPRS dialogue handling in case of TCAP error/abort	F	3.4.1	3.5.0
29.078	115	1	N2-000410	R99	GPRS location information in GPRSEventSpecificInformation	F	3.4.1	3.5.0
29.078	116	1	N2-000414	R99	Corrections on cause definitions	F	3.4.1	3.5.0

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**29.078 CR 108**

Current Version: **3.4.0**

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: **CN#09**  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
*(at least one should be marked with an X)*

**Source:** N2

**Date:** 10 July 2000

**Subject:** Move of processing rules for GPRS context.

**Work item:** CAMEL Phase 3

**Category:**  
*(only one category shall be marked with an X)*  
F Correction  
A Corresponds to a correction in an earlier release  
B Addition of feature  
C Functional modification of feature  
D Editorial modification

<input type="checkbox"/>	<b>Release:</b> Phase 2
<input type="checkbox"/>	Release 96
<input type="checkbox"/>	Release 97
<input type="checkbox"/>	Release 98
<input checked="" type="checkbox"/>	Release 99
<input type="checkbox"/>	Release 00

**Reason for change:** The description of the GPRS dialogue shall be moved from the 29.078 to the 23.078, as there are also the similar DP processing is described.

**Clauses affected:** 12.1.7.1.1

**Other specs affected:** Other 3G core specifications   
Other GSM core specifications   
MS test specifications   
BSS test specifications   
O&M specifications   
→ List of CRs: 23.078 CR 203  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

**Other comments:**

## — Modified section —

### 12.1.7 gprsSSF-gsmSCF interface

#### 12.1.7.1 Normal procedures

##### 12.1.7.1.1 TC-dialogues and relationships

A *relationship*, i.e. a GPRS dialogue, exists between gprsSSF and gsmSCF if at least one of the following conditions is fulfilled:

- There is at least one EDP armed.
- At least one report is pending.
- gprsSSF is in a TDP or EDP in state WaitingForInstructions.

The GPRS dialogue can consist of multiple consecutive **TCAP-dialogues**. A GPRS dialogue is identified by a GPRS-ReferenceNumber consisting of the originationReference and the destinationReference. One GPRS-Reference is assigned by the SGSN and shall be unique within this SGSN. The other GPRS-Reference is assigned by the gsmSCF and shall be unique within this gsmSCF.

The **TCAP**-dialogues are closed and (re)opened whenever necessary.

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

29.078 CR 101

Current Version: 3.4.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#09  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
(at least one should be marked with an X)

**Source:** N2

**Date:** 05/07/2000

**Subject:** CAP-GPRS-ReferenceNumber correction

**Work item:** CAMEL phase 3

**Category:**  
(only one category shall be marked with an X)  
F Correction  
A Corresponds to a correction in an earlier release  
B Addition of feature  
C Functional modification of feature  
D Editorial modification

X	<b>Release:</b> Phase 2
	Release 96
	Release 97
	Release 98
	Release 99
	Release 00

**Reason for change:** ASN.1 correction of CAP-GPRS-ReferenceNumber OBJECT IDENTIFIER.

**Clauses affected:** 8.1

**Other specs affected:**  
Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications

→ List of CRs:

**Other comments:**

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

## 8 GPRS Control

### 8.1 gsmSCF/gprsSSF operations and arguments

```

.
.

CAP-U-ABORT-Data {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Network(1)
modules(3) cap-u-abort-data(110) version3(2)}
DEFINITION ::=

BEGIN
id-CAP-U-ABORT-Reason OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0)
mobileDomain(0) umts-Network(1) AS(1) cap-u-abort-reason(2) version3(2)}
CAP-U-ABORT-Reason-Abstract-Syntax ABSTRACT-SYNTAX ::= {CAP-U-ABORT-REASON IDENTIFIED BY id-CAP-U-
ABORT-Reason}
CAP-U-ABORT-REASON ::= ENUMERATED {
no-reason-given(1),
application-timer-expired(2),
not-allowed-procedures(3),
abnormal-processing(4),
congestion(5),
invalid-reference(6)
}
-- application-timer-expired shall be set when application timer (e.g. Tssf ) is expired.
-- not-allowed-fsm-procedures shall be set when received signal is not allowed in CAP
-- procedures.
-- For example, when class4 operation is received from SCF and the operation is not
-- allowed in SSF FSM.
-- (SSF FSM cannot continue state transition). (e.g. ReleaseCall operation received in
-- Waiting for End of Temporary Connection state.)
-- abnormal-processing shall be set when abnormal procedures occur at entity action.
-- congestion shall be set when requested resource is unavailable due to congestion at
-- TC user (CAP) level.
-- no-reason-given shall be set when any other reasons above do not apply
-- invalid-reference shall be set if the received destinationReference is unknown or
-- for a known destination Reference the received originationReference does not match
-- with the stored originationReference. This abort reason is used for CAP defined
-- GPRS-ReferenceNumber.
END -- of CAP-U-ABORT-Data

CAP-GPRS-ReferenceNumber {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-
Network(1) modules(3) cap-dialogueInformation(111) version3(2)}
DEFINITIONS ::=

BEGIN
EXPORTS
id-CAP-GPRS-ReferenceNumber-Abstract-Syntax,
CAP-GPRS-ReferenceNumber-Abstract-Syntax
IMPORTS
Integer4
FROM CS1-DataTypes {ccitt(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatatypes(2) version1(0)}
;
id-CAP-GPRS-ReferenceNumber-Abstract-Syntax OBJECT IDENTIFIER ::= {ccitt(0) identified-
organization(4) etsi(0) mobileDomain(0) umts-Network(1) as-Id(1) cap-GPRS-ReferenceNumber(5)
version3(2)}
CAP-GPRS-ReferenceNumber-Abstract-Syntax ABSTRACT-SYNTAX ::= {CAP-GPRS-ReferenceNumber IDENTIFIED
BY id-CAP-GPRS-ReferenceNumber}

CAP-GPRS-ReferenceNumber ::= SEQUENCE {
destinationReference [0] Integer4           OPTIONAL,
originationReference [1] Integer4           OPTIONAL
}
-- This IE is used to identify the relationship between SGSN and the SCP.
END -- of CAP-DialogueInformation

```

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**29.078 CR 102**

Current Version: 3.4.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#09  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: [ftp://ftp.3gpp.org/Information/CR-Form-v2.doc](http://ftp.3gpp.org/Information/CR-Form-v2.doc)

**Proposed change affects:**  
*(at least one should be marked with an X)*

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:**

N2

**Date:** 10 July 2000

**Subject:**

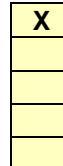
Removal of duplicate SGSN address/number from IDP-GPRS

**Work item:**

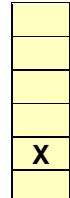
CAMEL phase 3

**Category:**  
*(only one category shall be marked with an X)*

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



**Release:** Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



**Reason for change:**

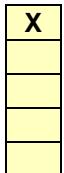
Currently the SGSN SS7 address is twice in the InitialDP-GPRS CAP operation. The duplication is removed. The correct terminology is:

- SGSN Number = The SS7 number of the SGSN currently serving this MS.
- SGSN Address = The IP address of the SGSN currently serving this MS.

**Clauses affected:**

**Other specs affected:**

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



→ List of CRs: 23.078-CR190 (N2-000283)  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

**Other comments:**

\*\*\*\* NON MODIFIED SECTION \*\*\*\*

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

---

## 5 Common CAP Types

### 5.2 Data types

.....

```
LocationInformationGPRS ::= SEQUENCE {
    cellGlobalIdOrServiceAreaIdOrLAI [0] OCTET STRING (SIZE(5..7)) OPTIONAL,
    geographicalInformation [1] OCTET STRING (SIZE (8)) OPTIONAL,
    sgsn-Number [2] ISDN-AddressString OPTIONAL
}
-- CellGlobalIdOrServiceAreaIdOrLAI is coded in accordance with 3G TS 29.002 [13].
-- GeographicalInformation refers to geographical Information as defined
-- in 3G TS 23.032 [44].
```

.....

**\*\*\*\* FIRST and LAST MODIFIED SECTION \*\*\*\***

---

## 8 GPRS Control

### 8.1 gsmSCF/gprsSSF operations and arguments

```
InitialDPGPRSArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    sSSN Address                                [0] ISDN AddressString,
    serviceKey                                     [10] ServiceKey,
    gPRSEventType                                  [21] GPRSEventType,
    mSISDN                                         [32] ISDN-AddressString,
    iMSI                                           [43] IMSI,
    timeAndTimeZone                                [54] TimeAndTimezone {bound},
    gPRSMSClass                                    [65] GPRSMSClass
                                                OPTIONAL,
    pDPType                                         [76] PDPType
                                                OPTIONAL,
    qualityOfService                               [87] QualityOfService
                                                OPTIONAL,
    accessPointName                                [98] AccessPointName{bound}
                                                OPTIONAL,
    routeingAreaIdentity                         [109] RAIIdentity
                                                OPTIONAL,
    chargingID                                     [1110] GPRSChargingID
                                                OPTIONAL,
    sGSNCapabilities                            [1211] SGSNCapabilities
                                                OPTIONAL,
    locationInformationGPRS                     [1312] LocationInformationGPRS
                                                OPTIONAL,
    extensions                                     [1413] SEQUENCE SIZE(1..bound.&numOfExtensions) OF
                                                ExtensionField {bound}      OPTIONAL,
    ...
}
```

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**29.078 CR 103r2**

Current Version: 3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#09  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network   
*(at least one should be marked with an X)*

**Source:** N2      **Date:** 21 July 2000

**Subject:** Comments on 'Introduction of GPRS reference in TCAP dialogue portion'

**Work item:** CAMEL Phase 3

**Category:**  
*(only one category shall be marked with an X)*  
F Correction  
A Corresponds to a correction in an earlier release  
B Addition of feature  
C Functional modification of feature  
D Editorial modification

**Release:** Phase 2  
  
Release 96  
  
Release 97  
  
Release 98  
  
Release 99  
  
Release 00

**Reason for change:** The term pre-arranged end of GPRS dialogue seems to be strange.  
Some further issues are considered.

**Clauses affected:** 8.1, new 5.7, 12.1.1.3.7, 12.1.7

**Other specs affected:** Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications

→ List of CRs:  
  
→ List of CRs:  
  
→ List of CRs:  
  
→ List of CRs:  
  
→ List of CRs:

**Other comments:**

**— New included section —**

## 5.7 User Abort Data

<Editor's note the following ASN.1 module is moved from subclause 8.1 and modified here.>

```
CAP-U-ABORT-Data {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Network(1)
modules(3) cap-u-abort-data(110) version3(2)}
```

```
DEFINITION ::= BEGIN
```

```
id-CAP-U-ABORT-Reason OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0)
mobileDomain(0) umts-Network(1) AS(1) cap-u-abort-reason(2) version3(2)}
```

```
CAP-U-ABORT-Reason-Abstract-Syntax ABSTRACT-SYNTAX ::= {CAP-U-ABORT-REASON IDENTIFIED BY
id-CAP-U-ABORT-Reason}
```

```
CAP-U-ABORT-REASON ::= ENUMERATED {
    no-reason-given(1),
    application-timer-expired(2),
    not-allowed-procedures(3),
    abnormal-processing(4),
    congestion(5),
    invalid-reference(6),
    missing-reference (7),
    overlapping-dialogue (8)
}
```

```
-- ~application-timer-expired shall be set when application timer (e.g. Tssf ) is expired.
-- ~not-allowed-fsm-procedures shall be set when received signal is not allowed in CAP
-- procedures.
-- For example, when class4 operation is received from SCF and the operation is not
-- allowed in SSF FSM.
-- (SSF FSM cannot continue state transition). (e.g. ReleaseCall operation received in
-- Waiting for End of Temporary Connection state.)
-- ~abnormal-processing shall be set when abnormal procedures occur at entity action.
-- ~congestion shall be set when requested resource is unavailable due to congestion at
-- TC user (CAP) level.
-- ~no-reason-given shall be set when any other reasons above do not apply
-- ~invalid-reference shall be set if the received destinationReference is unknown or
-- for a known destination Reference the received originationReference does not match
-- with the stored originationReference. This abort reason is used for CAP defined
-- GPRS-ReferenceNumber.
-- ~missing-reference shall be set when the destinationReference or the
-- originationReference is absent in the received message but is required to be present
-- according to the procedures in 12.1.7. This abort reason is used for CAP defined
-- GPRS-ReferenceNumber.
-- ~overlapping-dialogue shall be used by the qprsSSF to indicate to the qsmSCF that a
-- specific instance already has a TCAP dialogue open. This error cause is typically
-- obtained when both the qsmSCF and qprsSSF open a new dialogue at the same time.
```

```
END -- of CAP-U-ABORT-Data
```

**— Next modified section —**

## 8.1 gsmSCF/gprsSSF operations and arguments

...

```
CAP-U-ABORT-Data {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-Network(1)
modules(3) cap-u-abort-data(110) version3(2)}
```

```
DEFINITION ::= BEGIN
```

```
id CAP-U-ABORT-Reason OBJECT IDENTIFIER ::= {ccitt(0) identified organization(4) etsi(0)
mobileDomain(0) umts-Network(1) AS(1) cap-u-abort-reason(2) version3(2)}
```

```
CAP-U-ABORT-Reason-Abstract-Syntax ABSTRACT-SYNTAX ::= {CAP-U-ABORT-REASON IDENTIFIED BY
id CAP-U-ABORT-Reason}
```

```
CAP-U-ABORT-REASON ::= ENUMERATED {
    no-reason-given(1),
    application-timer-expired(2),
    not-allowed-procedures(3),
```

```

abnormal processing(4),
congestion(5),
invalid reference(6)
}
application timer expired shall be set when application timer (e.g. Tssf ) is expired.
not allowed fsm procedures shall be set when received signal is not allowed in CAP
procedures.
For example, when class4 operation is received from SCF and the operation is not
allowed in SSF FSM.
(SSF FSM cannot continue state transition). (e.g. ReleaseCall operation received in
Waiting for End of Temporary Connection state.)
abnormal processing shall be set when abnormal procedures occur at entity action.
congestion shall be set when requested resource is unavailable due to congestion at
TC user (CAP) level.
no reason given shall be set when any other reasons above do not apply
invalid reference shall be set if the received destinationReference is unknown or
for a known destination Reference the received originationReference does not match
with the stored originationReference. This abort reason is used for CAP defined
GPRS ReferenceNumber.
END of CAP U ABORT Data

CAP-GPRS-ReferenceNumber {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-Network(1) modules(3) cap-dialogueInformation(111) version3(2)}
DEFINITIONS ::= BEGIN

EXPORTS
  id-CAP-GPRS-ReferenceNumber-Abstract-Syntax,
  CAP-GPRS-ReferenceNumber-Abstract-Syntax_i

IMPORTS
  Integer4
FROM CS1-DataTypes {ccitt(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatatypes(2) version1(0)}
;

id-CAP-GPRS-ReferenceNumber-Abstract-Syntax OBJECT IDENTIFIER ::= {ccitt(0) identified-
organization(4) etsi(0) mobileDomain(0) umts-Network(1) as-Id(1) cap-GPRS-ReferenceNumber(5)
version3(2)}

CAP-GPRS-ReferenceNumber-Abstract-Syntax ABSTRACT-SYNTAX ::= {CAP-GPRS-ReferenceNumber IDENTIFIED
BY id-CAP-GPRS-ReferenceNumber}

CAP-GPRS-ReferenceNumber ::= SEQUENCE {
  destinationReference    [0] Integer4          OPTIONAL,
  originationReference   [1] Integer4          OPTIONAL
}
-- This IE is used to identify the relationship between SGSN and the SCP.

END -- of CAP-GPRS-ReferenceNumber-CAP DialogueInformation

```

## 8.1.1 Operation timers

...

### — Next modified section —

#### 12.1.1.3 Dialogue handling

...

##### 12.1.1.3.7 Default mapping to TC dialogue parameters

###### *Dialogue Id*

The value of this parameter is associated with the CAP invocation in an implementation dependent manner. This parameter uniquely identifies a specific TC dialogue to a remote CAP AE for an CAP AE.

###### *Application-context-name*

The application-context-name parameter is set according to the set of operations which need to be supported by the TC dialogue. The defined AC Names can be found in clauses 6 to 8.

###### *User information*

This parameter may be used by both initiating and responding application processes. This parameter shall be used for the CAP-GPRS-ReferenceNumber as defined in 12.1.7. For interfaces other than the gprsSSF-gsmSCF interface and for

SMS related messages (as in subclauses 12.1.3, 12.1.4 and 12.1.5) the receiving side may ignore this parameter if received. The User Information parameter shall be encoded in accordance with the definition provided in Q.773 (subclause 3.2) [48] and the definition of EXTERNAL type provided in X.690 [34], with the restriction that:

- a size (1..10) constraint of SEQUENCE OF EXTERNAL;
- an Object Identifier shall always be present to identify the user information and the entity which sent it;
- a single-ASN-1-type is used for encoding.

For the use of CAP defined TC-U-Abort reason, see the ASN.1 notation in the subclause [8.15.7](#).

For the use of CAP defined CAP-GPRS-ReferenceNumber, see subclause 12.1.7. For the abstract syntax of CAP defined CAP-GPRS-ReferenceNumber, see the ASN.1 notation in the subclause 8.1.

#### *Component present*

This parameter is used by TC-USER as described in ETS 300 287-1 [6].

#### *Termination*

The value of the release method parameter of the TC-END request primitive is set by TC-USER according to the rules as stated in subclauses 12.1.2.1.1 and 12.1.2.1.2.

#### *Quality of service*

The quality of service of TC request primitives is set by the TC-USER to the following value:

- Sequencing requested;
- return option, this parameter is set by TC-USER in an implementation dependent manner.

### **— Next modified section —**

## 12.1.7 gprsSSF-gsmSCF interface

### 12.1.7.1 Normal procedures

#### 12.1.7.1.1 TC-dialogues and relationships

A **relationship**, i.e. a GPRS dialogue, exists between gprsSSF and gsmSCF if at least one of the following conditions is fulfilled:

- There is at least one EDP armed.
- At least one report is pending.
- gprsSSF is in a TDP or EDP in state WaitingForInstructions.

The GPRS dialogue can consist of multiple consecutive **TCAP-dialogues**. A GPRS dialogue is identified by a GPRS-ReferenceNumber consisting of the originationReference and the destinationReference. One GPRS-Reference is assigned by the SGSN and shall be unique within this SGSN. The other GPRS-Reference is assigned by the gsmSCF and shall be unique within this gsmSCF.

The **TCAP**-dialogues are closed and (re)opened whenever necessary.

#### 12.1.7.1.2 Use of the GPRS Reference

For the use of CAP defined GPRS-ReferenceNumber, see also the ASN.1 notation in the subclause 8.1.

When the gprsSSF sends the first operation for a new GPRS dialogue (InitialDPGPRS), the gprsSSF shall include a GPRS Reference Number in the TCAP message. This GPRS Reference Number shall consist of the **SGSN Process Id**

as originationReference, which is internally allocated by the gprsSSF. This number is used by the gprsSSF to associate an incoming TCAP message with an internal GPRS Process.

When the gsmSCF has received the InitialDPGPRS operation, it shall store the SGSN Process ID and allocate an **SCEP Process Id** which is used by the gsmSCF to associate an incoming TCAP message with an internal SCEP Process.

The SCP shall include the GPRS Reference Number in the first **TCAP-TC-CONTINUE** message, **SGSN Process Id** in destinationReference and **SCEP Process Id** in originationReference, returned to the gprsSSF.

When the gprsSSF receives the first TCAP message from the SCP for this **GPRS** dialogue, the gprsSSF shall store the **SCEP** Process Id together with the SGSN Process Id.

From here onwards all the TCAP messages that open a new TCAP dialogue shall include the GPRS Reference Number consisting of the originationReference and the destinationReference to associate the internal process in the origination entity and the destination entity, respectively, until the end of the relationship between these processes.

For any TC-CONTINUE in the existing TCAP dialogue, transporting the GPRS Reference Number is not needed except for the first response after the InitialDPGPRS operation.

#### 12.1.7.1.3 gprsSSF-to-gsmSCF messages

This subclause defines the normal procedures for TC messages from the gprsSSF to the gsmSCF.

##### *gsmgprsSSF-FSM related messages*

A GPRS dialogue and a TCAP dialogue shall be established when the gprsSSF moves from the state **Idle** to the state **Waiting for Instructions**. The InitialDPGPRS operation shall be transmitted in the same **TCAP** message, i.e. TC-BEGIN. It shall contain the GPRS-Reference as assigned by the SGSN in the originationReference. The gprsSSF may initiate the subsequent TCAP dialogues for this GPRS dialogue with the following operations:

- ApplyChargingReportGPRS
- EntityReleasedGPRS
- EventReportGPRS

The gprsSSF shall memorise the gsmSCF address used for InitialDPGPRS, and use it in the further TCAP dialogues. The gsmSCF shall memorise the gprsSSF address received along with the InitialDPGPRS, and use it in the further TCAP dialogues for the relationship between these processes.

The gsmSCF may open subsequent TCAP dialogues with the following CAP operations:

- ActivityTestGPRS;
- ApplyChargingGPRS;
- CancelGPRS;
- FurnishChargingInformationGPRS;
- ReleaseGPRS;
- RequestReportGPRSEvent;
- SendChargingInformationGPRS.

The CAP operation that opens a TCAP dialogue shall be sent with a TC-BEGIN request primitive. This message shall contain the GPRS-ReferenceNumber assigned by the sender of this message in the originationReference. If the operation opens a subsequent TCAP dialogue this message shall contain also the previously received destinationReference. If an operation opens a GPRS dialogue then the TCAP message reply shall contain the originationReference as assigned by the sender, i.e. the gsmSCF.

The TCAP dialogue shall be closed for the idle periods, i.e. when the gprsSSF moves from the state Waiting for Instructions state to the state Idle state, if the gprsSSF is in the state Monitoring state and has received all replies or time-outs for the operations sent, after standalone operations of the SCF in Monitoring state if gprsSSF is not going to the Idle state (ActivityTestGPRS, ApplyChargingGPRS, CancelGPRS, FurnishChargingInformationGPRS, RequestReportGPRSEvent, SendChargingInformationGPRS), or in at the end of a GPRS dialogue. Each TCAP

*dialogue* shall be terminated by the gprsSSF using TC-END (basic end). Similarly each GPRS dialogue may be terminated in a pre arranged way or explicitly by using EntityReleasedGPRS operation. The following operations can cause the end of the GPRS dialogue:

- ContinueGPRS;
- ConnectGPRS;
- ApplyChargingReportGPRS result;
- EntityReleasedGPRS result;
- EventReportGPRS (EDP-N) result;
- CancelGPRS;
- ReleaseGPRS;
- RequestReportGPRSEvent (disarming of DPs).

When the gprsSSF makes a non-error case state transition to the state **Idle** and there is one or more pending operation and TCAP dialogue is established, TCAP dialogue may be terminated by TC-END primitive with zero component(s) after all pending operations have been sent. When the gsmSSF sends the last EventReportGPRS or ApplyChargingReportGPRS the relationship-GPRS dialogue may be ended from the gprsSSF by a TC-END request primitive with basic end.

In the case that there is no pending operation, result nor error, and TCAP dialogue is established, TCAP dialogue shall be terminated by TC-END primitive with zero component.

In the case where a PDP context release or detach is initiated by any other entity than an gsmSCF, the gprsSSF shall end a GPRS dialogue relationship with the EntityReleasedGPRS operation if the gprsSSF has no armed DP to report nor pending ApplyChargingReportGPRS which should reported.

In the case of overlapping dialogues for the same GPRS dialogue the gsmSCF opened TCAP dialogue is closed\_aborted by the gprsSSF with the an error code abort reason overlapping dialogue as specified in subclause 5.7.10. This abort reason is used to indicate to the gsmSCF that a specific instance already has a TCAP dialogue open. It is typically obtained when both the gsmSCF and gprsSSF open a new dialogue at the same time. While the gprsSSF waits for a response to an operation sent in TC-BEGIN it may receive an operation from the gsmSCF in TC-BEGIN. In such cases the dialogue opened by the gprsSSF is maintained and the dialogue opened by the gsmSCF is aborted with this abort reason.

#### *SSME-FSM related messages*

The following procedures shall be followed:

- The dialogue shall be ended with basic end when the ActivityTestGPRS Return Result is sent.

#### 12.1.7.1.4 gsmSCF-to-gprsSSF messages

This subclause defines the normal procedures for TC messages from the gsmSCF to the gprsSSF.

In the case of overlapping dialogues for the same relationship the gsmSCF opened dialogue is closed by the gprsSSF with an error code as specified in clause 10. The gsmSCF shall first respond normally to the operations sent by the gprsSSF, and then decide on the further actions.

#### *SCME-FSM related messages*

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

- A new subsequent TCAP dialogue is established when the ActivityTestGPRS operation is sent.

## 12.1.7.2 Abnormal procedures

### 12.1.7.2.1 gsmSCF-to-gprsSSF messages

This subclause defines the abnormal procedures for TC messages from the gsmSCF to the gprsSSF.

Considering that gprsSSF do not have the logic to recover from error cases detected on the gsmSCF-gprsSSF interface, the following shall apply:

- Operation errors and rejection of TCAP components shall be transmitted to the gprsSSF with a TC-END request primitive, basic end.
- The GPRS dialogue shall be closed.

If, in violation of the above procedure, an ERROR or REJECT component is received with a TC-CONTINUE indication primitive, the gprsSSF shall abort the dialogue with a TC-U-ABORT request primitive.

### 12.1.7.2.2 gprsSSF-to-gsmSCF messages

This subclause defines the abnormal procedures for TC messages from the gprsSSF to the gsmSCF.

Operation errors and rejection of TCAP components shall be transmitted to the gsmSCF according to the following rules:

- The dialogue shall be maintained when the preceding message, which contained the erroneous component, indicated that the dialogue shall be maintained. I.e. the error or reject shall be transmitted with a TC-CONTINUE request primitive if the erroneous component was received with a TC-CONTINUE indication primitive.  
On receipt of an ERROR or REJECT component the gsmSCF decides on further processing. It may either continue, explicitly end or abort the dialogue.
- In all other situations the dialogue shall no longer be maintained. I.e. the error or reject shall be transmitted with a TC-END request primitive, basic end, if the erroneous component was received with a TC-BEGIN indication primitive. The GPRS dialogue shall be closed.
- on expiration of application timer  $T_{SSF}$ , dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason, regardless of TCAP dialogue is established or not.

If the error processing in the gprsSSF leads to the case where the gprsSSF is not able to process further gsmSCF operations while the dialogue is to be maintained, the gprsSSF aborts the dialogue with a TC-END request primitive with basic end or a TC-U-ABORT request primitive, depending on whether any pending ERROR or REJECT component is to be sent or not.

The gprsSSF can end a dialogue with a TC-U-ABORT request primitive in case GPRS dialogue release is initiated by any other entity than the gsmSCF and the gprsSSF has no pending call information requests (or pending requests which should be treated in the same way, i.e., ApplyCharging nor any armed EDP to notify the gsmSCF of the GPRS dialogue (for alternative way, see subclause 12.1.78.1.1).

## CHANGE REQUEST

*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

29.078 CR 104r1

Current Version: 3.4.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#09  
*list expected approval meeting # here*

for approval  
for information

strategic  
non-strategic

(for SMG  
use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM ME UTRAN / Radio Core Network    
*(at least one should be marked with an X)*

**Source:** N2      **Date:** 21 July 2000

**Subject:** Revised GPRS TCAP reference in TCAP dialogue portion

**Work item:** CAMEL Phase 3

<b>Category:</b> <i>(only one category shall be marked with an X)</i>	F Correction A Corresponds to a correction in an earlier release B Addition of feature C Functional modification of feature D Editorial modification	<input checked="" type="checkbox"/>	<b>Release:</b> Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00
--	--	-------------------------------------	--

**Reason for change:** After the last N2 meeting in May, various comments were given to the CR 29.078-087r3 (N2-000251). This CR reflects the comments as follows.

- Due to the error "overlappingDialogue" moved to CAP-U-ABORT-REASON, this error was deleted from the operations which contains it. Also the description of this error in the clauses 5 and 10 are deleted.
- unknownGPRSReference deleted in eventReportGPRS operation as indicated in the CR 29.078-087r3.

**Clauses affected:** 5.2, 5.4, 8.1, 10.1.18

<b>Other specs affected:</b>	Other 3G core specifications Other GSM core specifications MS test specifications BSS test specifications O&M specifications	<input type="checkbox"/> → List of CRs: <input type="checkbox"/> → List of CRs:
------------------------------	--	---

**Other comments:**

\*\*\* First Modified Part in 5.2 \*\*\*

## 5.2 Error types

```
CAP-errortypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-errortypes(51) version3(2)}
-- This module contains the type definitions for the CAP Error Types.
-- Where a parameter of type CHOICE is tagged with a specific tag value, the tag is automatically
-- replaced with an EXPLICIT tag of the same value.

DEFINITIONS IMPLICIT TAGS ::= BEGIN

IMPORTS

    ros-InformationObjects,
    datatypes,
    errorcodes
FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}

    ERROR
FROM Remote-Operations-Information-Objects ros-InformationObjects

    InvokeID,
    UnavailableNetworkResource
FROM CAP-datatYPES datatypes

    errcode-canceled,
    errcode-cancelFailed,
    errcode-eTCFailed,
    errcode-improperCallerResponse,
    errcode-missingCustomerRecord,
    errcode-missingParameter,
    errcode-parameterOutOfRange,
    errcode-requestedInfoError,
    errcode-systemFailure,
    errcode-taskRefused,
    errcode-unavailableResource,
    errcode-unexpectedComponentSequence,
    errcode-unexpectedDataValue,
    errcode-unexpectedParameter,
    errcode-unknownLegID,
    errcode-unknownPDPID,
    errcode-overlappingDialogue
FROM CAP-errorcodes errorcodes

;

-- TYPE DEFINITION FOR CAP ERROR TYPES FOLLOWS

canceled ERROR      ::= {
    CODE      errcode-canceled
}
-- The operation has been canceled.

cancelFailed ERROR      ::= {
    PARAMETER SEQUENCE {
        problem          [0] ENUMERATED {
            unknownOperation   (0),
            tooLate           (1),
            operationNotCancellable (2)
        },
        operation         [1] InvokeID,
        ...
    }
    CODE      errcode-cancelFailed
}
-- The operation failed to be canceled.

eTCFailed ERROR      ::= {
    CODE      errcode-eTCFailed
}
```

```
-- The establish temporary connection failed.

improperCallerResponse ERROR ::= {
    CODE      errcode-improperCallerResponse
}
-- The caller response was not as expected.

missingCustomerRecord ERROR ::= {
    CODE      errcode-missingCustomerRecord
}
-- The Service Logic Program could not be found in the gsmSCF.

missingParameter ERROR      ::= {
    CODE      errcode-missingParameter
}
-- An expected optional parameter was not received.

parameterOutOfRange ERROR   ::= {
    CODE      errcode-parameterOutOfRange
}
-- The parameter was not as expected (e.g. missing or out of range).

requestedInfoError ERROR   ::= {
    PARAMETER ENUMERATED {
        unknownRequestedInfo      (1),
        requestedInfoNotAvailable (2)
    }
    CODE      errcode-requestedInfoError
}
-- The requested information cannot be found.

systemFailure ERROR       ::= {
    PARAMETER UnavailableNetworkResource
    CODE      errcode-systemFailure
}
-- The operation could not be completed due to a system failure at the serving physical entity.

taskRefused ERROR         ::= {
    PARAMETER ENUMERATED {
        generic                  (0),
        unobtainable              (1),
        congestion                (2)
    }
    CODE      errcode-taskRefused
}
-- An entity normally capable of the task requested cannot or chooses not to perform the task at
-- this time. This includes error situations like congestion and unobtainable address as used in
-- e.g. the connect operation.

unavailableResource ERROR  ::= {
    CODE      errcode-unavailableResource
}
-- A requested resource is not available at the serving entity.

unexpectedComponentSequence ERROR ::= {
    CODE      errcode-unexpectedComponentSequence
}
-- An incorrect sequence of Components was received (e.g. "DisconnectForwardConnection"
-- followed by "PlayAnnouncement").

unexpectedDataValue ERROR  ::= {
    CODE      errcode-unexpectedDataValue
}
-- The data value was not as expected (e.g. routing number expected but billing number received)

unexpectedParameter ERROR  ::= {
    CODE      errcode-unexpectedParameter
}
-- A parameter received was not expected.

unknownLegID ERROR        ::= {
    CODE      errcode-unknownLegID
}
-- Leg not known to the gsmSSF.

unknownPDPID ERROR        ::= {
    CODE      errcode-unknownPDPID
}
```

-- PDPID not known by the receiving entity.

~~overlappingDialogue ERROR ::= {  
  CODE errcode overlappingDialogue  
}  
A dialogue exists already for the same relationship.~~

END

\*\*\* Next Modified Part in 5.4 \*\*\*

## 5.4 Error codes

CAP-errorcodes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)  
modules(3) cap-errorcodes(57) version3(2)}

DEFINITIONS ::= BEGIN

IMPORTS

  ros-InformationObjects  
  FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)  
    umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}

  Code  
  FROM Remote-Operations-Information-Objects ros-InformationObjects

;

errcode-canceled	Code ::= local: 0
errcode-cancelFailed	Code ::= local: 1
errcode-eTCFailed	Code ::= local: 3
errcode-improperCallerResponse	Code ::= local: 4
errcode-missingCustomerRecord	Code ::= local: 6
errcode-missingParameter	Code ::= local: 7
errcode-parameterOutOfRange	Code ::= local: 8
errcode-requestedInfoError	Code ::= local: 10
errcode-systemFailure	Code ::= local: 11
errcode-taskRefused	Code ::= local: 12
errcode-unavailableResource	Code ::= local: 13
errcode-unexpectedComponentSequence	Code ::= local: 14
errcode-unexpectedDataValue	Code ::= local: 15
errcode-unexpectedParameter	Code ::= local: 16
errcode-unknownLegID	Code ::= local: 17
errcode-unknownPDPID	Code ::= local: 18
<b>errcode-overlappingDialogue</b>	<b>Code ::= local: 20</b>

END

\*\*\* Next Modified Part in 8.1 \*\*\*

## 8.1 gsmSCF/gprsSSF operations and arguments

CAP-gprsSSF-gsmSCF-ops-args {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)  
umts-network(1) modules(3) cap-GPRS-ops-args(107) version3(2)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

-- This module contains the operations and operation arguments used for the  
-- gprsSSF - gsmSCF interface, for the control of GPRS.

-- The table in section 2.1 lists the specifications that contain the modules  
-- that are used by CAP.

IMPORTS

  errortypes,  
  datatypes,  
  operationcodes,  
  classes,  
  ros-InformationObjects  
  FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)

```
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)

OPERATION
FROM Remote-Operations-Information-Objects ros-InformationObjects

ServiceKey
FROM CS1-DataTypes {ccitt(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
modules(0) cs1-datatatypes(2) version1(0)}

MiscCallInfo
FROM CS2-datatatypes {ccitt(0) identified-organization(4) etsi(0) inDomain(1) in-network(1)
cS2(20) modules(0) in-cs2-datatypes (0) version1(0)}

IMSI,
ISDN-AddressString
FROM MAP-CommonDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-CommonDataTypes(18) version6(6)}

PARAMETERS-BOUND
FROM CAP-classes classes

opcode-activityTestGPRS,
opcode-applyChargingGPRS,
opcode-applyChargingReportGPRS,
opcode-cancelGPRS,
opcode-connectGPRS,
opcode-continueGPRS,
opcode-entityReleasedGPRS,
opcode-eventReportGPRS,
opcode-furnishChargingInformationGPRS,
opcode-initialDPGPRS,
opcode-releaseGPRS,
opcode-requestReportGPRSEvent,
opcode-resetTimerGPRS,
opcode-sendChargingInformationGPRS
FROM CAP-operationcodes operationcodes

AccessPointName {},
GPRSCause {},
ChargingCharacteristics,
ChargingResult,
FCIGPRSBillingChargingCharacteristics,
GPRSChargingID,
GPRSEventSpecificInformation {},
GPRSEvent,
GPRSEventType,
GPRSMSClass,
PDPID,
PDPType,
QualityOfService,
RAIdentity,
SCIGPRSBillingChargingCharacteristics,
SGSNCapabilities,
TimeAndTimezone {},
TimerID,
TimerValue
FROM CAP-datatypes datatypes

missingCustomerRecord,
missingParameter,
parameterOutOfRange,
systemFailure,
taskRefused,
unexpectedComponentSequence,
unexpectedDataValue,
unexpectedParameter,
unknownPDPID-
overlappingDialogue
FROM CAP-errortypes errortypes

;

activityTestGPRS OPERATION ::= {
    RETURN RESULT TRUE
    ERRORS {
    OverlappingDialogue
}
    CODE opcode-activityTestGPRS }
```

(DRAFT)

```
-- Direction: gsmSCF -> gprsSSF, Timer: Tatg
-- This operation is used to check for the continued existence of a relationship between the gsmSCF
-- and gprsSSF. If the relationship is still in existence, then the gprsSSF will respond. If no
-- reply is received, then the gsmSCF will assume that the gprsSSF has failed in some way
-- and will take the appropriate action.

applyChargingGPRS                                OPERATION ::= {
    ARGUMENT
        ApplyChargingGPRSArg
    RETURN RESULT FALSE
    ERRORS {
        missingParameter |
        unexpectedComponentSequence |
        unexpectedParameter |
        unexpectedDataValue |
        parameterOutOfRange |
        systemFailure |
        taskRefused |
        unknownPDPID +
        overlappingDialogue
    }
    CODE opcode-applyChargingGPRS
}
-- Direction gsmSCF -> gprsSSF, Timer Tacg
-- This operation is used for interacting from the gsmSCF with the gprsSSF CSE-controlled
-- GPRS session or PDP Context charging mechanism.
```

### \*\*\* Next Modified Part in 8.1 \*\*\*

```
cancelGPRS                                OPERATION ::= {
    ARGUMENT
        CancelGPRSArg
    RETURN RESULT FALSE
    ERRORS {
        missingParameter |
        taskRefused |
        unknownPDPID +
        OverlappingDialogue
    }
    CODE opcode-cancelGPRS
}
-- Direction: gsmSCF -> gprsSSF, Timer: Tcag
-- This generic operation cancels all previous requests,
-- i.e. all EDPs and reports can be cancelled by the gsmSCF.

CancelGPRSArg ::= SEQUENCE {
    pDPID [0] PDPID OPTIONAL
}
```

### \*\*\* Next Modified Part in 8.1 \*\*\*

```
eventReportGPRS {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT
        EventReportGPRSArg {bound}
    RETURN RESULT TRUE
    ERRORS {
        unknownGPRSReference +
        unknownPDPID
    }
    CODE opcode-eventReportGPRS
}
-- Direction gprsSSF -> gsmSCF, Timer Tereg
-- This operation is used to notify the gsmSCF of a GPRS session or PDP context related
-- events (e.g. PDP context activation) previously requested by the gsmSCF in a
-- RequestReportGPRSEventoperation.

EventReportGPRSArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    gPRSEventType [0] GPRSEventType,
    miscGPRSInfo [1] MiscCallInfo DEFAULT {messageType request},
    gPRSEventSpecificInformation [2] GPRSEventSpecificInformation {bound} OPTIONAL,
    pDPID [3] PDPID OPTIONAL
}

furnishChargingInformationGPRS {PARAMETERS-BOUND : bound} OPERATION ::= {
```

(DRAFT)

```
    ARGUMENT      FurnishChargingInformationGPRSArg {bound}
    RETURN RESULT FALSE
    ERRORS      {missingParameter |
                 taskRefused |
                 unexpectedComponentSequence |
                 unexpectedDataValue |
                 unexpectedParameter |
                 unknownPDPID+}

    | overlappingDialogue
    |
    |     }
    CODE      opcode-furnishChargingInformationGPRS
    }

-- Direction: gsmSCF -> gprsSSF, Timer: Tfcig
-- This operation is used to request the gprsSSF to generate, register a logical record or to
-- include some information in the default logical GPRS record.
-- The registered logical record is intended for off line charging of the GPRS session
-- or PDP Context.
```

**\*\*\* Next Modified Part in 8.1 \*\*\***

```
releaseGPRS {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT
        ReleaseGPRSArg {bound}
    RETURN RESULT FALSE
    ERRORS {
        missingParameter |
        taskRefused |
        unknownPDPID+
    }
    | overlappingDialogue
    |
    CODE opcode-releaseGPRS
    }

-- Direction: gsmSCF -> gprsSSF, Timer: Trg
-- This operation is used to tear down an existing GPRS session or PDP Context at any phase.
```

```
ReleaseGPRSArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    gprsCause           [0] GPRSCause {bound},
    pDPID               [1] PDPID OPTIONAL
}
```

```
requestReportGPRSEvent {PARAMETERS-BOUND : bound} OPERATION ::= {
```

```
    ARGUMENT
        RequestReportGPRSEventArg {bound}
    RETURN RESULT FALSE
    ERRORS {
```

```
        missingParameter |
        parameterOutOfRange |
        systemFailure |
        taskRefused |
        unexpectedComponentSequence |
        unexpectedDataValue |
        unexpectedParameter |
        unknownPDPID+
    }
    | overlappingDialogue
    |
    CODE opcode-requestReportGPRSEvent
    }
```

```
-- Direction: gsmSCF -> gprsSSF, Timer: Trrqe
-- This operation is used to request the gprsSSF to monitor for an event (e.g., GPRS events
-- such as attach or PDP Context activation), then send a notification back to the
-- gsmSCF when the event is detected.
```

```
RequestReportGPRSEventArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    gPRSEvent           [0] SEQUENCE SIZE (1..bound.&numOfGPRSEvents)   OF GPRSEvent,
    pDPID               [1] PDPID           OPTIONAL
}
-- Indicates the GPRS related events for notification.
```

**\*\*\* Next Modified Part in 8.1 \*\*\***

```
sendChargingInformationGPRS {PARAMETERS-BOUND: bound} OPERATION ::= {
    ARGUMENT      SendChargingInformationGPRSArg { bound}
    RETURN RESULT FALSE
```

```
    ERRORS {missingParameter |
    unexpectedComponentSequence |
    unexpectedParameter |
    parameterOutOfRange |
    systemFailure |
    taskRefused |
    unexpectedDataValue |
    unknownPDPID+}

overlappingDialogue
}
CODE opcode-sendChargingInformationGPRS
}
-- Direction: gsmSCF -> gprsSSF, Timer: Tscig
-- This operation is used to instruct the gprsSSF on the charging information which the
-- gprsSSF shall send to the Mobile Station by means of GSM access signalling.

SendChargingInformationGPRSArg {PARAMETERS-BOUND: bound} ::= SEQUENCE {
    SCIGPRSBillingChargingCharacteristics [0] SCIGPRSBillingChargingCharacteristics { bound},
    ...
}

END
```

\*\*\* Next Modified Part in 10.1.18 \*\*\*

## 10.1.18 OverlappingDialogue

### 10.1.18.1 General description

#### 10.1.18.1.1 Error description

This error is used to indicate to the gsmSCF that a specific instance already has a TCAP dialogue open. This error cause typically is obtained when both the gsmSCF and gprsSSF open a new dialogue at the same time. While the gprsSSF waits for response to an operation send in TC-BEGIN it may receive an operation from the gsmSCF in TC-BEGIN. In such cases the dialogue opened by the gprsSSF is maintained and the dialogue opened by the gsmSCF is closed with this error code.

### 10.1.18.2 Operations gsmSCF→gprsSSF

#### GPRS Related

[ApplyChargingGPRS](#)

[CancelGPRS](#)

[FurnishChargingInformationGPRS](#)

[ReleaseGPRS](#)

[RequestReportGPRSEvent](#)

[SendChargingInformationGPRS](#)

## 10.2 Entity related error procedures

The following subclauses define the error handling for the entity related errors. Since the error situations are not originated by the reception of an operation, the invoking entity is denoted here as the entity at which the error situation is detected. The responding entity is the entity which receives the error report.

The TCAP services used for reporting errors are described in clause 12.

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

**29.078 CR 106r3**

Current Version: 3.4.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#09  
list expected approval meeting # here ↑

for approval  
for information

strategic  
non-strategic

  
(for SMG  
Use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (at least one should be marked with an X)      (U)SIM        ME        UTRAN / Radio        Core Network   

**Source:** N2      **Date:** 4/8/00

**Subject:** Alignment of 29.078 for location info GPRS

**Work item:** Camel phase 3

<b>Category:</b> <small>(only one category shall be marked with an X)</small>	F Correction A Corresponds to a correction in an earlier release B Addition of feature C Functional modification of feature D Editorial modification	<input checked="" type="checkbox"/>	<b>Release:</b> Phase 2 Release 96 Release 97 Release 98 Release 99 Release 00
--	--	-------------------------------------	--

**Reason for change:** The purpose of the CR is to add the Routing area , and the SLSA id in 29.078.location information gprs.

**Clauses affected:** 29.078 clause 5.1 data type

<b>Other specs affected:</b>	Other 3G core specifications Other GSM core specifications MS test specifications BSS test specifications O&M specifications	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	→ List of CRs: 23.078 198 rev3 → List of CRs: → List of CRs: → List of CRs: → List of CRs:
------------------------------	--	--	--

**Other comments:**



help.doc

<----- double-click here for help and instructions on how to create a CR.

*Extract of 29.078 paragraph 5.1 :*

```
LocationInformationGPRS ::= SEQUENCE {
    cellGlobalIdOrServiceAreaIdOrLAI [0] OCTET STRING (SIZE(5..7)) OPTIONAL,
    routingAreaIdentity [1] OCTET STRING (SIZE(5..7)) OPTIONAL,
    geographicalInformation [2] OCTET STRING (SIZE (8)) OPTIONAL,
    sgsn-Number [23] ISDN-AddressString OPTIONAL,
    selectedLSAIdentity [4] LSAIdentity OPTIONAL,
    extensionContainer [5] ExtensionContainer OPTIONAL,
    ...
}

-- CellGlobalIdOrServiceAreaIdOrLAI and LSAIdentity are is coded in accordance
-- with 3G TS 29.002 [13].
-- RoutingAreaIdentity is coded in accordance with 3G TS 29.060 [43].
-- GeographicalInformation refers to geographical Information as defined
-- in 3G TS 23.032 [44].
```

## CHANGE REQUEST

29.078 CR 109

Current Version: 3.4.0

For submission to: CN #09

for approval   
for information

strategic   
non-strategic

Proposed change affects: (U)SIM  ME  UTRAN / Radio  Core Network

Source: N2

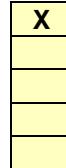
Date: 14.07.2000

Subject: Correction to GPRS CONTRACT

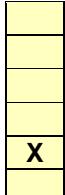
Work item: CAMEL Phase 3

Category:

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



Release: Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



Reason for change:

The GPRS CONTRACT ‘cap3GsmScfToGprsSsf’ specifies that the gsmSCF may initiate a TCAP dialogue with the ‘gprsTimerPackage’ PACKAGE. This package contains operation ResetTimerGPRS.

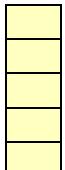
This is incorrect; the gsmSCF can not start a TCAP dialogue with operation ResetTimerGPRS.

PACKAGE ‘gprsTimerPackage’ shall therefore be removed from the INITIATOR of CONTRACT ‘cap3GsmScfToGprsSsf’.

Clauses affected: 8.2.1

Other specs affected:

- Other 3G core specifications
- Other GSM core specifications
- MS test specifications
- BSS test specifications
- O&M specifications



- List of CRs:

Other comments:

**— First modified section —**

## 8.2 gsmSCF/gprsSSF contracts, packages and ACs

### 8.2.1 gprsSSF/gsmSCF ASN.1 module

```
CAP-gprsSSF-gsmSCF-pkgs-contracts-acs {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gprsSSF-gsmSCF-pkgs-contracts-acs(108) version3(2)}

DEFINITIONS ::= BEGIN

-- This module specifies the Operation Packages, Contracts, Application Contexts
-- and Abstract Syntaxes used for the gprsSSF - gsmSCF interface, for the
-- control of GPRS.

-- The table in section 2.1 lists the specifications that contain the modules
-- that are used by CAP.

IMPORTS

    PARAMETERS-BOUND,
    cAPSpecificBoundSet
FROM CAP-classes classes

    CONTRACT,
    OPERATION-PACKAGE,
    OPERATION
FROM Remote-Operations-Information-Objects ros-InformationObjects

    TCMessage {}
FROM TCAPMessages tc-Messages

    APPLICATION-CONTEXT,
    dialogue-abstract-syntax
FROM TC-Notation-Extensions tc-NotationExtensions

    activityTestGPRS {},
    applyChargingGPRS {},
    applyChargingReportGPRS {},
    cancelGPRS {},
    connectGPRS {},
    continueGPRS {},
    entityReleasedGPRS {},
    furnishChargingInformationGPRS {},
    initialDPPGPRS {},
    releaseGPRS {},
    eventReportGPRS {},
    requestReportGPRSEvent {},
    resetTimerGPRS {},
    sendChargingInformationGPRS {}
FROM CAP-gprsSSF-gsmSCF-ops-args gprsSSF-gsmSCF-Operations

    id-ac-CAP-gprssf-gsmSCF-AC,
    id-cap3GprssfTogsmScf,
    id-cap3GsmScfToGprssf,
    id-as-gprsSSF-gsmSCF-AS,
    id-as-gsmSCF-gprsSSF-AS,
    classes,
    ros-InformationObjects,
    tc-Messages,
    tc-NotationExtensions,
    gprsSSF-gsmSCF-Operations
FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}

;

-- Application Contexts

cap3-gprssf-scfAC APPLICATION-CONTEXT ::= {
    CONTRACT                  cap3GprssfToScf
    DIALOGUE MODE             structured
    ABSTRACT SYNTAXES          {dialogue-abstract-syntax |
                                gprsSSF-fgsmSCFAbstractSyntax}
    APPLICATION CONTEXT NAME   id-ac-CAP-gprssf-gsmSCF-AC}

cap3-gsmscf-gprssfAC APPLICATION-CONTEXT ::= {
    CONTRACT                  cap3GsmScfToGprssf
    DIALOGUE MODE             structured
    ABSTRACT SYNTAXES          {dialogue-abstract-syntax |
```

```
APPLICATION CONTEXT NAME      gsmSCF-gprsSSFAbstractSyntax}
                             id-ac-CAP-gsmSCF-gprSSF-AC}
```

-- Contracts

```
cap3GprsSsfToScf CONTRACT ::= {
-- dialogue initiated by gprsSSF with InitialDPGPRS, ApplyChargingReportGPRS,
-- EntityReleaseGPRS and EventReportGPRS Operations
  INITIATOR CONSUMER OF
  {
    gprSscfActivationPackage {cAPSpecificBoundSet} |
    gprsEventHandlingPackage {cAPSpecificBoundSet} |
    gprsChargingPackage {cAPSpecificBoundSet} |
    gprsExceptionInformationPackage
  }
  RESPONDER CONSUMER OF
  {
    gprsConnectPackage {cAPSpecificBoundSet} |
    gprsProcessingPackage {cAPSpecificBoundSet} |
    gprsReleasePackage {cAPSpecificBoundSet} |
    gprsEventHandlingPackage {cAPSpecificBoundSet} |
    gprsTimerPackage {cAPSpecificBoundSet} |
    gprsBillingPackage {cAPSpecificBoundSet} |
    gprsChargingPackage {cAPSpecificBoundSet} |
    gprsCancelPackage {cAPSpecificBoundSet} |
    gprsChargeAdvicePackage {cAPSpecificBoundSet}
  }
  ID      id-cap3GprsSsfToScf
}

cap3GsmScfToGprsSsf CONTRACT ::= {
-- dialogue initiated by gsmSCF with ApplyCharginGPRS, ActivityTestGPRS,
-- CancelGPRS, FurnishChargingInformationGPRS, ReleaseGPRS,
-- RequestReportGPRSEvent and SendChargingInformationGPRS Operations
  INITIATOR CONSUMER OF
  {
    gprsReleasePackage {networkSpecificBoundSet} |
    gprsEventHandlingPackage {networkSpecificBoundSet} |
    gprsTimerPackage {networkSpecificBoundSet} |
    gprsBillingPackage {networkSpecificBoundSet} |
    gprsChargingPackage {networkSpecificBoundSet} |
    gprsActivityTestPackage {networkSpecificBoundSet} |
    gprsCancelPackage {networkSpecificBoundSet} |
    gprsChargeAdvicePackage {networkSpecificBoundSet}
  }
  RESPONDER CONSUMER OF
  {
  }
  ID      id-cap3GsmScfToGprsSsf
}
```

-- Operation Packages

```
gprsScfActivationPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {initialDPGPRS {bound}}
  ID          id-package-gprsScfActivation}
gprsConnectPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {connectGPRS {bound}}
  ID          id-package-gprsConnect}
gprsProcessingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {continueGPRS {bound}}
  ID          id-package-gprsContinue}
gprsReleasePackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {releaseGPRS {bound}}
  ID          id-package-gprsRelease}
gprsEventHandlingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {requestReportGPRSEvent {bound}}
  SUPPLIER INVOKES {eventReportGPRS {bound}}
  ID          id-package-gprsEventHandling}
gprsExceptionInformationPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {entityReleasedGPRS {bound}}
  ID          id-package-gprSEceptionInformation}
gprsTimerPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {resetTimerGPRS {bound}}
  ID          id-package-gprSTimer}
gprsBillingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {furnishChargingInformationGPRS {bound}}
  ID          id-package-gprsBilling}
gprsChargingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {applyChargingGPRS {bound}}
  SUPPLIER INVOKES {applyChargingReportGPRS {bound}}
  ID          id-package-gprsCharging}
gprsChargeAdvicePackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {sendChargingInformationGPRS {bound}}}
```

```

ID      id-package-gprsChargeAdvice}
gprsActivityTestPackage OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {activityTestGPRS {bound}}
    ID      id-package-gprsActivityTest}
gprsCancelPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {cancelGPRS {bound}}
    ID      id-package-gprsCancel}

-- Abstract Syntaxes

gprsSSF-gsmSCFAbstractSyntax ABSTRACT-SYNTAX ::= {
    GenericGprsSSF-gsmSCF-PDUs
    IDENTIFIED BY id-as-gprsSSF-gsmSCF-AS}

GenericGprsSSF-gsmSCF-PDUs ::= TCMessages {{GprsSsfToGsmScfInvokable},
                                             {GprsSsfToGsmScfReturnable}}

GprsSsfToGsmScfGenericInvokable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSet} |
    applyChargingGPRS {cAPSpecificBoundSet} |
    applyChargingReportGPRS {cAPSpecificBoundSet} |
    cancelGPRS {cAPSpecificBoundSet} |
    connectGPRS {cAPSpecificBoundSet} |
    entityReleasedGPRS {cAPSpecificBoundSet} |
    eventReportGPRS {cAPSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSpecificBoundSet} |
    initialDPGPRS {cAPSpecificBoundSet} |
    releaseGPRS {cAPSpecificBoundSet} |
    requestReportGPRSEvent {cAPSpecificBoundSet} |
    resetTimerGPRS {cAPSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSpecificBoundSet}
}

GprsSsfToGsmScfReturnable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSet} |
    applyChargingGPRS {cAPSpecificBoundSet} |
    applyChargingReportGPRS {cAPSpecificBoundSet} |
    cancelGPRS {cAPSpecificBoundSet} |
    connectGPRS {cAPSpecificBoundSet} |
    continueGPRS {cAPSpecificBoundSet} |
    entityReleasedGPRS {cAPSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSpecificBoundSet} |
    initialDPGPRS {cAPSpecificBoundSet} |
    releaseGPRS {cAPSpecificBoundSet} |
    requestReportGPRSEvent {cAPSpecificBoundSet} |
    resetTimerGPRS {cAPSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSpecificBoundSet}
}

gsmSCF-gprsSSFGenericAbstractSyntax ABSTRACT-SYNTAX ::= {
    GenericGsmSCF-gprsSSF-PDUs
    IDENTIFIED BY id-as-gsmSCF-gprsSSF-AS}

GenericGsmSCF-gprsSSF-PDUs ::= TCMessages {{GsmScfToGprsSsfInvokable}, {GsmScfToGprsSsfReturnable}}

GsmScfToGprsSsfInvokable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSet} |
    applyChargingGPRS {cAPSpecificBoundSet} |
    cancelGPRS {cAPSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSpecificBoundSet} |
    releaseGPRS {cAPSpecificBoundSet} |
    requestReportGPRSEvent {cAPSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSpecificBoundSet}
}

GsmScfToGprsSsfReturnable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSet} |
    applyChargingGPRS {cAPSpecificBoundSet} |
    cancelGPRS {cAPSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSpecificBoundSet} |
    releaseGPRS {cAPSpecificBoundSet} |
    requestReportGPRSEvent {cAPSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSpecificBoundSet}
}

END

```

## CHANGE REQUEST

29.078 CR 111r1

Current Version: 3.4.0

For submission to: CN #09

for approval   
for information

strategic   
non-strategic

Proposed change affects: (U)SIM  ME  UTRAN / Radio  Core Network

Source: N2

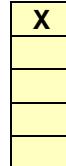
Date: 19.07.2000

Subject: Replacing 'NetworkSpecificBoundSet' by 'CapSpecificBoundSet'

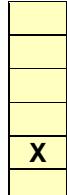
Work item: CAMEL Phase 3

Category:

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



Release: Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



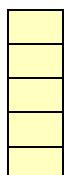
Reason for change:

The CAP specification contains a number of 'NetworkSpecificBoundSet' indications. This is incorrect, CAP is bound by the CAP specification. The bound indication shall therefore be 'CapSpecificBoundSet'.  
The present CR proposes therefore to replace 'NetworkSpecificBoundSet' by 'CapSpecificBoundSet'.

Clauses affected: 6.1.2, 8.2

Other specs affected:

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

Other comments:

**— First modified section —**

## 6.1.2 gsmSSF/gsmSCF packages, contracts and ACs

### 6.1.2.1 gsmSSF/gsmSCF ASN.1 module

```
CAP-gsmSSF-gsmSCF-pkgs-contracts-acs {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gsmSSF-gsmSCF-pkgs-contracts-acs(102) version3(2)}

DEFINITIONS ::= BEGIN

-- This module specifies the Operation Packages, Contracts, Application Contexts
-- and Abstract Syntaxes used for the gsmSSF - gsmSCF interface, for the control of
-- circuit switched calls.

-- The table in section 2.1 lists the specifications that contain the modules
-- that are used by CAP.

IMPORTS

    PARAMETERS-BOUND,
    CAPSpecificBoundSet
FROM CAP-classes classes

    CONTRACT,
    OPERATION-PACKAGE,
    OPERATION
FROM Remote-Operations-Information-Objects ros-InformationObjects

    TCMessages {}
FROM TCAPMessages tc-Messages

    APPLICATION-CONTEXT,
    dialogue-abstract-syntax
FROM TC-Notation-Extensions tc-NotationExtensions

    activityTest,
    applyCharging {},
    applyChargingReport {},
    assistRequestInstructions {},
    callGap {},
    callInformationReport {},
    callInformationRequest {},
    cancel {},
    connect {},
    connectToResource {},
    continue,
    continueWithArgument {},
    disconnectForwardConnection,
    establishTemporaryConnection {},
    eventReportBCSM {},
    furnishChargingInformation {},
    initialDP {},
    releaseCall {},
    requestReportBCSMEvent {},
    resetTimer {},
    sendChargingInformation {}
FROM CAP-gsmSSF-gsmSCF-ops-args gsmSSF-gsmSCF-Operations

    playAnnouncement {},
    promptAndCollectUserInformation {},
    specializedResourceReport
FROM CAP-gsmSCF-gsmSRF-ops-args gsmSCF-gsmSRF-Operations

    specializedResourceControlPackage {}
FROM CAP-gsmSCF-gsmSRF-pkgs-contracts-acs gsmSCF-gsmSRF-Protocol

    id-ac-CAP-gsmSSF-scfGenericAC,
    id-ac-CAP-gsmSSF-scfAssistHandoffAC,
    id-CAPSSfToScfGeneric,
    id-CAPAssistHandoffssfToScf,
    id-as-gsmSSF-scfGenericAS,
    id-as-assistHandoff-gsmSSF-scfAS,
    id-package-scfActivation,
    id-package-gsmSRF-scfActivationOfAssist,
    id-package-assistConnectionEstablishment,
    id-package-genericDisconnectResource,
    id-package-nonAssistedConnectionEstablishment,
    id-package-connect,
    id-package-callHandling,
    id-package-bcsmEventHandling,
    id-package-ssfCallProcessing,
```

```

id-package-timer,
id-package-billing,
id-package-charging,
id-package-trafficManagement,
id-package-callReport,
id-package-signallingControl,
id-package-activityTest,
id-package-cancel,
classes,
ros-InformationObjects,
tc-Messages,
tc-NotationExtensions,
gsmSSF-gsmSCF-Operations,
gsmSCF-gsmSRF-Operations,
gsmSCF-gsmSRF-Protocol
FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}
;

-- Application Contexts

capssf-scfGenericAC APPLICATION-CONTEXT ::= {
  CONTRACT           capSsfToScfGeneric
  DIALOGUE MODE      structured
  ABSTRACT SYNTAXES   {dialogue-abstract-syntax | 
                      gsmSSF-scfGenericAbstractSyntax}
  APPLICATION CONTEXT NAME id-ac-CAP-gsmSSF-scfGenericAC}

capssf-scfAssistHandoffAC APPLICATION-CONTEXT ::= {
  CONTRACT           capAssistHandoffssfToScf
  DIALOGUE MODE      structured
  ABSTRACT SYNTAXES   {dialogue-abstract-syntax | 
                      assistHandoff-gsmSSF-scfAbstractSyntax}
  APPLICATION CONTEXT NAME id-ac-CAP-gsmSSF-scfAssistHandoffAC}

-- Contracts

capSsfToScfGeneric CONTRACT ::= {
-- dialogue initiated by gsmSSF with InitialDP Operation
  INITIATOR CONSUMER OF
    {scfActivationPackage {cAPSpecificBoundSet}}
  RESPONDER CONSUMER OF
    {activityTestPackage |
     assistConnectionEstablishmentPackage {cAPSpecificBoundSet} |
     bcsmEventHandlingPackage {cAPSpecificBoundSet} |
     billingPackage {cAPSpecificBoundSet} |
     callHandlingPackage {cAPSpecificBoundSet} |
     callReportPackage {cAPSpecificBoundSet} |
     cancelPackage {cAPSpecificBoundSet} |
     chargingPackage {cAPSpecificBoundSet} |
     connectPackage {cAPSpecificBoundSet} |
     genericDisconnectResourcePackage {cAPSpecificBoundSet} |
     nonAssistedConnectionEstablishmentPackage {cAPSpecificBoundSet} |
     signallingControlPackage {cAPSpecificBoundSet} |
     specializedResourceControlPackage {cAPSpecificBoundSet} |
     ssfCallProcessingPackage {cAPSpecificBoundSet} |
     timerPackage {cAPSpecificBoundSet} |
     trafficManagementPackage {networkSpecificBoundSetcAPSpecificBoundSet}
    }
  ID      id-CAPSsfToScfGeneric
}

capAssistHandoffssfToScf CONTRACT ::= {
-- dialogue initiated by gsmSSF with AssistRequestInstructions
  INITIATOR CONSUMER OF
    {gsmSRF-scfActivationOfAssistPackage {cAPSpecificBoundSet}}
  RESPONDER CONSUMER OF
    {activityTestPackage |
     callHandlingPackage {cAPSpecificBoundSet} |
     cancelPackage {cAPSpecificBoundSet} |
     genericDisconnectResourcePackage {cAPSpecificBoundSet} |
     nonAssistedConnectionEstablishmentPackage {cAPSpecificBoundSet} |
     specializedResourceControlPackage {cAPSpecificBoundSet} |
     timerPackage {cAPSpecificBoundSet}
    }
  ID      id-CAPAssistHandoffssfToScf
}

-- Operation Packages

scfActivationPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {initialDP {bound}}
  ID      id-package-scfActivation}

```

```

gsmSRF-scfActivationOfAssistPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {assistRequestInstructions {bound}}
    ID id-package-gsmSRF-scfActivationOfAssist}
assistConnectionEstablishmentPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {establishTemporaryConnection {bound}}
    ID id-package-assistConnectionEstablishment}
genericDisconnectResourcePackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {disconnectForwardConnection}
    ID id-package-genericDisconnectResource}
nonAssistedConnectionEstablishmentPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {connectToResource {bound}}
    ID id-package-nonAssistedConnectionEstablishment}
connectPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {connect {bound}}
    ID id-package-connect}
callHandlingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {releaseCall {bound}}
    ID id-package-callHandling}
bcsmEventHandlingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {requestReportBCSMEvent {bound}}
    SUPPLIER INVOKES {eventReportBCSM {bound}}
    ID id-package-bcsmEventHandling}
ssfCallProcessingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {continueWithArgument {bound} | continue}
    ID id-package-ssfCallProcessing}
timerPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {resetTimer {bound}}
    ID id-package-timer}
billingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {furnishChargingInformation {bound}}
    ID id-package-billing}
chargingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {applyCharging {bound}}
    SUPPLIER INVOKES {applyChargingReport {bound}}
    ID id-package-charging}
trafficManagementPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {callGap {bound}}
    ID id-package-trafficManagement}
callReportPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {callInformationRequest {bound}}
    SUPPLIER INVOKES {callInformationReport {bound}}
    ID id-package-callReport}
signallingControlPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {sendChargingInformation {bound}}
    ID id-package-signallingControl}
activityTestPackage OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {activityTest}
    ID id-package-activityTest}
cancelPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {cancel {bound}}
    ID id-package-cancel}

```

-- Abstract Syntaxes

```

gsmSSF-scfGenericAbstractSyntax ABSTRACT-SYNTAX ::= {
    GenericSSF-gsmSCF-PDUs
    IDENTIFIED BY id-as-gsmSSF-scfGenericAS}
GenericSSF-gsmSCF-PDUs ::= TCMessages {{SsfToScfGenericInvokable},
    {SsfToScfGenericReturnable}}
SsfScfGenericInvokable OPERATION ::= {
    activityTest |
    applyCharging {cAPSSpecificBoundSet} |
    applyChargingReport {cAPSSpecificBoundSet} |
    callInformationReport {cAPSSpecificBoundSet} |
    callInformationRequest {cAPSSpecificBoundSet} |
    cancel {cAPSSpecificBoundSet} |
    connect {cAPSSpecificBoundSet} |
    continueWithArgument {cAPSSpecificBoundSet} |
    connectToResource {cAPSSpecificBoundSet} |
    disconnectForwardConnection |
    establishTemporaryConnection {cAPSSpecificBoundSet} |
    eventReportBCSM {cAPSSpecificBoundSet} |
    furnishChargingInformation {cAPSSpecificBoundSet} |
    initialDP {cAPSSpecificBoundSet} |
    releaseCall {cAPSSpecificBoundSet} |
    requestReportBCSMEvent {cAPSSpecificBoundSet} |
    resetTimer {cAPSSpecificBoundSet} |
    sendChargingInformation {cAPSSpecificBoundSet} |
    playAnnouncement {cAPSSpecificBoundSet} |
    promptAndCollectUserInformation {cAPSSpecificBoundSet} |
    specializedResourceReport
}
SsfScfGenericReturnable OPERATION ::= {
    activityTest |

```

```

applyCharging {cAPSSpecificBoundSet} |
applyChargingReport {cAPSSpecificBoundSet} |
callGap {networkSpecificBoundSetcAPSSpecificBoundSet} |
callInformationRequest {cAPSSpecificBoundSet} |
cancel {cAPSSpecificBoundSet} |
connect {cAPSSpecificBoundSet} |
connectToResource {cAPSSpecificBoundSet} |
continue |
continueWithArgument {cAPSSpecificBoundSet} |
disconnectForwardConnection |
establishTemporaryConnection {cAPSSpecificBoundSet} |
furnishChargingInformation {cAPSSpecificBoundSet} |
initialDP {cAPSSpecificBoundSet} |
releaseCall {cAPSSpecificBoundSet} |
requestReportBCSMEvent {cAPSSpecificBoundSet} |
resetTimer {cAPSSpecificBoundSet} |
sendChargingInformation {cAPSSpecificBoundSet} |
playAnnouncement {cAPSSpecificBoundSet} |
promptAndCollectUserInformation {cAPSSpecificBoundSet}
}

assistHandoff-gsmSSF-scfAbstractSyntax ABSTRACT-SYNTAX ::= {
    AssistHandoffSSF-gsmSCF-PDUs
    IDENTIFIED BY id-as-assistHandoff-gsmSSF-scfAS
AssistHandoffssf-gsmSCF-PDUs ::= TCMessage {{AssistHandoffssfToScfInvokable},
    {AssistHandoffssfToScfReturnable}}
AssistHandoffssfToScfInvokable OPERATION ::= {
    activityTest |
    assistRequestInstructions {cAPSSpecificBoundSet} |
    cancel {cAPSSpecificBoundSet} |
    connectToResource {cAPSSpecificBoundSet} |
    disconnectForwardConnection |
    playAnnouncement {cAPSSpecificBoundSet} |
    promptAndCollectUserInformation {cAPSSpecificBoundSet} |
    resetTimer {cAPSSpecificBoundSet} |
    specializedResourceReport
}
AssistHandoffssfToScfReturnable OPERATION ::= {
    activityTest |
    assistRequestInstructions {cAPSSpecificBoundSet} |
    cancel {cAPSSpecificBoundSet} |
    connectToResource {cAPSSpecificBoundSet} |
    disconnectForwardConnection |
    playAnnouncement {cAPSSpecificBoundSet} |
    promptAndCollectUserInformation {cAPSSpecificBoundSet} |
    resetTimer {cAPSSpecificBoundSet}
}

```

END

**— Next modified section —**

## 8.2 gsmSCF/gprsSSF contracts, packages and ACs

### 8.2.1 gprsSSF/gsmSCF ASN.1 module

```
CAP-gprsSSF-gsmSCF-pkgs-contracts-acs {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gprsSSF-gsmSCF-pkgs-contracts-acs(108) version3(2)}

DEFINITIONS ::= BEGIN

-- This module specifies the Operation Packages, Contracts, Application Contexts
-- and Abstract Syntaxes used for the gprsSSF - gsmSCF interface, for the
-- control of GPRS.

-- The table in section 2.1 lists the specifications that contain the modules
-- that are used by CAP.

IMPORTS

    PARAMETERS-BOUND,
    cAPSpecificBoundSet
FROM CAP-classes classes

    CONTRACT,
    OPERATION-PACKAGE,
    OPERATION
FROM Remote-Operations-Information-Objects ros-InformationObjects

    TCMessage {}
FROM TCAPMessages tc-Messages

    APPLICATION-CONTEXT,
    dialogue-abstract-syntax
FROM TC-Notation-Extensions tc-NotationExtensions

    activityTestGPRS {},
    applyChargingGPRS {},
    applyChargingReportGPRS {},
    cancelGPRS {},
    connectGPRS {},
    continueGPRS {},
    entityReleasedGPRS {},
    furnishChargingInformationGPRS {},
    initialDPPGPRS {},
    releaseGPRS {},
    eventReportGPRS {},
    requestReportGPRSEvent {},
    resetTimerGPRS {},
    sendChargingInformationGPRS {}
FROM CAP-gprsSSF-gsmSCF-ops-args gprsSSF-gsmSCF-Operations

    id-ac-CAP-gprssf-scfAC,
    id-cap3GprssfTogsmScf,
    id-cap3GsmScfToGprssf,
    id-as-gprsSSF-gsmSCF-AS,
    id-as-gsmSCF-gprsSSF-AS,
    classes,
    ros-InformationObjects,
    tc-Messages,
    tc-NotationExtensions,
    gprsSSF-gsmSCF-Operations
FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}

;

-- Application Contexts

cap3-gprssf-scfAC APPLICATION-CONTEXT ::= {
    CONTRACT                  cap3GprssfToScf
    DIALOGUE MODE             structured
    ABSTRACT SYNTAXES          {dialogue-abstract-syntax |
                                gprsSSF-fgsmSCFAbstractSyntax}
    APPLICATION CONTEXT NAME   id-ac-CAP-gprssf-gsmSCF-AC}

cap3-gsmscf-gprsssfAC APPLICATION-CONTEXT ::= {
    CONTRACT                  cap3GsmScfToGprssf
    DIALOGUE MODE             structured
    ABSTRACT SYNTAXES          {dialogue-abstract-syntax |
```

APPLICATION CONTEXT NAME gsmSCF-gprsSSFAbstractSyntax}  
 id-ac-CAP-gsmSCF-gprsssf-AC}

-- Contracts

```
cap3GprsSsfToScf CONTRACT ::= {
-- dialogue initiated by gprsSSF with InitialDPGPRS, ApplyChargingReportGPRS,
-- EntityReleaseGPRS and EventReportGPRS Operations
  INITIATOR CONSUMER OF
  {
    gprSscfActivationPackage {cAPSpecificBoundSet} |
    gprsEventHandlingPackage {cAPSpecificBoundSet} |
    gprsChargingPackage {cAPSpecificBoundSet} |
    gprsExceptionInformationPackage
  }
  RESPONDER CONSUMER OF
  {
    gprsConnectPackage {cAPSpecificBoundSet} |
    gprsProcessingPackage {cAPSpecificBoundSet} |
    gprsReleasePackage {cAPSpecificBoundSet} |
    gprsEventHandlingPackage {cAPSpecificBoundSet} |
    gprsTimerPackage {cAPSpecificBoundSet} |
    gprsBillingPackage {cAPSpecificBoundSet} |
    gprsChargingPackage {cAPSpecificBoundSet} |
    gprsCancelPackage {cAPSpecificBoundSet} |
    gprsChargeAdvicePackage {cAPSpecificBoundSet}
  }
  ID      id-cap3GprsSsfToScf
}

cap3GsmScfToGprsSsf CONTRACT ::= {
-- dialogue initiated by gsmSCF with ApplyCharginGPRS, ActivityTestGPRS,
-- CancelGPRS, FurnishChargingInformationGPRS, ReleaseGPRS,
-- RequestReportGPRSEvent and SendChargingInformationGPRS Operations
  INITIATOR CONSUMER OF
  {
    gprsReleasePackage {cAPSpecificBoundSetnetworkSpecificBoundSet} |
    gprsEventHandlingPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsTimerPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsBillingPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsChargingPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsActivityTestPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsCancelPackage {networkSpecificBoundSetcAPSpecificBoundSet} |
    gprsChargeAdvicePackage {networkSpecificBoundSetcAPSpecificBoundSet}
  }
  RESPONDER CONSUMER OF
  {
  }
  ID      id-cap3GsmScfToGprsSsf
}
```

-- Operation Packages

```
gprsScfActivationPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {initialDPGPRS {bound}}
  ID          id-package-gprsScfActivation}
gprsConnectPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {connectGPRS {bound}}
  ID          id-package-gprsConnect}
gprsProcessingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {continueGPRS {bound}}
  ID          id-package-gprsContinue}
gprsReleasePackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {releaseGPRS {bound}}
  ID          id-package-gprsRelease}
gprsEventHandlingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {requestReportGPRSEvent {bound}}
  SUPPLIER INVOKES {eventReportGPRS {bound}}
  ID          id-package-gprsEventHandling}
gprsExceptionInformationPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {entityReleasedGPRS {bound}}
  ID          id-package-gprseExceptionInformation}
gprsTimerPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {resetTimerGPRS {bound}}
  ID          id-package-gprstimer}
gprsBillingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {furnishChargingInformationGPRS {bound}}
  ID          id-package-gprsBilling}
gprsChargingPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {applyChargingGPRS {bound}}
  SUPPLIER INVOKES {applyChargingReportGPRS {bound}}
  ID          id-package-gprsCharging}
gprsChargeAdvicePackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
  CONSUMER INVOKES {sendChargingInformationGPRS {bound}}}
```

```

ID      id-package-gprsChargeAdvice}
gprsActivityTestPackage OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {activityTestGPRS {bound}}
    ID      id-package-gprsActivityTest}
gprsCancelPackage {PARAMETERS-BOUND : bound} OPERATION-PACKAGE ::= {
    CONSUMER INVOKES {cancelGPRS {bound}}
    ID      id-package-gprsCancel}

-- Abstract Syntaxes

gprsSSF-gsmSCFAbstractSyntax ABSTRACT-SYNTAX ::= {
    GenericGprsSSF-gsmSCF-PDUs
    IDENTIFIED BY id-as-gprsSSF-gsmSCF-AS}

GenericGprsSSF-gsmSCF-PDUs ::= TCMessages {{GprsSsfToGsmScfInvokable},
                                             {GprsSsfToGsmScfReturnable} }

GprsSsfToGsmScfGenericInvokable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSetcAPSSpecificBoundSet} |
    applyChargingGPRS {cAPSSpecificBoundSet} |
    applyChargingReportGPRS {cAPSSpecificBoundSet} |
    cancelGPRS {cAPSSpecificBoundSet} |
    connectGPRS {cAPSSpecificBoundSet} |
    entityReleasedGPRS {cAPSSpecificBoundSet} |
    eventReportGPRS {cAPSSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSSpecificBoundSet} |
    initialDPGPRS {cAPSSpecificBoundSet} |
    releaseGPRS {cAPSSpecificBoundSet} |
    requestReportGPRSEvent {cAPSSpecificBoundSet} |
    resetTimerGPRS {cAPSSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSSpecificBoundSet}
}

GprsSsfToGsmScfReturnable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSetcAPSSpecificBoundSet} |
    applyChargingGPRS {cAPSSpecificBoundSet} |
    applyChargingReportGPRS {cAPSSpecificBoundSet} |
    cancelGPRS {cAPSSpecificBoundSet} |
    connectGPRS {cAPSSpecificBoundSet} |
    continueGPRS {cAPSSpecificBoundSet} |
    entityReleasedGPRS {cAPSSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSSpecificBoundSet} |
    initialDPGPRS {cAPSSpecificBoundSet} |
    releaseGPRS {cAPSSpecificBoundSet} |
    requestReportGPRSEvent {cAPSSpecificBoundSet} |
    resetTimerGPRS {cAPSSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSSpecificBoundSet}
}

gsmSCF-gprsSSFGenericAbstractSyntax ABSTRACT-SYNTAX ::= {
    GenericGsmSCF-gprsSSF-PDUs
    IDENTIFIED BY id-as-gsmSCF-gprsSSF-AS}

GenericGsmSCF-gprsSSF-PDUs ::= TCMessages {{GsmScfToGprsSsfInvokable}, {GsmScfToGprsSsfReturnable} }

GsmScfToGprsSsfInvokable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSetcAPSSpecificBoundSet} |
    applyChargingGPRS {cAPSSpecificBoundSet} |
    cancelGPRS {cAPSSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSSpecificBoundSet} |
    releaseGPRS {cAPSSpecificBoundSet} |
    requestReportGPRSEvent {cAPSSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSSpecificBoundSet}
}

GsmScfToGprsSsfReturnable OPERATION ::= {
    activityTestGPRS {networkSpecificBoundSetcAPSSpecificBoundSet} |
    applyChargingGPRS {cAPSSpecificBoundSet} |
    cancelGPRS {cAPSSpecificBoundSet} |
    furnishChargingInformationGPRS {cAPSSpecificBoundSet} |
    releaseGPRS {cAPSSpecificBoundSet} |
    requestReportGPRSEvent {cAPSSpecificBoundSet} |
    sendChargingInformationGPRS {cAPSSpecificBoundSet}
}

```

END

## CHANGE REQUEST

29.078 CR 112r1

Current Version: 3.4.0

For submission to: CN #09

for approval   
for information

strategic   
non-strategic

Proposed change affects: (U)SIM  ME  UTRAN / Radio  Core Network

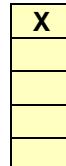
Source: N2

Date: 20.07.2000

Subject: Renumbering of GPRS specific Error codes

Work item: CAMEL Phase 3

Category: F Correction  
A Corresponds to a correction in an earlier release  
B Addition of feature  
C Functional modification of feature  
D Editorial modification



Release: Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00

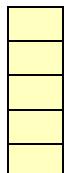
Reason for change:

- (1) Section 5.4 specifies the error codes for CAP. Most error codes are generic, that is, they apply to circuit switched call control, MO-SMS and GPRS.  
  
The error code errcode-unknownPDPID is specific for GPRS.  
It is therefore desirable to assign a range of error code values to the GPRS specific error codes.
- (2) A re-ordering of GPRS Operation Package value allocations, in section 5.6, is proposed.

Clauses affected: 5.4, 5.6

Other specs affected:

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

Other comments:

The same principle has been used for assigning Operation Code values and Operation Package values: ranges have been allocated to circuit switched call control, MO-SMS and GPRS.  
  
OverlappingDialogue errorcode has been removed in other CR's.

**— First modified section —**

## 5.4 Error codes

```
CAP-errorcodes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-errorcodes(57) version3(2)}
```

```
DEFINITIONS ::= BEGIN
```

```
IMPORTS
```

```
    ros-InformationObjects
FROM CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}
```

```
    Code
FROM Remote-Operations-Information-Objects ros-InformationObjects
```

```
;
```

errcode-canceled	Code ::= local: 0
errcode-cancelFailed	Code ::= local: 1
errcode-eTCFailed	Code ::= local: 3
errcode-improperCallerResponse	Code ::= local: 4
errcode-missingCustomerRecord	Code ::= local: 6
errcode-missingParameter	Code ::= local: 7
errcode-parameterOutOfRange	Code ::= local: 8
errcode-requestedInfoError	Code ::= local: 10
errcode-systemFailure	Code ::= local: 11
errcode-taskRefused	Code ::= local: 12
errcode-unavailableResource	Code ::= local: 13
errcode-unexpectedComponentSequence	Code ::= local: 14
errcode-unexpectedDataValue	Code ::= local: 15
errcode-unexpectedParameter	Code ::= local: 16
errcode-unknownLegID	Code ::= local: 17
errcode-unknownPDPID	Code ::= local: <u>182050</u>
<u>errcode-overlappingDialogue</u>	Code ::= local: <u>2021</u>

```
END
```

**— Next modified section —**

## 5.6 Object IDentifiers (IDs)

```
CAP-object-identifiers {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-object-identifiers(100) version3(2)}

DEFINITIONS ::= BEGIN

-- This module assigns object identifiers for Modules, Packages, Contracts and AC's
-- used by CAP

-- For Modules from TCAP, ROS,
tc-Messages          OBJECT IDENTIFIER ::= {ccitt recommendation q 773 modules(2) messages(1) version3(3)}
tc-NotationExtensions OBJECT IDENTIFIER ::= {ccitt recommendation q 775 modules(2) notation-extension (4) version1(1)}
ros-InformationObjects OBJECT IDENTIFIER ::= {joint-iso-ccitt remote-operations(4) informationObjects(5) version1(0)}

-- For CAP Modules
datatypes             OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-datatypes(52) version3(2)}

errortypes             OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-errortypes(51) version3(2)}

operationcodes         OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-operationcodes(53) version3(2)}

errorcodes             OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-errorcodes(57) version3(2)}

classes                OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-classes(54) version3(2)}

gsmSSF-gsmSCF-Operations      OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-gsmSSF-gsmSCF-ops-args(101) version3(2)}

gsmSSF-gsmSCF-Protocol        OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-gsmSSF-gsmSCF-pkgs-contracts-accs(102) version3(2)}

gsmSCF-gsmSRF-Operations      OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-gsmSCF-gsmSRF-ops-args(103) version3(2)}

gsmSCF-gsmSRF-Protocol        OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-gsmSCF-gsmSRF-pkgs-contracts-accs(104) version3(2)}

sms-Operations              OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-SMS-ops-args(105) version3(2)}

smsSSF-gsmSCF-Protocol        OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-smsSSF-gsmSCF-pkgs-contracts-accs(106) version3(2)}

gprsSSF-gsmSCF-Operations      OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-GPRS-ops-args(107) version3(2)}

gprsSSF-gsmSCF-Protocol        OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3)
cap-gprsSSF-gsmSCF-pkgs-contracts-accs(108) version3(2)}

id-CAP                      OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) cap3(20)}
id-CAPOE                     OBJECT IDENTIFIER ::= {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
```

```

umts-network(1) cap3OE(21)
id-ac OBJECT IDENTIFIER ::= {id-CAP ac(3)}
id-acE OBJECT IDENTIFIER ::= {id-CAP0E ac(3)}
id-as OBJECT IDENTIFIER ::= {id-CAP as(5)}
id-asE OBJECT IDENTIFIER ::= {id-CAP0E as(5)}
id-rosObject OBJECT IDENTIFIER ::= {id-CAP rosObject(25)}
id-contract OBJECT IDENTIFIER ::= {id-CAP contract(26)}
id-contractE OBJECT IDENTIFIER ::= {id-CAP0E contract(26)}
id-package OBJECT IDENTIFIER ::= {id-CAP package(27)}
id-packageE OBJECT IDENTIFIER ::= {id-CAP0E package(27)}

-- for ac, as, rosObject, contract and package, the values are identical to Q.1218

-- ROS Objects

id-rosObject-gsmSCF OBJECT IDENTIFIER ::= {id-rosObject 4}
id-rosObject-gsmSSF OBJECT IDENTIFIER ::= {id-rosObject 5}
id-rosObject-gsmSRF OBJECT IDENTIFIER ::= {id-rosObject 6}

-- gsmSSF/gsmSCF AC
id-ac-CAP-gsmSSF-scfGenericAC OBJECT IDENTIFIER ::= {id-acE 4}
id-ac-CAP-gsmSSF-scfAssistHandoffAC OBJECT IDENTIFIER ::= {id-acE 6}

-- gsmSRF/gsmSCF AC
id-ac-gsmSRF-gsmSCF OBJECT IDENTIFIER ::= {id-ac 14}

-- gprsSSF/gsmSCF AC
id-ac-CAP-gprsSSF-gsmSCF-AC OBJECT IDENTIFIER ::= {id-acE 50}
id-ac-CAP-gsmSCF-gprsSSF-AC OBJECT IDENTIFIER ::= {id-acE 51}

-- gprsSSF/gsmSCF or gsmSSF/gsmSCF AC
id-ac-cap3-sms-AC OBJECT IDENTIFIER ::= {id-acE 61}

-- gsmSSF/gsmSCF Contracts
id-CAPSsfToScfGeneric OBJECT IDENTIFIER ::= {id-contractE 3}
id-CAPAssistHandoffssfToScf OBJECT IDENTIFIER ::= {id-contractE 5}

-- gsmSRF/gsmSCF Contracts
id-contract-gsmSRF-gsmSCF OBJECT IDENTIFIER ::= {id-contract 13}

-- gprsSSF/gsmSCF Contracts
id-cap3GprsSsfTogsmScf OBJECT IDENTIFIER ::= {id-contract 14}
id-cap3GgsmSCFTogprsSSF OBJECT IDENTIFIER ::= {id-contract 15}

-- gsmSSF/gsmSCF Operation Packages
id-package-scfActivation OBJECT IDENTIFIER ::= {id-package 11}
id-package-gsmSRF-scfActivationOfAssist OBJECT IDENTIFIER ::= {id-package 15}
id-package-assistConnectionEstablishment OBJECT IDENTIFIER ::= {id-package 16}
id-package-genericDisconnectResource OBJECT IDENTIFIER ::= {id-package 17}
id-package-nonAssistedConnectionEstablishment OBJECT IDENTIFIER ::= {id-package 18}
id-package-connect OBJECT IDENTIFIER ::= {id-package 19}
id-package-callHandling OBJECT IDENTIFIER ::= {id-packageE 20}
id-package-bcsmEventHandling OBJECT IDENTIFIER ::= {id-package 21}
id-package-ssfCallProcessing OBJECT IDENTIFIER ::= {id-packageE 24}
id-package-timer OBJECT IDENTIFIER ::= {id-package 26}
id-package-billing OBJECT IDENTIFIER ::= {id-package 27}
id-package-charging OBJECT IDENTIFIER ::= {id-package 28}
id-package-trafficManagement OBJECT IDENTIFIER ::= {id-package 29}
id-package-callReport OBJECT IDENTIFIER ::= {id-package 32}
id-package-signallingControl OBJECT IDENTIFIER ::= {id-package 33}
id-package-activityTest OBJECT IDENTIFIER ::= {id-package 34}
id-package-cancel OBJECT IDENTIFIER ::= {id-packageE 36}

-- gsmSRF/gsmSCF Operation Packages
id-package-specializedResourceControl OBJECT IDENTIFIER ::= {id-package 42}
id-package-gsmSRF-scfCancel OBJECT IDENTIFIER ::= {id-package 43}

-- gprsSSF/gsmSCF Operation Packages
id-package-qprsContinue OBJECT IDENTIFIER ::= {id-package 49}
id-package-qprsExceptionInformation OBJECT IDENTIFIER ::= {id-package 50}
id-package-qprsSCFActivationPackage OBJECT IDENTIFIER ::= {id-package 51}
id-package-qprsConnectPackage OBJECT IDENTIFIER ::= {id-package 52}
id-package-qprsReleasePackage OBJECT IDENTIFIER ::= {id-package 53}
id-package-qprsEventHandlingPackage OBJECT IDENTIFIER ::= {id-package 54}
id-package-qprsSCFTimerPackage OBJECT IDENTIFIER ::= {id-package 55}
id-package-qprsSCFBillingPackage OBJECT IDENTIFIER ::= {id-package 56}
id-package-qprsSCFChargingPackage OBJECT IDENTIFIER ::= {id-package 57}
id-package-qprsSCFActivityTestPackage OBJECT IDENTIFIER ::= {id-package 58}
id-package-qprsSCFCancelPackage OBJECT IDENTIFIER ::= {id-package 59}
id-package-qprsSCFChargeAdvicePackage OBJECT IDENTIFIER ::= {id-package 60}
id-package-qprsContinue OBJECT IDENTIFIER ::= {id-package 49}
id-package-qprsExceptionInformation OBJECT IDENTIFIER ::= {id-package 50}

-- gprsSSF/gsmSCF or gsmSSF/gsmSCF Operation Packages
id-package-smsActivation OBJECT IDENTIFIER ::= {id-package 61}

```

id-package-smsConnect	OBJECT IDENTIFIER ::= {id-package 62}
id-package-smsContinue	OBJECT IDENTIFIER ::= {id-package 63}
id-package-smsRelease	OBJECT IDENTIFIER ::= {id-package 64}
id-package-smsEventHandling	OBJECT IDENTIFIER ::= {id-package 65}
id-package-smsBilling	OBJECT IDENTIFIER ::= {id-package 66}
id-package-smsTimer	OBJECT IDENTIFIER ::= {id-package 67}
 -- gsmSSF/gsmSCF Abstract Syntaxes	
id-as-gsmSSF-scfGenericAS	OBJECT IDENTIFIER ::= {id-asE 4}
id-as-assistHandoff-gsmSSF-scfAS	OBJECT IDENTIFIER ::= {id-asE 6}
 -- gsmSRF/gsmSCF Abstract Syntaxes	
id-as-basic-gsmSRF-gsmSCF	OBJECT IDENTIFIER ::= {id-as 14}
 -- gprsSSF/gsmSCF Abstract Syntaxes	
id-as-gprsSSF-gsmSCF-AS	OBJECT IDENTIFIER ::= {id-as 50}
id-as-gsmSCF-gprsSSF-AS	OBJECT IDENTIFIER ::= {id-as 51}
 -- gprsSSF/gsmSCF or gsmSSF/gsmSCF Abstract Syntaxes	
id-as-sms-AS	OBJECT IDENTIFIER ::= {id-as 61}

## CHANGE REQUEST

Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.

29.078 CR 113

Current Version: 3.4.0

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN #09  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (U)SIM  ME  UTRAN / Radio  Core Network

(at least one should be marked with an X)

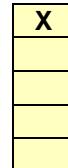
**Source:** N2      **Date:** 19 July 2000

**Subject:** Correction of CAMEL-SCIBillingChargingCharacteristics

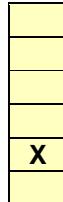
**Work item:** CAMEL Phase 3

**Category:**

- (only one category shall be marked with an X)
- F Correction
  - A Corresponds to a correction in an earlier release
  - B Addition of feature
  - C Functional modification of feature
  - D Editorial modification



**Release:** Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



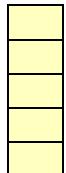
**Reason for change:**

The CAMEL-SCIBillingChargingCharacteristics is a choice of AOCBeforeAnswer and AOCSubsequent instead of a sequence of both.

**Clauses affected:** 5.1 Data types

**Other specs affected:**

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

**Other comments:**

**— First modified section —**

---

## 5 Common CAP Types

### 5.1 Data types

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

CAP-datatatypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1)
modules(3) cap-datatatypes(52) version3(2)}
-- This module contains the type definitions for the CAP v.3 data types.
```

...

```
CAMEL-FCISMSBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= CHOICE{
  fCIBCCAMELsequence1      [0] SEQUENCE {
    freeFormatData          [0] OCTET STRING (SIZE(
      bound.&minFCIBillingChargingDataLength .. bound.&maxFCIBillingChargingDataLength)),
    appendFreeFormatData    [1] AppendFreeFormatData DEFAULT overwrite
  }
}

| CAMEL-SCIBillingChargingCharacteristics ::= SEQUENCE CHOICE {
  aOCBeforeAnswer          [0] AOCBeforeAnswer,
  aOCAfterAnswer           [1] AOCSubsequent
}

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

## CHANGE REQUEST

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**29.078 CR 114r1**

Current Version: 3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#9  
*list expected approval meeting # here ↑*

for approval  
for information

strategic  
non-strategic

(for SMG  
use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: [ftp://ftp.3gpp.org/Information/CR-Form-v2.doc](http://ftp.3gpp.org/Information/CR-Form-v2.doc)

**Proposed change affects:**  
*(at least one should be marked with an X)*

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:**

N2

**Date:** 30 Aug 2000

**Subject:**

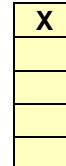
Clarification on GPRS dialogue handling in case of TC error/abort

**Work item:**

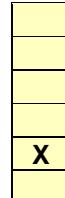
CAMEL phase 3

**Category:**  
*(only one category shall be marked with an X)*

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



**Release:** Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



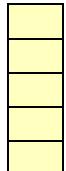
**Reason for change:**

It is not absolutely clear what shall be done when a TC level error occurs. The DefaultGPRSHandling shall be checked. The applicable one is the one for that TDP that caused triggering.

**Clauses affected:**

**Other specs affected:**

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

**Other comments:**

A separate editorial CR is needed to change TCAP to TC throughout the document 29.078.

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

## 12.1.7 gprsSSF-gsmSCF interface

### 12.1.7.1 Normal procedures

#### 12.1.7.1.1 TC-dialogues and relationships

A **relationship**, i.e. a GPRS dialogue, exists between gprsSSF and gsmSCF if at least one of the following conditions is fulfilled:

- There is at least one EDP armed.
- At least one report is pending.
- gprsSSF is in a TDP or EDP in state WaitingForInstructions.

The GPRS dialogue can consist of multiple consecutive **TCAP-dialogues**. A GPRS dialogue is identified by a GPRS-ReferenceNumber consisting of the originationReference and the destinationReference. One GPRS-Reference is assigned by the SGSN and shall be unique within this SGSN. The other GPRS-Reference is assigned by the gsmSCF and shall be unique within this gsmSCF.

The **TCAP**-dialogues are closed and (re)opened whenever necessary.

#### 12.1.7.1.2 Use of the GPRS Reference

For the use of CAP defined GPRS-ReferenceNumber, see also the ASN.1 notation in the subclause 8.1.

When the gprsSSF sends the first operation for a new GPRS dialogue (InitialDPGPRS), the gprsSSF shall include a GPRS Reference Number in the TCAP message. This GPRS Reference Number shall consist of the **SGSN Process Id** as originationReference, which is internally allocated by the gprsSSF. This number is used by the gprsSSF to associate an incoming TCAP message with an internal GPRS Process.

When the gsmSCF has received the InitialDPGPRS operation, it shall store the SGSN Process ID and allocate an **SCP Process Id** which is used by the gsmSCF to associate an incoming TCAP message with an internal SCP Process.

The SCP shall include the GPRS Reference Number in the first TCAP message, **SGSN Process Id** in destinationReference and **SCP Process Id** in originationReference, returned to the gprsSSF.

When the gprsSSF receives the first TCAP message from the SCP for this dialogue, the gprsSSF shall store the SCP Process Id together with the SGSN Process Id.

From here onwards all the TCAP messages that open a new TCAP dialogue shall include the GPRS Reference Number consisting of the originationReference and the destinationReference to associate the internal process in the origination entity and the destination entity, respectively, until the end of the relationship between these processes.

For any TC-CONTINUE in the existing TCAP dialogue, transporting the GPRS Reference Number is not needed except for the first response after the InitialDPGPRS operation.

#### 12.1.7.1.3 gprsSSF-to-gsmSCF messages

This subclause defines the normal procedures for TC messages from the gprsSSF to the gsmSCF.

##### *gsmSSF-FSM related messages*

A GPRS dialogue and a TCAP dialogue shall be established when the gprsSSF moves from the state **Idle** to the state **Waiting for Instructions**. The InitialDPGPRS operation shall be transmitted in the same message, i.e. TC-BEGIN. It shall contain the GPRS-Reference as assigned by the SGSN in the originationReference. The gprsSSF may initiate the subsequent TCAP dialogues for this GPRS dialogue with the following operations:

- ApplyChargingReportGPRS
- EntityReleasedGPRS

- EventReportGPRS

The gprsSSF shall memorise the gsmSCF address used for InitialDPGPRS, and use it in the further TCAP dialogues. The gsmSCF shall memorise the gprsSSF address received along with the InitialDPGPRS, and use it in the further TCAP dialogues.

The gsmSCF may open subsequent TCAP dialogues with the following CAP operations:

- ActivityTestGPRS;
- ApplyChargingGPRS;
- CancelGPRS;
- FurnishChargingInformationGPRS;
- ReleaseGPRS;
- RequestReportGPRSEvent;
- SendChargingInformationGPRS.

The CAP operation that opens a TCAP dialogue shall be sent with a TC-BEGIN request primitive. This message shall contain the GPRS-ReferenceNumber assigned by the sender of this message in the originationReference. If the operation opens a subsequent TCAP dialogue this message shall contain also the previously received destinationReference. If an operation opens a GPRS dialogue then the TCAP message reply shall contain the originationReference as assigned by the sender, i.e. the gsmSCF.

The TCAP dialogue shall be closed for the idle periods, i.e. when the gprsSSF moves from the state **Waiting for Instructions** to the state **Idle**, if the gprsSSF is in the state Monitoring and has received all replies or time-outs for the operations sent, or in the end of a GPRS dialogue. Each TCAP dialogue shall be terminated by the gprsSSF using basic end. Similarly each *GPRS dialogue* may be terminated in a pre-arranged way or explicitly by using EntityReleasedGPRS operation. The following operations can cause end of the *GPRS dialogue*:

- ContinueGPRS;
- ConnectGPRS;
- ApplyChargingReportGPRS;
- EntityReleasedGPRS;
- EventReportGPRS (EDP-N);
- CancelGPRS;
- ReleaseGPRS;
- RequestReportGPRSEvent (disarming of DPs).

When the gprsSSF makes a non-error case state transition to the state **Idle** and there is one or more pending operation and TCAP dialogue is established, TCAP dialogue may be terminated by TC-END primitive with zero component(s) after all pending operations have been sent. When the gsmSSF sends the last EventReportGPRS or ApplyChargingReportGPRS the relationship may be ended from the gprsSSF by a TC-END request primitive with basic end.

In the case that there is no pending operation, result nor error, and TCAP dialogue is established, TCAP dialogue shall be terminated by TC-END primitive with zero component.

In the case where a PDP context release or detach is initiated by any other entity than an gsmSCF, the gprsSSF shall end a relationship with the EntityReleasedGPRS operation if the gprsSSF has no armed DP to report nor pending ApplyChargingReportGPRS which should be reported.

In the case of overlapping dialogues for the same GPRS dialogue the gsmSCF opened dialogue is closed by the gprsSSF with an error code as specified in clause 10.

#### *SSME-FSM related messages*

The following procedures shall be followed:

- The dialogue shall be ended with basic end when the ActivityTestGPRS Return Result is sent.

#### 12.1.7.1.4 gsmSCF-to-gprsSSF messages

This subclause defines the normal procedures for TC messages from the gsmSCF to the gprsSSF.

In the case of overlapping dialogues for the same relationship the gsmSCF opened dialogue is closed by the gprsSSF with an error code as specified in clause 10. The gsmSCF shall first respond normally to the operations sent by the gprsSSF, and then decide on the further actions.

#### *SCME-FSM related messages*

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

- A new subsequent TCAP dialogue is established when the ActivityTestGPRS operation is sent.

#### 12.1.7.2 Abnormal procedures

##### 12.1.7.2.1 gsmSCF-to-gprsSSF messages

This subclause defines the abnormal procedures for TC messages from the gsmSCF to the gprsSSF.

Considering that gprsSSF do not have the logic to recover from error cases detected on the gsmSCF-gprsSSF interface, the following shall apply:

- Operation errors and rejection of TCAP components shall be transmitted to the gprsSSF with a TC-END request primitive, basic end.
- The GPRS dialogue shall be closed.

If, in violation of the above procedure, an ERROR or REJECT component is received with a TC-CONTINUE indication primitive, the gprsSSF shall abort the dialogue with a TC-U-ABORT request primitive.

##### 12.1.7.2.2 gprsSSF-to-gsmSCF messages

This subclause defines the abnormal procedures for TC messages from the gprsSSF to the gsmSCF.

Operation errors and rejection of TCAP components shall be transmitted to the gsmSCF according to the following rules:

- The TC dialogue shall be maintained when the preceding message, which contained the erroneous component, indicated that the TC dialogue shall be maintained. I.e. the error or reject shall be transmitted with a TC-CONTINUE request primitive if the erroneous component was received with a TC-CONTINUE indication primitive.  
On receipt of an ERROR or REJECT component the gsmSCF decides on further processing. It may either continue, explicitly end or abort the TC dialogue. If the TC dialogue is closed due to such error, also GPRS dialogue shall be closed.
- In all other situations the TC dialogue shall no longer be maintained. I.e. the error or reject shall be transmitted with a TC-END request primitive, basic end, if the erroneous component was received with a TC-BEGIN indication primitive. The GPRS dialogue shall be closed.
- on expiration of application timer T<sub>SSF</sub>, the TC dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason, regardless of TCAP dialogue is established or not. The GPRS dialogue shall be closed.

If the error processing in the gprsSSF leads to the case where the gprsSSF is not able to process further gsmSCF operations while the TC dialogue is to be maintained, the gprsSSF aborts the TC dialogue with a TC-END request

primitive with basic end or a TC-U-ABORT request primitive, depending on whether any pending ERROR or REJECT component is to be sent or not.

~~The gprsSSF can end a dialogue with a TC-U-ABORT request primitive in case GPRS dialogue release is initiated by any other entity than the gsmSCF and the gprsSSF has no pending call information requests (or pending requests which should be treated in the same way, i.e., ApplyCharging nor any armed EDP to notify the gsmSCF of the GPRS dialogue (for alternative way, see subclause 12.1.8.1.1).~~

The gprsSSF can end a TC dialogue with a TC-U-ABORT request primitive in the following case:

- Any entity other than the gsmSCF initiates closure of the GPRS dialogue, and
- The gprsSSF has no pending reports, and
- The gprsSSF has no armed EDP to notify the gsmSCF that the GPRS dialogue has been closed.

For an alternative method, see subclause 12.1.7.1.1

#### 12.1.7.2.3 Default GPRS Handling

If a TC dialogue is closed due to unrecoverable TC/protocol error (does not apply to the overlapping TC dialogues), or aborted by the gsmSCF, or at the Tssf expiry, then the gprsSSF shall check the applicable Default GPRS Handling parameter of the GPRS-CSI. In this context the applicable Default GPRS Handling is the one that corresponds the TDP that opened the GPRS dialogue. The same default handling shall apply to all state models that are controlled by the particular GPRS dialogue.

## CHANGE REQUEST

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**29.078 CR 115r1**

Current Version: 3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#9  
*list expected approval meeting # here ↑*

for approval   
for information

strategic  (for SMG  
non-strategic  use only)

Form: CR cover sheet, version 2 for 3GPP and SMG The latest version of this form is available from: [ftp://ftp.3gpp.org/Information/CR-Form-v2.doc](http://ftp.3gpp.org/Information/CR-Form-v2.doc)

**Proposed change affects:**  
*(at least one should be marked with an X)*

(U)SIM  ME  UTRAN / Radio  Core Network

**Source:**

N2

**Date:** 30 Aug 2000

**Subject:**

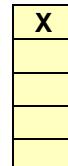
GPRS location information in GPRSEventSpecificInformation

**Work item:**

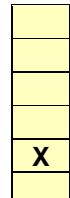
CAMEL phase 3

**Category:**  
*(only one category shall be marked with an X)*

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



**Release:** Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



**Reason for change:**

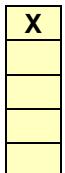
Location information was agreed in principle to be added in the IDP-GPRS operation. However, for scenario 1 it is vital to get the location information in ERB-GPRS operation, since the location may have changed between GPRS attach and PDP context establishment. Also the change of position should contain location.

The current stage 2 does not specify, in which EDP what information is needed. All parameters should be optional on ASN level, and Stage 2 shall specify what is mandatory in each case.

**Clauses affected:**

**Other specs affected:**

- Other 3G core specifications
- Other GSM core specifications
- MS test specifications
- BSS test specifications
- O&M specifications



→ List of CRs: 29.078-CR206 (tdoc N2-000373)  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:  
→ List of CRs:

**Other comments:**

-

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

## 5 Common CAP Types

### 5.1 Data types

...

```

GPRSEventSpecificInformation {PARAMETERS-BOUND : bound}           ::= CHOICE {
|   attachChangeOfPositionSpecificInformation
|     [0] SEQUENCE {
|       newRoutingAreaIdentity [0] RAIdentity
|       locationInformationGPRS [0] LocationInformationGPRS OPTIONAL
|     },
|   pdp-ContextchangeOfPositionSpecificInformation
|     [1] SEQUENCE {
|       accessPointName [0] AccessPointName {bound} OPTIONAL,
|       chargingID [1] GPRSChargingID OPTIONAL,
|       newRoutingAreaIdentity [2] RAIdentity,
|       locationInformationGPRS [2] LocationInformationGPRS OPTIONAL,
|       pDPType [3] PDPType OPTIONAL,
|       qualityOfService [4] QualityOfService OPTIONAL,
|       timeAndTimeZone [5] TimeAndTimeZone OPTIONAL
|     },
|   detachSpecificInformation
|     [2] SEQUENCE {
|       initiatingEntity [0] InitiatingEntity OPTIONAL
|     },
|   disconnectSpecificInformation
|     [3] SEQUENCE {
|       initiatingEntity [0] InitiatingEntity OPTIONAL
|     },
|   pDPContextEstablishmentSpecificInformation
|     [4] SEQUENCE {
|       accessPointName [0] AccessPointName {bound} OPTIONAL,
|       pDPType [1] PDPType OPTIONAL,
|       qualityOfService [2] QualityOfService OPTIONAL,
|       routingAreaIdentity [3] RAIdentity OPTIONAL,
|       locationInformationGPRS [3] LocationInformationGPRS OPTIONAL,
|       timeAndTimeZone [4] TimeAndTimeZone OPTIONAL
|     },
|   pDPContextEstablishmentAcknowledgementSpecificInformation
|     [5] SEQUENCE {
|       accessPointName [0] AccessPointName {bound} OPTIONAL,
|       chargingID [1] GPRSChargingID OPTIONAL,
|       pDPType [2] PDPType OPTIONAL,
|       qualityOfService [3] QualityOfService OPTIONAL,
|       routingAreaIdentity [4] RAIdentity OPTIONAL,
|       locationInformationGPRS [4] LocationInformationGPRS OPTIONAL,
|       timeAndTimeZone [5] TimeAndTimeZone OPTIONAL
|     }
}
For the encoding of NewRoutingAreaIdentity refer to 3G TS 29.060 [43]

```

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

## 11.25 EventReportGPRS procedure

### 11.25.1 General description

This operation is used to notify the gsmSCF of a GPRS session or PDP context event previously requested by the gsmSCF in a RequestReportGPRSEvent operation. The monitoring of more than one event can be requested with a RequestReportGPRSEvent operation, but each of these requested events is reported in a separate EventReportGPRS operation.

#### 11.25.1.1 Parameters

- gPRSEventType:  
This parameter specifies the type of event that is reported.
- gPRSEventSpecificInformation:  
This parameter indicates the GPRS session or PDP context related information specific to the event.

For Change of Position GPRS session it shall contain the "newRoutingAreaIdentity  
LocationInformationGPRS", if available.

For Change of Position PDP context it shall contain the "accessPointName", "chargingID",  
"locationInformationGPRS", "pDPType", Quality of Service, and "timeAndTimeZone", if available.

For Detach and Disconnect it shall contain the "initiatingEntity".

For PDP context establishment it shall contain the "accessPointName", "pDPType", and the Quality of Service, "locationInformationGPRS", "timeAndTimeZone", if available.

The Quality of Service shall contain the Requested QoS and the Subscribed QoS.

For PDP context establishment acknowledge it shall contain the "accessPointName", "chargingID",  
"pDPType", and the Quality of Service, "locationInformationGPRS", "timeAndTimeZone", if available.  
The Quality of Service shall contain the Requested QoS, the Subscribed QoS and the Negotiated QoS.

All optional gPRSEventSpecificInformation parameters shall be sent according to 3G TS 23.078 subclause 6.6.1.4 and 3G TS 22.078 annex "GPRS Information provided to the CSE".

- miscGPRSInfo:  
This parameter contains DP related information.
- messageType:  
This parameter indicates whether the message is a request, i.e. resulting from a RequestReportGPRSEvent with "monitorMode" = "interrupted", or a notification, i.e. resulting from a RequestReportGPRSEvent with "monitorMode" = "notifyAndContinue".
- pDPID:  
This parameter, if present, identifies the PDP Context, within the Session dialogue, for which the event is reported.

### 11.25.2 Invoking entity (gprsSSF)

#### 11.25.2.1 Normal procedure

gprsSSF preconditions:

- (1) The gprsSSF shall be in state "Monitoring" or "WaitingForInstructions".
- (2) The GPRS session or PDP context FSM proceeds to an EDP that is armed.

gprsSSF postconditions:

- (1) The gprsSSF stays in the state "Monitoring" if the message type was notification and there are still EDPs armed that can be met or an ApplyChargingReportGPRS is requested.
- (2) The gprsSSF moves to the state "Idle" if the message type was notification and there are no more EDPs armed that can be met, or no more ApplyChargingReportGPRS is requested or no more PDP contexts pending.
- (3) The gprsSSF moves to the state "Waiting for Instructions" if the message type was request. GPRS session or PDP context processing is interrupted.

If an EDP-R is met that causes the release of a GPRS session or PDP context, all EDPs related to the GPRS session or PDP Context shall be disarmed.

### 11.25.2.2 Error handling

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 TCAP services which are used for reporting operation errors are described in clause 12.

## CHANGE REQUEST

*Please see embedded help file at the bottom of this page for instructions on how to fill in this form correctly.*

29.078 CR 116r1

Current Version: 3.4.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑

↑ CR number as allocated by MCC support team

For submission to: CN#9  
*list expected approval meeting # here*

for approval  
for information

strategic  
non-strategic

(for SMG  
use only)

Form: CR cover sheet, version 2 for 3GPP and SMG      The latest version of this form is available from: <ftp://ftp.3gpp.org/Information/CR-Form-v2.doc>

**Proposed change affects:** (at least one should be marked with an X) (U)SIM ME UTRAN / Radio Core Network

**Source:**

N2

**Date:** 1 Sept. 2000

**Subject:**

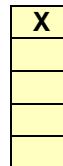
Corrections on cause definitions

**Work item:**

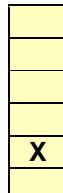
CAMEL Phase 3

**Category:**  
*(only one category shall be marked with an X)*

- F Correction
- A Corresponds to a correction in an earlier release
- B Addition of feature
- C Functional modification of feature
- D Editorial modification



**Release:** Phase 2  
Release 96  
Release 97  
Release 98  
Release 99  
Release 00



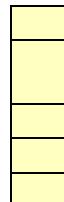
**Reason for change:**

1. Cause type definition: ASN.1 syntax correction: range constraint 'minCauseLength' must begin with lower case.
2. GPRSCause type definition. GPRSCause should be one octet.  
This range constraints and description do not suit with each other:
  - According to 3G TS 29.060 cause information element is defined with fix 2 bytes (1st octet: "Type = 1 (Decimal)"; 2nd octet: "cause value"). Therefore the cause value itself for GPRSCause should be one octet.
  - ITU-T Q.850 is referenced but not applicable to GPRS causes.
  - According to comment just the cause value (only 1 Byte) shall be included.
  - Currently GPRSCause octet string is defined with range 2..32 analogous to 'Cause'.

**Clauses affected:** 5.1

**Other specs affected:**

Other 3G core specifications  
Other GSM core specifications  
MS test specifications  
BSS test specifications  
O&M specifications



- List of CRs:

**Other comments:**

**\*\*\* First modified part in 5.1 \*\*\***

```
Cause {PARAMETERS-BOUND : bound}          ::= OCTET STRING (SIZE(  
|   MinCauseLength .. bound.&maxCauseLength)  
-- Indicates the cause for interface related information.  
-- Refer to ETS 300 356-1 [8] Cause parameter for encoding.  
-- For the use of cause and location values refer to ITU-T Recommendation Q.850 [22]  
-- Shall always include the cause value and shall also include the diagnostics field,  
-- if available.
```

**\*\*\* Next modified part in 5.1 \*\*\***

```
GPRSCause {PARAMETERS-BOUND : bound}          ::= OCTET STRING (SIZE(1  
|   MinCauseLength .. bound.&maxCauseLength)  
-- Indicates the cause for interface related information.  
-- Refer to 3G TS 29.060 [43] Cause parameter for encoding.  
-- For the use of cause and location values refer to ITU-T Recommendation Q.850 [22]  
-- Shall only include the cause value.
```