3GPP TSG CN Plenary Meeting #12 **Tdoc NP-010312**
Stockholm, Sweden, 13th - 15th June 2001

Source: TSG CN WG2

Title: CRs on R99 and Rel4 Work Item CAMEL3

Agenda item: 7.2

Document for: APPROVAL

Introduction:

This document contains 8 CRs on R99 and Rel-4 Work Item ”CAMEL3”, that have been agreed by TSG CN WG2, and are forwarded to TSG CN Plenary meeting #12 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.078	161	1	N2-010384	R99	Correction to IMPORT statements	F	3.7.0
29.078	176		N2-010385	Rel-4	Correction to IMPORT statements	A	4.0.0
29.078	162	3	N2-010456	R99	ASN.1 syntax correction	F	3.7.0
29.078	163	3	N2-010457	Rel-4	ASN.1 syntax correction	A	4.0.0
29.078	164	2	N2-010441	R99	Correction of the MAXIMUM-FOR-FCI-BILLING-CHARGING value	F	3.7.0
29.078	165		N2-010336	Rel-4	Correction of the MAXIMUM-FOR-FCI-BILLING-CHARGING value	A	4.0.0
29.078	166	1	N2-010393	R99	Correction of the gprsSSF error handling	F	3.7.0
29.078	167		N2-010338	Rel-4	Correction of the gprsSSF error handling	A	4.0.0

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010336

CR-Form-v3

CHANGE REQUEST

⌘ **29.078** **CR** **165** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘	Correction of the MAXIMUM-FOR-FCI-BILLING-CHARGING value
Source:	⌘	CN2
Work item code:	⌘	CAMEL phase 3
Date:	⌘	4.5.2001
Category:	⌘	**A**
Release:	⌘	REL-4

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

Use one of the following releases:

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

Reason for change:	⌘	The value of MAXIMUM-FOR-FCI-BILLING-CHARGING does not allow record 160 octets free format data.
Summary of change:	⌘	The maximum length is corrected to the value 174.
Consequences if not approved:	⌘	Inconsistence between stage 2 and stage 3 may affect lost of charging information.

Clauses affected:	⌘	5.5
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

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

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

2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.

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

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

5.5 Classes

…

unmodified asn.1

…

```
capSpecificBoundSet PARAMETERS-BOUND ::=
{
    MINIMUM-FOR-ACCESS-POINT-NAME               1
    MAXIMUM-FOR-ACCESS-POINT-NAME               100
    MINIMUM-FOR-ACH-BILLING-CHARGING            5
    MAXIMUM-FOR-ACH-BILLING-CHARGING            177
    MINIMUM-FOR-ATTRIBUTES                      2
    MAXIMUM-FOR-ATTRIBUTES                      10
    MAXIMUM-FOR-BEARER-CAPABILITY               11
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER         1
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER         41
    MINIMUM-FOR-CALLED-PARTY-NUMBER             3
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10
    MINIMUM-FOR-CALL-RESULT                     12
    MAXIMUM-FOR-CALL-RESULT                     186
    MINIMUM-FOR-CARRIER                         4
    MAXIMUM-FOR-CARRIER                         4
    MINIMUM-FOR-CAUSE                           2
    MAXIMUM-FOR-CAUSE                           32
    MINIMUM-FOR-DIGITS                          2
    MAXIMUM-FOR-DIGITS                          16
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA       1
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA       160
    MINIMUM-FOR-FCI-BILLING-CHARGING            5
    MAXIMUM-FOR-FCI-BILLING-CHARGING            174
    MINIMUM-FOR-GENERIC-NUMBER                  3
    MAXIMUM-FOR-GENERIC-NUMBER                  11
    MINIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MINIMUM-FOR-IP-SSP-CAPABILITIES             1
    MAXIMUM-FOR-IP-SSP-CAPABILITIES             4
    MINIMUM-FOR-LOCATION-NUMBER                 2
    MAXIMUM-FOR-LOCATION-NUMBER                 10
    MINIMUM-FOR-MESSAGE-CONTENT                 1
    MAXIMUM-FOR-MESSAGE-CONTENT                 127
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        2
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        10
    MINIMUM-FOR-PDP-ADDRESS-LENGTH              1
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH              63
    MINIMUM-FOR-REDIRECTING-ID                  2
    MAXIMUM-FOR-REDIRECTING-ID                  10
    MINIMUM-FOR-GSMSCF-ID                       2
    MAXIMUM-FOR-GSMSCF-ID                       10
    MINIMUM-FOR-SCI-BILLING-CHARGING            4
    MAXIMUM-FOR-SCI-BILLING-CHARGING            69
    MINIMUM-FOR-TIME-AND-TIMEZONE               8
    MAXIMUM-FOR-TIME-AND-TIMEZONE               8
    NUM-OF-BCSM-EVENT                           10
    NUM-OF-SMS-EVENTS                           10
    NUM-OF-GPRS-EVENTS                          10
    NUM-OF-EXTENSIONS                           10
    NUM-OF-GENERIC-NUMBERS                      5
    NUM-OF-MESSAGE-IDS                          16
}
END
```

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

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010338

CR-Form-v3

CHANGE REQUEST

⌘ **29.078** **CR** **167** ⌘ rev **-** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘	Correction of the gprsSSF error handling
Source:	⌘	CN2
Work item code:	⌘	CAMEL phase 3
Date:	⌘	4.5.2001
Category:	⌘	**A**
Release:	⌘	REL-4

Use one of the following categories:
F *(correction)*
A *(corresponds to a correction in an earlier release)*
B *(Addition of feature),*
C *(Functional modification of feature)*
D *(Editorial modification)*
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Use one of the following releases:

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

Reason for change:	⌘	The gprsSSF reaction to the operation error shall be independent of the opening or continuation of the dialogue.
Summary of change:	⌘	Differences related to TC-BEGIN and TC-CONTINUE error handling are removed.
Consequences if not approved:	⌘	Different error handling of same application layer error when the operations are carried in different way in TC.

Clauses affected:	⌘	12.1.7.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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

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

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 TC 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 TC 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 dialogue shall be maintained. I.e. the error or reject shall be transmitted with a TC-CONTINUE request 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.

- on expiration of application timer T_{SSF}, the TC dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason. 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 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.

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

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010384
(revision of N2-010323)

CHANGE REQUEST

⌘ **29.078** **CR** **161** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

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

Title:	⌘	Correction to IMPORT statements
Source:	⌘	CN2
Work item code:	⌘	CAMEL3
Date:	⌘	14 May 2001
Category:	⌘	F (Essential correction)
Release:	⌘	R99

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

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

Reason for change: ⌘ The purpose of this CR is two-fold.

(1) IMPORT-ing ExtensionField

CAP parameter "InitialDPGPRSArg", in section 8.1 of 29.078, uses parameter "ExtensionField".

This parameter is defined in module "CAP-datatypes" in section 5.1 of 29.078.

However, the parameter is not IMPORT-ed in section 8.1.

ExtensionField shall be included in the appropriate IMPORT statement in section 8.1, so section 8.1 can use this parameter in InitialDPGPRSArg.

The present CR proposes to add "ExtensionField" to the IMPORT statement in section 8.1 for the data type definitions from CAP-datatypes.

(2) IMPORT-ing ExtensionContainer

Data type "ExtensionContainer" is used in "LocationInformationGPRS" in section 5.1. This data type is defined in module "MAP-ExtensionDataTypes" in 29.002.

However, there is no IMPORT statement in section 5.1 in 29.078 to IMPORT this data type.

The present CR proposes to add an IMPORT statement in section 5.1 of 29.078 to IMPORT "ExtensionContainer" from 29.002.

This MAP data module shall be referenced in section 2.1 as well.

Summary of change:	⌘	(1) Including ExtensionField in the IMPORT statement in section 8.1. (2) Adding IMPORT statement to section 5.1 for ExtensionContainer.
Consequences if not approved:	⌘	Incorrect ASN.1 syntax, leading to ambiguities in the CAP spec and possibly to incorrect implementations.

Clauses affected:	⌘	2.1, 5.1, 8.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

****** First Change ******

2.1 Specifications used for IMPORTs for CAP

The following table lists the modules from which CAP V3 imports. For each module, the table indicates in which formal specification this module can be found.

Table 2-1: Module IMPORT specifications

Module Name	Specification	Ref
CS1-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3) cs1-datatypes(2) version1(0)}	ETS 300 374-1	[9]
CS2-datatypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3) in-cs2-datatypes (0) version1(0)}	EN 301 140-1	[39]
MAP-CommonDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-CommonDataTypes(18) version6(6)}	3GPP TS 29.002	[13]
MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-MS-DataTypes(11) version6(6)}	3GPP TS 29.002	[13]
MAP-CH-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-CH-DataTypes(13) version6(6)}	3GPP TS 29.002	[13]
MAP-ExtensionDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-Network(1) modules(3) map-ExtensionDataTypes(21) version6(6)}	3GPP TS 29.002	[13]
TCAPMessages {ccitt recommendation q 773 modules(2) messages(1) version3(3)}	ITU-T Q.773	[48]
Remote-Operations-Information-Objects {joint-iso-ccitt remote-operations(4) informationObjects(5) version1(0)}	ITU-T X.880	[37]
TC-Notation-Extensions {ccitt recommendation q 775 modules(2) notation-extension (4) version1(1)}	ETS 300 287-1	[6]

****** Next Change ******

5 Common CAP Types

5.1 Data types

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

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

DEFINITIONS IMPLICIT TAGS ::= BEGIN


IMPORTS

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

    BothwayThroughConnectionInd,
    CriticalityType,
    MiscCallInfo
FROM CS2-datatypes {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,
    Ext-BasicServiceCode,
    NAEA-CIC
FROM MAP-CommonDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-CommonDataTypes(18) version6(6)}

    Ext-QoS-Subscribed,
    GeographicalInformation,
    GSN-Address,
    LocationInformation,
    LSAIdentity,
    QoS-Subscribed,
    SubscriberState
FROM MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-MS-DataTypes(11) version6(6)}

    CallReferenceNumber,
    SuppressionOfAnnouncement
FROM MAP-CH-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-CH-DataTypes(13) version6(6)}

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

    TCInvokeIdSet
FROM TCAPMessages tc-Messages

    EXTENSION,
    PARAMETERS-BOUND,
    SupportedExtensions {}
FROM CAP-classes classes

    ExtensionContainer
FROM MAP-ExtensionDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-ExtensionDataTypes(21) version6(6)}
;
```

…
< unmodified text >
…

```
LocationInformationGPRS     ::= SEQUENCE {
    cellGlobalIdOrServiceAreaIdOrLAI    [0] OCTET STRING (SIZE(5..7))   OPTIONAL,
    routeingAreaIdentity                [1] RAIdentity                  OPTIONAL,
    geographicalInformation                 [2] GeographicalInformation     OPTIONAL,
    sgsn-Number                         [3] ISDN-AddressString          OPTIONAL,
    selectedLSAIdentity                 [4] LSAIdentity                 OPTIONAL,
    extensionContainer                  [5] ExtensionContainer          OPTIONAL,
    ...,
    sai-Present                         [6] NULL                        OPTIONAL
}
-- CellGlobalIdOrServiceAreaIdOrLAI and LSAIdentity are coded in accordance with
-- 3GPP TS 29.002 [13].
-- sai-Present indicates that the cellGlobalIdOrServiceAreaIdOrLAI parameter contains
-- a Service Area Identity.
```

…
< unmodified text >
…

*** Next Change ***

8 GPRS Control

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-datatypes(2) version1(0)}

    MiscCallInfo
FROM CS2-datatypes {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)}

    GSN-Address
FROM MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-MS-DataTypes(11) 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,
    ExtensionField {},
    FCIGPRSBillingChargingCharacteristics,
    GPRSChargingID,
    GPRSEventSpecificInformation {},
    GPRSEvent,
    GPRSEventType,
    GPRSMSClass,
    LocationInformationGPRS,
    PDPID,
    EndUserAddress,
    QualityOfService,
```

```
    RAIdentity,
    SCIGPRSBillingChargingCharacteristics,
    SGSNCapabilities,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes

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

;
```

…
< unmodified text >
…

```
initialDPGPRS {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        InitialDPGPRSArg {bound}
    RETURN RESULT   FALSE
    ERRORS          {missingCustomerRecord |
                     missingParameter |
                     parameterOutOfRange |
                     systemFailure |
                     taskRefused |
                     unexpectedComponentSequence |
                     unexpectedDataValue |
                     unexpectedParameter}
    CODE            opcode-initialDPGPRS
    }
--  Direction gprsSSF -> gsmSCF,Timer T_idpg
--  This operation is used by the gprsSSF when a trigger is detected at a DP in the GPRS state
--  machines to request instructions from the gsmSCF

InitialDPGPRSArg {PARAMETERS-BOUND : bound}::= SEQUENCE {
    serviceKey                  [0] ServiceKey,
    gPRSEventType               [1] GPRSEventType,
    mSISDN                      [2] ISDN-AddressString,
    iMSI                        [3] IMSI,
    timeAndTimeZone             [4] TimeAndTimezone {bound},
    gPRSMSClass                 [5] GPRSMSClass                     OPTIONAL,
    endUserAddress              [6] EndUserAddress                  OPTIONAL,
    qualityOfService            [7] QualityOfService                OPTIONAL,
    accessPointName             [8] AccessPointName{bound}          OPTIONAL,
    routeingAreaIdentity        [9] RAIdentity                      OPTIONAL,
    chargingID                  [10] GPRSChargingID                 OPTIONAL,
    sGSNCapabilities            [11] SGSNCapabilities               OPTIONAL,
    locationInformationGPRS     [12] LocationInformationGPRS        OPTIONAL,
    pDPInitiationType           [13] PDPInitiationType              OPTIONAL,
    extensions                  [14] SEQUENCE SIZE(1..bound.&numOfExtensions)   OF
                                        ExtensionField {bound}      OPTIONAL,
    ...,
    gGSNAddress                 [15] GSN-Address                    OPTIONAL,
    secondaryPDP-context        [16] NULL                           OPTIONAL
    }
--  The RouteingAreaIdentity parameter is not used.
--  The receiving entity shall ignore RouteingAreaIdentity if received.
--  The RouteingAreaIdentity is conveyed in the LocationInformationGPRS parameter.
```

…
< unmodified text >
…

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

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010385

CHANGE REQUEST

⌘ **29.078** **CR** **176** ⌘ rev ⌘ Current version: **4.0.0** ⌘

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

Title:	⌘	Correction to IMPORT statements
Source:	⌘	CN2
Work item code:	⌘	CAMEL3
Date:	⌘	14 May 2001
Category:	⌘	A
Release:	⌘	Rel-4

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R98 *(Release 1998)*
R99 *(Release 1999)*
REL-4 *(Release 4)*
REL-5 *(Release 5)*

Reason for change: ⌘

The purpose of this CR is two-fold.

(1) IMPORT-ing ExtensionField

CAP parameter "InitialDPGPRSArg", in section 8.1 of 29.078, uses parameter "ExtensionField".

This parameter is defined in module "CAP-datatypes" in section 5.1 of 29.078.

However, the parameter is not IMPORT-ed in section 8.1.

ExtensionField shall be included in the appropriate IMPORT statement in section 8.1, so section 8.1 can use this parameter in InitialDPGPRSArg.

The present CR proposes to add "ExtensionField" to the IMPORT statement in section 8.1 for the data type definitions from CAP-datatypes.

(2) IMPORT-ing ExtensionContainer

Data type "ExtensionContainer" is used in "LocationInformationGPRS" in section 5.1. This data type is defined in module "MAP-ExtensionDataTypes" in 29.002.

However, there is no IMPORT statement in section 5.1 in 29.078 to IMPORT this data type.

The present CR proposes to add an IMPORT statement in section 5.1 of 29.078 to IMPORT "ExtensionContainer" from 29.002.

This MAP data module shall be referenced in section 2.1 as well.

Summary of change:	⌘	(1) Including ExtensionField in the IMPORT statement in section 8.1. (2) Adding IMPORT statement to section 5.1 for ExtensionContainer.
Consequences if not approved:	⌘	Incorrect ASN.1 syntax, leading to ambiguities in the CAP spec and possibly to incorrect implementations.

Clauses affected:	⌘	2.1, 5.1, 8.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

****** First Change ******

2.1 Specifications used for IMPORTs for CAP

The following table lists the modules from which CAP V3 imports. For each module, the table indicates in which formal specification this module can be found.

Table 2-1: Module IMPORT specifications

Module Name	Specification	Ref
CS1-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3) cs1-datatypes(2) version1(0)}	ETS 300 374-1	[9]
CS2-datatypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) umts-network(1) modules(3) in-cs2-datatypes (0) version1(0)}	EN 301 140-1	[39]
MAP-CommonDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-CommonDataTypes(18) version6(6)}	3GPP TS 29.002	[13]
MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-MS-DataTypes(11) version6(6)}	3GPP TS 29.002	[13]
MAP-CH-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-network(1) modules(3) map-CH-DataTypes(13) version6(6)}	3GPP TS 29.002	[13]
MAP-ExtensionDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0) gsm-Network(1) modules(3) map-ExtensionDataTypes(21) version6(6)}	3GPP TS 29.002	[13]
TCAPMessages {ccitt recommendation q 773 modules(2) messages(1) version3(3)}	ITU-T Q.773	[48]
Remote-Operations-Information-Objects {joint-iso-ccitt remote-operations(4) informationObjects(5) version1(0)}	ITU-T X.880	[37]
TC-Notation-Extensions {ccitt recommendation q 775 modules(2) notation-extension (4) version1(1)}	ETS 300 287-1	[6]

****** Next Change ******

5 Common CAP Types

5.1 Data types

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

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

DEFINITIONS IMPLICIT TAGS ::= BEGIN


IMPORTS

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

    BothwayThroughConnectionInd,
    CriticalityType,
    MiscCallInfo
FROM CS2-datatypes {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,
    Ext-BasicServiceCode,
    NAEA-CIC
FROM MAP-CommonDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-CommonDataTypes(18) version6(6)}

    Ext-QoS-Subscribed,
    GeographicalInformation,
    GSN-Address,
    LocationInformation,
    LSAIdentity,
    QoS-Subscribed,
    SubscriberState
FROM MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-MS-DataTypes(11) version6(6)}

    CallReferenceNumber,
    SuppressionOfAnnouncement
FROM MAP-CH-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-CH-DataTypes(13) version6(6)}

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

    TCInvokeIdSet
FROM TCAPMessages tc-Messages

    EXTENSION,
    PARAMETERS-BOUND,
    SupportedExtensions {}
FROM CAP-classes classes

    ExtensionContainer
FROM MAP-ExtensionDataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-Network(1) modules(3) map-ExtensionDataTypes(21) version6(6)}
;
```

…
< unmodified text >
…

```
LocationInformationGPRS     ::= SEQUENCE {
    cellGlobalIdOrServiceAreaIdOrLAI    [0] OCTET STRING (SIZE(5..7))   OPTIONAL,
    routeingAreaIdentity                [1] RAIdentity                  OPTIONAL,
    geographicalInformation                 [2] GeographicalInformation     OPTIONAL,
    sgsn-Number                         [3] ISDN-AddressString          OPTIONAL,
    selectedLSAIdentity                 [4] LSAIdentity                 OPTIONAL,
    extensionContainer                  [5] ExtensionContainer          OPTIONAL,
    ...,
    sai-Present                         [6] NULL                        OPTIONAL
}
-- CellGlobalIdOrServiceAreaIdOrLAI and LSAIdentity are coded in accordance with
-- 3GPP TS 29.002 [13].
-- sai-Present indicates that the cellGlobalIdOrServiceAreaIdOrLAI parameter contains
-- a Service Area Identity.
```

…
< unmodified text >
…

*** Next Change ***

8 GPRS Control

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-datatypes(2) version1(0)}

    MiscCallInfo
FROM CS2-datatypes {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)}

    GSN-Address
FROM MAP-MS-DataTypes {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
gsm-network(1) modules(3) map-MS-DataTypes(11) 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,
    ExtensionField {},
    FCIGPRSBillingChargingCharacteristics,
    GPRSChargingID,
    GPRSEventSpecificInformation {},
    GPRSEvent,
    GPRSEventType,
    GPRSMSClass,
    LocationInformationGPRS,
    PDPID,
    EndUserAddress,
    QualityOfService,
```

```
    RAIdentity,
    SCIGPRSBillingChargingCharacteristics,
    SGSNCapabilities,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes

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

;
```

…
< unmodified text >
…

```
initialDPGPRS {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        InitialDPGPRSArg {bound}
    RETURN RESULT   FALSE
    ERRORS          {missingCustomerRecord |
                     missingParameter |
                     parameterOutOfRange |
                     systemFailure |
                     taskRefused |
                     unexpectedComponentSequence |
                     unexpectedDataValue |
                     unexpectedParameter}
    CODE            opcode-initialDPGPRS
    }
--  Direction gprsSSF -> gsmSCF,Timer T_idpg
--  This operation is used by the gprsSSF when a trigger is detected at a DP in the GPRS state
--  machines to request instructions from the gsmSCF

InitialDPGPRSArg {PARAMETERS-BOUND : bound}::= SEQUENCE {
    serviceKey                  [0] ServiceKey,
    gPRSEventType               [1] GPRSEventType,
    mSISDN                      [2] ISDN-AddressString,
    iMSI                        [3] IMSI,
    timeAndTimeZone             [4] TimeAndTimezone {bound},
    gPRSMSClass                 [5] GPRSMSClass                     OPTIONAL,
    endUserAddress              [6] EndUserAddress                  OPTIONAL,
    qualityOfService            [7] QualityOfService                OPTIONAL,
    accessPointName             [8] AccessPointName{bound}          OPTIONAL,
    routeingAreaIdentity        [9] RAIdentity                      OPTIONAL,
    chargingID                  [10] GPRSChargingID                 OPTIONAL,
    sGSNCapabilities            [11] SGSNCapabilities               OPTIONAL,
    locationInformationGPRS     [12] LocationInformationGPRS        OPTIONAL,
    pDPInitiationType           [13] PDPInitiationType              OPTIONAL,
    extensions                  [14] SEQUENCE SIZE(1..bound.&numOfExtensions)   OF
                                        ExtensionField {bound}      OPTIONAL,
    ...,
    gGSNAddress                 [15] GSN-Address                    OPTIONAL,
    secondaryPDP-context        [16] NULL                           OPTIONAL
    }
--  The RouteingAreaIdentity parameter is not used.
--  The receiving entity shall ignore RouteingAreaIdentity if received.
--  The RouteingAreaIdentity is conveyed in the LocationInformationGPRS parameter.
```

…
< unmodified text >
…

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

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010393

CR-Form-v3

CHANGE REQUEST

⌘ **29.078** **CR** **166** ⌘ rev **1** ⌘ Current version: **3.7.0** ⌘

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

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

Title:	⌘	Correction of the gprsSSF error handling
Source:	⌘	CN2
Work item code:	⌘	CAMEL phase 3
Date:	⌘	4.5.2001
Category:	⌘	**F (essential correction)**
Release:	⌘	R99

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

Use one of the following releases:

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

Reason for change:	⌘	The gprsSSF reaction to the operation error shall be independent of the opening or continuation of the dialogue.
Summary of change:	⌘	Differences related to TC-BEGIN and TC-CONTINUE error handling are removed.
Consequences if not approved:	⌘	Different error handling of same application layer error when the operations are carried in different way in TC.

Clauses affected:	⌘	12.1.7.2		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

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

1) Fill out the above form. The symbols above marked ⌘ contain pop-up help information about the field that they are closest to.
2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://www.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2000-09 contains the specifications resulting from the September 2000 TSG meetings.
3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

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

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 TC 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 TC 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 dialogue shall be maintained. I.e. the error or reject shall be transmitted with a TC-CONTINUE request 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.

- on expiration of application timer T_{SSF}, the TC dialogue shall be terminated by means of by TC-U-ABORT primitive with an Abort reason. 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 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.

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

3GPP TSG-CN WG2 Meeting #18
Puerto Rico, 14th - 18th May 2001

Tdoc N2-010441

CHANGE REQUEST

⌘ **29.078** **CR** **164** ⌘ rev **2** ⌘ Current version: **3.7.0** ⌘

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

Title:	⌘	Correction of the MAXIMUM-FOR-FCI-BILLING-CHARGING value
Source:	⌘	CN2
Work item code:	⌘	CAMEL phase 3
Date:	⌘	4.5.2001
Category:	⌘	**F (essential correction)**
Release:	⌘	R99

Use one of the following categories:
- ***F*** *(correction)*
- ***A*** *(corresponds to a correction in an earlier release)*
- ***B*** *(Addition of feature),*
- ***C*** *(Functional modification of feature)*
- ***D*** *(Editorial modification)*

Use one of the following releases:

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

Reason for change:	⌘	The current value of 172 for MAXIMUM-FOR-FCI-BILLING-CHARGING does not allow the gsmSCF to send the maximum of 160 octets free format data to the gsmSSF in the FurnishChargingInformation operation. See the *Informative section* of the present CR for coding examples. The coding examples indicate that the value of MAXIMUM-FOR-FCI-BILLING-CHARGING shall be changed from 172 to 174.
Summary of change:	⌘	The maximum length is corrected to the value 174.
Consequences if not approved:	⌘	Inconsistency between stage 2 and stage 3 and incorrect ASN.1 syntax. The result will be that the gsmSCF can not send the full 160 octets of free format data.

Clauses affected:	⌘	5.5
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

****** FOR INFORMATION ******

1. Circuit switched case:

The maximum length of FCIBillingChargingCharacteristics follows from the encoding of CAMEL-FCIBillingChargingCharacteristics. See ASN.1 syntax below.

```
FurnishChargingInformationArg {PARAMETERS-BOUND : bound} ::=
FCIBillingChargingCharacteristics{bound}

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

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

BER Encoding of fCIBCCCAMELsequence1 for 160 octets of free format data:

fCIBCCCAMELsequence1
A0 81 AB <-- length 171
freeFormatData
80 81 A0 <-- length 160, maximum length is 160
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
partyToCharge
A1 03
sendingSideID
80 01 02
AppendFreeFormatData
82 01 00

As can be concluded from the above, the maximum length of fCIBCCCAMELsequence1, inclusive of Tag, Length and Data, is 174 octets. The constant maxFCIBillingChargingLength shall therefore have a value of no less than 174.

2. GPRS case

The maximum length of FCIGPRSBillingChargingCharacteristics follows from the encoding of CAMEL-FCIGPRSBillingChargingCharacteristics. See ASN.1 syntax below.

```
FurnishChargingInformationGPRSArg {PARAMETERS-BOUND : bound} ::=
    FCIGPRSBillingChargingCharacteristics{bound}

FCIGPRSBillingChargingCharacteristics {PARAMETERS-BOUND : bound} ::= OCTET STRING (SIZE(
    bound.&minFCIBillingChargingLength .. bound.&maxFCIBillingChargingLength))
    (CONSTRAINED BY {-- shall be the result of the BER-encoded value of type -
```

```
    CAMEL-FCIGPRSBillingChargingCharacteristics {bound}})
-- This parameter indicates the GPRS billing and/or charging characteristics.
-- The violation of the UserDefinedConstraint shall be handled as an ASN.1 syntax error.

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

The maximum length of the CAMEL-FCIGPRSBillingChargingCharacteristics for is in following example 172 octets.

fCIBCCCAMELsequence1
A0 81 A9 <-- length 169
freeFormatData
80 81 A0 <-- length 160, maximum length is 160
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
pDPID
80 01 12
AppendFreeFormatData
82 01 00

3. SMS case

The maximum length of FCISMSBillingChargingCharacteristics follows from the encoding of CAMEL-FCISMSBillingChargingCharacteristics. See ASN.1 syntax below.

```
FurnishChargingInformationSMSArg {PARAMETERS-BOUND : bound}         ::=
   FCISMSBillingChargingCharacteristics {bound}

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

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

The maximum length of the CAMEL-FCISMSBillingChargingCharacteristics for is in following example 169 octets.

fCIBCCCAMELsequence1
A0 81 A6 <-- length 166
freeFormatData
80 81 A0 <-- length 160, maximum length is 160
01 02 03 04 05 06 07 08 09 00

01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
01 02 03 04 05 06 07 08 09 00
AppendFreeFormatData
82 01 00

4. Conclusion

The constant MAXIMUM-FOR-FCI-BILLING-CHARGING is used for the FCI operation for circuit switch call control, MO-SMS control and GPRS control. The value of MAXIMUM-FOR-FCI-BILLING-CHARGING shall therefore be set to the larger of 174, 172 and 169, as outlined above.

MAXIMUM-FOR-FCI-BILLING-CHARGING shall therefore be set to 174.

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

5.5 Classes

…

unmodified asn.1

…

```
capSpecificBoundSet PARAMETERS-BOUND ::=
{
    MINIMUM-FOR-ACCESS-POINT-NAME               1
    MAXIMUM-FOR-ACCESS-POINT-NAME               100
    MINIMUM-FOR-ACH-BILLING-CHARGING            5
    MAXIMUM-FOR-ACH-BILLING-CHARGING            177
    MINIMUM-FOR-ATTRIBUTES                      2
    MAXIMUM-FOR-ATTRIBUTES                      10
    MAXIMUM-FOR-BEARER-CAPABILITY               11
    MINIMUM-FOR-CALLED-PARTY-BCD-NUMBER         1
    MAXIMUM-FOR-CALLED-PARTY-BCD-NUMBER         41
    MINIMUM-FOR-CALLED-PARTY-NUMBER             3
    MAXIMUM-FOR-CALLED-PARTY-NUMBER             18
    MINIMUM-FOR-CALLING-PARTY-NUMBER            2
    MAXIMUM-FOR-CALLING-PARTY-NUMBER            10
    MINIMUM-FOR-CALL-RESULT                     12
    MAXIMUM-FOR-CALL-RESULT                     186
    MINIMUM-FOR-CARRIER                         4
    MAXIMUM-FOR-CARRIER                         4
    MINIMUM-FOR-CAUSE                           2
    MAXIMUM-FOR-CAUSE                           32
    MINIMUM-FOR-DIGITS                          2
    MAXIMUM-FOR-DIGITS                          16
    MINIMUM-FOR-FCI-BILLING-CHARGING-DATA       1
    MAXIMUM-FOR-FCI-BILLING-CHARGING-DATA       160
    MINIMUM-FOR-FCI-BILLING-CHARGING            5
    MAXIMUM-FOR-FCI-BILLING-CHARGING            174
    MINIMUM-FOR-GENERIC-NUMBER                  3
    MAXIMUM-FOR-GENERIC-NUMBER                  11
    MINIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MAXIMUM-FOR-GPRS-CAUSE-LENGTH               1
    MINIMUM-FOR-IP-SSP-CAPABILITIES             1
    MAXIMUM-FOR-IP-SSP-CAPABILITIES             4
    MINIMUM-FOR-LOCATION-NUMBER                 2
    MAXIMUM-FOR-LOCATION-NUMBER                 10
    MINIMUM-FOR-MESSAGE-CONTENT                 1
    MAXIMUM-FOR-MESSAGE-CONTENT                 127
    MINIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        2
    MAXIMUM-FOR-ORIGINAL-CALLED-PARTY-ID        10
    MINIMUM-FOR-PDP-ADDRESS-LENGTH              1
    MAXIMUM-FOR-PDP-ADDRESS-LENGTH              63
    MINIMUM-FOR-REDIRECTING-ID                  2
    MAXIMUM-FOR-REDIRECTING-ID                  10
    MINIMUM-FOR-GSMSCF-ID                       2
    MAXIMUM-FOR-GSMSCF-ID                       10
    MINIMUM-FOR-SCI-BILLING-CHARGING            4
    MAXIMUM-FOR-SCI-BILLING-CHARGING            69
    MINIMUM-FOR-TIME-AND-TIMEZONE               8
    MAXIMUM-FOR-TIME-AND-TIMEZONE               8
    NUM-OF-BCSM-EVENT                           10
    NUM-OF-SMS-EVENTS                           10
    NUM-OF-GPRS-EVENTS                          10
    NUM-OF-EXTENSIONS                           10
    NUM-OF-GENERIC-NUMBERS                      5
    NUM-OF-MESSAGE-IDS                          16
}
END
```

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

3GPP TSG-CN2 Meeting #18
PuertoRico, 14-18 May 2001

N2-010456

CR-Form-v3

CHANGE REQUEST

⌘ **29.078** **CR** **162** ⌘ rev **3** ⌘ Current version: **3.7.0** ⌘

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

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

Title:	⌘	ASN.1 syntax correction			
Source:	⌘	CN2			
Work item code:	⌘	CAMEL3	***Date:***	⌘	17 May 2001
Category:	⌘	**F (essential correction)**	***Release:***	⌘	R99

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

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

Reason for change: ⌘ There are certain errors in the ASN.1 description of CAP such as erroneous upper or lower case for parameter of type definitions, missing imports.

Summary of change: ⌘

The following changes shall be made in section 5.1:

- case correction in Type CAMEL-FCIBillingChargingCharacteristics (appendFreeFormatData), GPRSEventSpecificInformation (TimeAndTimezone), PDPInitiationType, EndUserAddress (pDPAddress)
- delete hyphen in comment (GPRSChargingID)

The following changes shall be made in section 5.7:

- correct ASN.1 keyword DEFINITIONS
- case correction inCAP-U-ABORT-Data OI (`umts-network`)
- case correction in id-CAP-U-ABORT-Reason (`as, umts-network`)
- add hyphen in comment (END)

The following changes shall be made in section 6.1.1:

- add imports ChargeNumber
- case correction NAOIiInfo (in imports)
- add missing bracket (connectToResource, establishTemporaryConnection)
- correct ASN.1 keyword bound (ContinueWitArgumentArg.chargeNumber)

The following changes shall be made in section 7.1:

- case correction ConnectSMSArg (callingPartysNumber)

The following changes shall be made in section 8.1:

- add imports PDPInitiationTypes
- case correction in CAP-GPRS-ReferenceNumber OI (`umts-network`)
- case correction in id-CAP-GPRS-ReferenceNumber (`umts-network`)
- string correction in id-CAP-GPRS-ReferenceNumber (as)

		The following changes shall be made throughout the document (ASN.1 definitions): – replace manual line break ('soft return') by paragraph marks ('hard return') which would provide a uniform appearance
Consequences if not approved:	⌘	An erroneous ASN.1 syntax is not acceptable in a standard reference document. It unnecessarily causes evaluation and correction effort for each supplier.

Clauses affected:	⌘	5.1, 5.7, 6.1.1, 7.1, 8.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

****** first modified section ******

5.1 Data types

```
.....

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


GPRSChargingID                          ::= OCTET STRING (SIZE (4))
--  The Charging ID is a unique four octet value generated by the GGSN when
-- a PDP Context is activated. A Charging ID is generated for each activated context.


GPRSEventSpecificInformation {PARAMETERS-BOUND : bound}                 ::= CHOICE {

    attachChangeOfPositionSpecificInformation
                                    [0] SEQUENCE {
            locationInformationGPRS         [0] LocationInformationGPRS OPTIONAL,
            ...
            },

    pdp-ContextchangeOfPositionSpecificInformation
                                    [1] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            chargingID                  [1] GPRSChargingID          OPTIONAL,
            locationInformationGPRS     [2] LocationInformationGPRS OPTIONAL,
            pDPType                     [3] PDPType                 OPTIONAL,
            qualityOfService            [4] QualityOfService        OPTIONAL,
            timeAndTimeZone             [5] TimeAndTimezone         OPTIONAL,
            ...,
            gGSNAddress                 [6] GSN-Address             OPTIONAL
            },

    detachSpecificInformation       [2] SEQUENCE {
            inititatingEntity           [0] InitiatingEntity        OPTIONAL,
            ...,
            routeingAreaUpdate          [1] NULL                    OPTIONAL
            },

    disconnectSpecificInformation   [3] SEQUENCE {
            inititatingEntity           [0] InitiatingEntity        OPTIONAL,
            ...,
            routeingAreaUpdate          [1] NULL                    OPTIONAL
            },

    pDPContextEstablishmentSpecificInformation
                                    [4] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            pDPType                     [1] PDPType                 OPTIONAL,
            qualityOfService            [2] QualityOfService        OPTIONAL,
            locationInformationGPRS     [3] LocationInformationGPRS OPTIONAL,
            timeAndTimeZone             [4] TimeAndTimezone         OPTIONAL,
            pDPInitiationType           [5] PDPInitiationType       OPTIONAL,
            ...,
            secondaryPDP-context        [6] NULL                    OPTIONAL
            },

    pDPContextEstablishmentAcknowledgementSpecificInformation
                                    [5] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            chargingID                  [1] GPRSChargingID          OPTIONAL,
            pDPType                     [2] PDPType                 OPTIONAL,
            qualityOfService            [3] QualityOfService        OPTIONAL,
            locationInformationGPRS     [4] LocationInformationGPRS OPTIONAL,
            timeAndTimeZone             [5] TimeAndTimezone         OPTIONAL,
            ...,
            gGSNAddress                 [6] GSN-Address             OPTIONAL
            }
        }
```

```
PDPInitiationType                           ::= ENUMERATED {
    mSInitiated                             (0),
    networkInitiated                        (1)
        }


EndUserAddress  {PARAMETERS-BOUND: bound}           ::= SEQUENCE {
    pDPTypeOrganization                     [0] OCTET STRING (SIZE(1)),
    pDPTypeNumber                           [1] OCTET STRING (SIZE(1)),
    pDPAddress                              [2] OCTET STRING (SIZE(
        bound.&minPDPAddressLength .. bound.&maxPDPAddressLength))  OPTIONAL
    }
```

****** next modified section ******

5.7 User Abort Data

```
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)}

DEFINITIONS ::= 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-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.
-- 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 gprsSSF to indicate to the gsmSCF that a
--                              specific instance already has a TC dialogue open. This error
--                              cause is typically obtained when both the gsmSCF and gprsSSF
--                              open a new dialogue at the same time.
-- no-reason-given              shall be set when any other reasons above do not apply
END -- of CAP-U-ABORT-Data
```

****** next modified section ******

6 Circuit Switched Call Control

6.1 gsmSSF/CCF - gsmSCF Interface

6.1.1 Operations and arguments

```
CAP-gsmSSF-gsmSCF-ops-args {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gsmSSF-gsmSCF-ops-args(101) version3(2)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

<...>

    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AssistingSSPIPRoutingAddress {},
    BCSMEvent {},
    BearerCapability {},
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallingPartysCategory,
    CallResult {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    ExtensionField {},
    FCIBillingChargingCharacteristics {},
    GapCriteria {},
    GapIndicators,
    GapTreatment,
    GenericNumbers {},
    HighLayerCompatibility,
    InvokeID,
    IPRoutingAddress {},
    IPSSPCapabilities {},
    leg1,
    LocationNumber {},
    MonitorMode,
    NAOliInfo,
    OCSIApplicable,
    OriginalCalledPartyID {},
    ReceivingSideID,
    RedirectingPartyID {},
    RedirectionInformation,
    RequestedInformationList {},
    RequestedInformationTypeList {},
    ScfID {},
    SCIBillingChargingCharacteristics {},
    SendingSideID,
    ServiceInteractionIndicatorsTwo,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes

    cancelFailed,
    eTCFailed,
    missingCustomerRecord,
    missingParameter,
    parameterOutOfRange,
    requestedInfoError,
    systemFailure,
    taskRefused,
    unexpectedComponentSequence,
    unexpectedDataValue,
    unexpectedParameter,
    unknownLegID
FROM CAP-errortypes errortypes

;


connectToResource {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        ConnectToResourceArg {bound}
```

```
    RETURN RESULT   FALSE
    ERRORS          {missingParameter |
                    systemFailure |
                    taskRefused |
                    unexpectedComponentSequence |
                    unexpectedDataValue |
                    unexpectedParameter}
    CODE            opcode-connectToResource
    }
-- Direction: gsmSCF -> gsmSSF, Timer: Tctr
-- This operation is used to connect a call from the gsmSSF to the
-- gsmSRF.
-- Refer to clause 11 for a description of the procedures associated with this operation.


ContinueWithArgumentArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    alertingPattern                 [1] AlertingPattern                         OPTIONAL,
    extensions                      [6] SEQUENCE SIZE(1..bound.&numOfExtensions) OF
                                          ExtensionField {bound}                OPTIONAL,
    serviceInteractionIndicatorsTwo [7] ServiceInteractionIndicatorsTwo         OPTIONAL,
    callingPartysCategory           [12] CallingPartysCategory                  OPTIONAL,
    genericNumbers                  [16] GenericNumbers {bound}                 OPTIONAL,
    cug-Interlock                   [17] CUG-Interlock                          OPTIONAL,
    cug-OutgoingAccess              [18] NULL                                   OPTIONAL,
    chargeNumber                    [50] ChargeNumber {bound}                   OPTIONAL,
    carrier                         [52] Carrier {bound}                        OPTIONAL,
    suppressionOfAnnouncement       [55] SuppressionOfAnnouncement              OPTIONAL,
    naOliInfo                       [56] NAOliInfo                              OPTIONAL,
    ...
    }


establishTemporaryConnection {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        EstablishTemporaryConnectionArg {bound}
    RETURN RESULT   FALSE
    ERRORS          {eTCFailed |
                    missingParameter |
                    systemFailure |
                    taskRefused |
                    unexpectedComponentSequence |
                    unexpectedDataValue |
                    unexpectedParameter}
    CODE            opcode-establishTemporaryConnection
    }
-- Direction: gsmSCF -> gsmSSF, Timer: Tetc
-- This operation is used to create a connection to a resource for a limited period
-- of time (e.g. to play an announcement, to collect user information); it implies
-- the use of the assist procedure. Refer to clause 11 for a description of the
-- procedures associated with this operation.
```

****** next modified section ******

7 MO SMS Control

7.1 SMS operations and arguments

```
ConnectSMSArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    callingPartysNumber             [0] ISDN-AddressString              OPTIONAL,
    destinationSubscriberNumber     [1] CalledPartyBCDNumber {bound}    OPTIONAL,
    sMSCAddress                     [2] ISDN-AddressString              OPTIONAL,
    extensions                      [10] SEQUENCE SIZE(1..bound.&numOfExtensions)   OF
                                                ExtensionField {bound}      OPTIONAL,
    ...
    }
```

****** next modified section ******

8 GPRS Control

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

<..>

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

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

;


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 ,
    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-datatypes(2) version1(0)}
;

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

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

****** end of modification ******

3GPP TSG-CN2 Meeting #18
PuertoRico, 14-18 May 2001

N2-010457

CR-Form-v3

CHANGE REQUEST

⌘ **29.078 CR 163** ⌘ rev **3** ⌘ Current version: **4.0.0** ⌘

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

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

Title:	⌘	ASN.1 syntax correction			
Source:	⌘	CN2			
Work item code:	⌘	CAMEL3	***Date:***	⌘	17 May 2001
Category:	⌘	**A**	***Release:***	⌘	Rel-4

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

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

Reason for change: ⌘ There are certain errors in the ASN.1 description of CAP such as erroneous upper or lower case for parameter of type definitions, missing imports.

Summary of change: ⌘

The following changes shall be made in section 5.1:

- case correction in Type CAMEL-FCIBillingChargingCharacteristics (appendFreeFormatData), GPRSEventSpecificInformation (TimeAndTimezone), PDPInitiationType, EndUserAddress (pDPAddress)
- delete hyphen in comment (GPRSChargingID)

The following changes shall be made in section 5.7:

- correct ASN.1 keyword DEFINITIONS
- case correction inCAP-U-ABORT-Data OI (`umts-network`)
- case correction in id-CAP-U-ABORT-Reason (`as, umts-network`)
- add hyphen in comment (END)

The following changes shall be made in section 6.1.1:

- add imports ChargeNumber
- case correction NAOIiInfo (in imports)
- add missing bracket (connectToResource, establishTemporaryConnection)
- correct ASN.1 keyword bound (ContinueWitArgumentArg.chargeNumber)

The following changes shall be made in section 7.1:

- case correction ConnectSMSArg (callingPartysNumber)

The following changes shall be made in section 8.1:

- add imports PDPInitiationTypes
- case correction in CAP-GPRS-ReferenceNumber OI (`umts-network`)
- case correction in id-CAP-GPRS-ReferenceNumber (`umts-network`)
- string correction in id-CAP-GPRS-ReferenceNumber (as)

		The following changes shall be made throughout the document (ASN.1 definitions): – replace manual line break ('soft return') by paragraph marks ('hard return') which would provide a uniform appearance
Consequences if not approved:	⌘	An erroneous ASN.1 syntax is not acceptable in a standard reference document. It unnecessarily causes evaluation and correction effort for each supplier.

Clauses affected:	⌘	5.1, 5.7, 6.1.1, 7.1, 8.1		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

****** first modified section ******

5.1 Data types

```
.....

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


GPRSChargingID                          ::= OCTET STRING (SIZE (4))
--  The Charging ID is a unique four octet value generated by the GGSN when
-- a PDP Context is activated. A Charging ID is generated for each activated context.


GPRSEventSpecificInformation {PARAMETERS-BOUND : bound}                 ::= CHOICE {

    attachChangeOfPositionSpecificInformation
                                    [0] SEQUENCE {
            locationInformationGPRS         [0] LocationInformationGPRS OPTIONAL,
            ...
            },

    pdp-ContextchangeOfPositionSpecificInformation
                                    [1] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            chargingID                  [1] GPRSChargingID          OPTIONAL,
            locationInformationGPRS     [2] LocationInformationGPRS OPTIONAL,
            pDPType                     [3] PDPType                 OPTIONAL,
            qualityOfService            [4] QualityOfService        OPTIONAL,
            timeAndTimeZone             [5] TimeAndTimezone         OPTIONAL,
            ...,
            gGSNAddress                 [6] GSN-Address             OPTIONAL
            },

    detachSpecificInformation       [2] SEQUENCE {
            inititatingEntity           [0] InitiatingEntity        OPTIONAL,
            ...,
            routeingAreaUpdate          [1] NULL                    OPTIONAL
            },

    disconnectSpecificInformation   [3] SEQUENCE {
            inititatingEntity           [0] InitiatingEntity        OPTIONAL,
            ...,
            routeingAreaUpdate          [1] NULL                    OPTIONAL
            },

    pDPContextEstablishmentSpecificInformation
                                    [4] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            pDPType                     [1] PDPType                 OPTIONAL,
            qualityOfService            [2] QualityOfService        OPTIONAL,
            locationInformationGPRS     [3] LocationInformationGPRS OPTIONAL,
            timeAndTimeZone             [4] TimeAndTimezone         OPTIONAL,
            pDPInitiationType           [5] PDPInitiationType       OPTIONAL,
            ...,
            secondaryPDP-context        [6] NULL                    OPTIONAL
            },

    pDPContextEstablishmentAcknowledgementSpecificInformation
                                    [5] SEQUENCE {
            accessPointName             [0] AccessPointName {bound} OPTIONAL,
            chargingID                  [1] GPRSChargingID          OPTIONAL,
            pDPType                     [2] PDPType                 OPTIONAL,
            qualityOfService            [3] QualityOfService        OPTIONAL,
            locationInformationGPRS     [4] LocationInformationGPRS OPTIONAL,
            timeAndTimeZone             [5] TimeAndTimezone         OPTIONAL,
            ...,
            gGSNAddress                 [6] GSN-Address             OPTIONAL
            }
        }
```

```
PDPInitiationType                           ::= ENUMERATED {
    mSInitiated                             (0),
    networkInitiated                        (1)
        }


EndUserAddress  {PARAMETERS-BOUND: bound}           ::= SEQUENCE {
    pDPTypeOrganization                     [0] OCTET STRING (SIZE(1)),
    pDPTypeNumber                           [1] OCTET STRING (SIZE(1)),
    pDPAddress                              [2] OCTET STRING (SIZE(
        bound.&minPDPAddressLength .. bound.&maxPDPAddressLength))  OPTIONAL
    }
```

****** next modified section ******

5.7 User Abort Data

```
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)}

DEFINITIONS ::= 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-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.
-- 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 gprsSSF to indicate to the gsmSCF that a
--                              specific instance already has a TC dialogue open. This error
--                              cause is typically obtained when both the gsmSCF and gprsSSF
--                              open a new dialogue at the same time.
-- no-reason-given              shall be set when any other reasons above do not apply
END -- of CAP-U-ABORT-Data
```

****** next modified section ******

6 Circuit Switched Call Control

6.1 gsmSSF/CCF - gsmSCF Interface

6.1.1 Operations and arguments

```
CAP-gsmSSF-gsmSCF-ops-args {ccitt(0) identified-organization(4) etsi(0) mobileDomain(0)
umts-network(1) modules(3) cap-gsmSSF-gsmSCF-ops-args(101) version3(2)}

DEFINITIONS IMPLICIT TAGS ::= BEGIN

<...>

    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AssistingSSPIPRoutingAddress {},
    BCSMEvent {},
    BearerCapability {},
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallingPartysCategory,
    CallResult {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    ExtensionField {},
    FCIBillingChargingCharacteristics {},
    GapCriteria {},
    GapIndicators,
    GapTreatment,
    GenericNumbers {},
    HighLayerCompatibility,
    InvokeID,
    IPRoutingAddress {},
    IPSSPCapabilities {},
    leg1,
    LocationNumber {},
    MonitorMode,
    NAOliInfo,
    OCSIApplicable,
    OriginalCalledPartyID {},
    ReceivingSideID,
    RedirectingPartyID {},
    RedirectionInformation,
    RequestedInformationList {},
    RequestedInformationTypeList {},
    ScfID {},
    SCIBillingChargingCharacteristics {},
    SendingSideID,
    ServiceInteractionIndicatorsTwo,
    TimeAndTimezone {},
    TimerID,
    TimerValue
FROM CAP-datatypes datatypes

    cancelFailed,
    eTCFailed,
    missingCustomerRecord,
    missingParameter,
    parameterOutOfRange,
    requestedInfoError,
    systemFailure,
    taskRefused,
    unexpectedComponentSequence,
    unexpectedDataValue,
    unexpectedParameter,
    unknownLegID
FROM CAP-errortypes errortypes

;


connectToResource {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        ConnectToResourceArg {bound}
```

```
    RETURN RESULT   FALSE
    ERRORS          {missingParameter |
                    systemFailure |
                    taskRefused |
                    unexpectedComponentSequence |
                    unexpectedDataValue |
                    unexpectedParameter}
    CODE            opcode-connectToResource
    }
-- Direction: gsmSCF -> gsmSSF, Timer: Tctr
-- This operation is used to connect a call from the gsmSSF to the
-- gsmSRF.
-- Refer to clause 11 for a description of the procedures associated with this operation.


ContinueWithArgumentArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    alertingPattern                [1] AlertingPattern                          OPTIONAL,
    extensions                     [6] SEQUENCE SIZE(1..bound.&numOfExtensions) OF
                                         ExtensionField {bound}                 OPTIONAL,
    serviceInteractionIndicatorsTwo [7] ServiceInteractionIndicatorsTwo         OPTIONAL,
    callingPartysCategory          [12] CallingPartysCategory                   OPTIONAL,
    genericNumbers                 [16] GenericNumbers {bound}                  OPTIONAL,
    cug-Interlock                  [17] CUG-Interlock                           OPTIONAL,
    cug-OutgoingAccess             [18] NULL                                    OPTIONAL,
    chargeNumber                   [50] ChargeNumber {bound}                    OPTIONAL,
    carrier                        [52] Carrier {bound}                         OPTIONAL,
    suppressionOfAnnouncement      [55] SuppressionOfAnnouncement               OPTIONAL,
    naOliInfo                      [56] NAOliInfo                               OPTIONAL,
    ...
    }


establishTemporaryConnection {PARAMETERS-BOUND : bound} OPERATION ::= {
    ARGUMENT        EstablishTemporaryConnectionArg {bound}
    RETURN RESULT   FALSE
    ERRORS          {eTCFailed |
                    missingParameter |
                    systemFailure |
                    taskRefused |
                    unexpectedComponentSequence |
                    unexpectedDataValue |
                    unexpectedParameter}
    CODE            opcode-establishTemporaryConnection
    }
-- Direction: gsmSCF -> gsmSSF, Timer: Tetc
-- This operation is used to create a connection to a resource for a limited period
-- of time (e.g. to play an announcement, to collect user information); it implies
-- the use of the assist procedure. Refer to clause 11 for a description of the
-- procedures associated with this operation.
```

****** next modified section ******

7 MO SMS Control

7.1 SMS operations and arguments

```
ConnectSMSArg {PARAMETERS-BOUND : bound} ::= SEQUENCE {
    callingPartysNumber             [0] ISDN-AddressString                  OPTIONAL,
    destinationSubscriberNumber     [1] CalledPartyBCDNumber {bound}        OPTIONAL,
    sMSCAddress                     [2] ISDN-AddressString                  OPTIONAL,
    extensions                      [10] SEQUENCE SIZE(1..bound.&numOfExtensions)   OF
                                                ExtensionField {bound}      OPTIONAL,
    ...
    }
```

****** next modified section ******

8 GPRS Control

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

<..>

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

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

;


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 ,
    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-datatypes(2) version1(0)}
;

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

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

****** end of modification ******