3GPP TSG CN Plenary Meeting #14 **Tdoc NP-010589**
Japan, Kyoto, 12th – 14th December 2001

Source: TSG CN WG2

Title: CR on R99 Work Item CAMEL3, Pack 8

Agenda item: 7.2

Document for: APPROVAL

Introduction:

This document contains 8 CRs on R99 WI CAMEL3 (4 CRs for R99 and the 4 mirror CRs for Rel-4). These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #14 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.078	212		N2-010892	R99	ApplyCharging shall be allowed in a control relationship only	F	3.9.0
29.078	226		N2-011007	Rel-4	ApplyCharging shall be allowed in a control relationship only	A	4.2.0
29.078	213		N2-010893	R99	Correction to IMPORT statements	F	3.9.0
29.078	222		N2-010981	Rel-4	Correction to IMPORT statements	A	4.2.0
29.078	215	1	N2-010994	R99	Correction to preconditions for ActivityTestGPRS	F	3.9.0
29.078	228		N2-011025	Rel-4	Correction to preconditions for ActivityTestGPRS	A	4.2.0
29.078	216	1	N2-010982	R99	Correction to error handling description for Initial DP operations	F	3.9.0
29.078	223		N2-010983	Rel-4	Correction to error handling description for Initial DP operations	A	4.2.0

3GPP TSG-CN WG2 Meeting #21
Cancun, Mexico, 26th - 30th November 2001

Tdoc N2-010892

CHANGE REQUEST

⌘ **29.078** **CR** **212** ⌘ rev ⌘ Current version: 3.9.0 ⌘

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

Title:	⌘	ApplyCharging shall be allowed in a control relationship only
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	15 November 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 procedure description of ApplyCharging does not specify a precondition related to the relationship between the gsmSCF and the gsmSSF.

This is not correct. The sending of ApplyCharging shall be permissible in a control relationship only.

This is a fundamental principle of CAMEL, which was already applied in CAMEL Phase 2. This principle has also been applied to the ApplyChargingGPRS procedure in CAMEL Phase 3.

This precondition exists in CAMEL Phase 2 and shall be applicable to CAMEL Phase 3 as well.

Summary of change: ⌘ Specify in section 11.3 that a control relationship shall exist between the gsmSCF and the gsmSSF when sending ApplyCharging.

Consequences if not approved: ⌘

- Incorrect service logic behaviour – services may send ApplyCharging outside a control relationship, resulting in service logic failure;
- Inconsistent service logic behaviour between CAMEL Phase 2 and CAMEL Phase 3;
- Service Logic implementation problems.

Clauses affected: ⌘ 11.3

Other specs affected: ⌘

- ☐ Other core specifications ⌘
- ☐ Test specifications
- ☐ O&M Specifications

Other comments: ⌘

*** For Information – extract from GSM TS 09.78 V6.5.0 ***

9.3.3 Responding entity (gsmSSF)

9.3.3.1 Normal procedure

gsmSSF preconditions:

(1) A control relationship exists between the gsmSSFand the gsmSCF.

(2) The gsmSSF is in one of the following states:

"Waiting for Instructions"; or

"Waiting for End of User Interaction"; or

"Waiting for End of Temporary Connection"; or

"Monitoring"

SSF postcondition:

(1) No gsmSSF state transition

On receipt of this operation, the gsmSSF sets the charging data using the information elements included in the operation.

The gsmSSF will start monitoring for the Answer event upon receipt of the ApplyCharging operation if Answer has not already been received on an outgoing connection to a Called Party, a Temporary Connection or a connection to a gsmSRF. Upon subsequent detection of the Answer event on the outgoing connection charging is started. If the Answer event has been received from an outgoing connection already when the ApplyCharging operation is received then charging starts immediately.

Upon release of an outgoing connection to the Called Party, the Temporary Connection or the gsmSRF connection any indication of Answer event receipt on the outgoing connection is cleared i.e. set to Answer event not received.

9.3.3.2 Error handling

TaskRefused: In addition to the generic error handling noted below, this error shall be indicated when:

- a previously received call period duration is pending,
- a tariffSwitchInterval is indicated when a previously received tariffSwitchInterval is pending.

Generic error handling for the operation related errors is described in Clause 8 and the TCAP services used for reporting operation errors are described in Clause 10.

*** First Modification ***

11.3 ApplyCharging procedure

11.3.1 General description

This operation is used for interacting from the gsmSCF with the gsmSSF function: CSE control of call duration. The ApplyChargingReport operation provides the feedback from the gsmSSF to the gsmSCF.

The charging scenarios supported by this operation are those given in 3GPP TS 22.078 for CSE control of call duration.

11.3.1.1 Parameters

- aChBillingChargingCharacteristics:
  This parameter specifies a list of parameters required for CSE control of call duration:

  The list may contain:

  - timeDurationCharging:

    This list contains the following parameters:

    - maxCallPeriodDuration:
      This parameter specifies the period of time for which a call can progress before an ApplyChargingReport shall be sent to the gsmSCF.

    - releaseIfdurationExceeded:
      This parameter specifies the action to be taken at the gsmSSF when the duration specified above has been reached. If the parameter is present, then the call is released.

    - tone:
      If the parameter is present, then a warning tone is played when the warning tone timer expires.

    - tariffSwitchInterval:
      This parameter indicates to the gsmSSF the time duration until the next tariff switch. The measurement of the elapsed tariff switch period commences immediately upon successful execution of this operation.

- partyToCharge:
  This parameter indicates the party in the call.

11.3.2 Responding entity (gsmSSF)

11.3.2.1 Normal procedure

gsmSSF precondition:

(1) A control relationship exists between the gsmSCF and the gsmSSF.

(~~1~~2) The gsmSSF is in one of the following states:

"Waiting for Instructions"
"Waiting for End of User Interaction",
"Waiting for End of Temporary Connection",
"Monitoring"

gsmSSF postcondition:

(1) No FSM state transition

On receipt of this operation, the gsmSSF sets the charging data using the information elements included in the operation and acts accordingly.

The gsmSSF will start monitoring for the Answer event upon receipt of the ApplyCharging operation if Answer has not already been received on an outgoing connection to a Called Party, a Temporary Connection or a connection to a gsmSRF. Upon subsequent detection of the Answer event on the outgoing connection charging is started. If the Answer event has been received from an outgoing connection already when the ApplyCharging operation is received then charging starts immediately.

Upon release of an outgoing connection to the Called Party, the Temporary Connection or the gsmSRF connection any indication of Answer event receipt on the outgoing connection is cleared i.e. set to Answer event not received.

11.3.2.2 Error handling

TaskRefused: In addition to the generic error handling noted below, this error shall be indicated when:

- a previously received call period duration is pending,
- a tariffSwitchInterval is indicated when a previously received tariffSwitchInterval is pending.

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

*** End of Document ***

3GPP TSG-CN WG2 Meeting #21
Cancun, Mexico, 26th - 30th November 2001

Tdoc N2-010893

CHANGE REQUEST

⌘ **29.078** **CR** **213** ⌘ rev ⌘ Current version: 3.9.0 ⌘

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

Title:	⌘	Correction to IMPORT statements
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	26 November 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: ⌘ TS 29.078, section 6.1.1, Operations and arguments, contains the following incorrect IMPORT definitions:

CallingPartysCategory: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

HighLayerCompatibility: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

RedirectionInformation: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

These IMPORT definition need to be corrected.

At the same time, the IMPORT definitions for these data types can be removed from section 5, as these data types are not used in that section.

CAP V2 has the correct IMPORT definitions for these data types.

Summary of change: ⌘ Removal of IMPORT definitions from section 5.1, correction to IMPORT definitions in section 6.1.1

Consequences if not approved: ⌘ Incorrect usage of CAP parameters in InitialDP, Connect and ContinueWithArgument.

Clauses affected: ⌘ 5.1, 6.1.1

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

Other comments: ⌘

*** First Modification ***

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 ASN.1 >

…

*** Next Modification ***

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

-- This module contains the operations and operation arguments 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

    errortypes,
    datatypes,
    operationcodes,
    classes,
    tc-Messages,
    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

    CallingPartysCategory,
    HighLayerCompatibility,
    RedirectionInformation,
    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)}

    Ext-BasicServiceCode,
    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)}

    CUG-Index,
    CUG-Interlock,
    CUG-Info,
    LocationInformation,
    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)}

    PARAMETERS-BOUND
FROM CAP-classes classes

    opcode-activityTest,
    opcode-applyCharging,
    opcode-applyChargingReport,
    opcode-assistRequestInstructions,
    opcode-callGap,
    opcode-callInformationReport,
    opcode-callInformationRequest,
    opcode-cancel,
    opcode-connect,
    opcode-connectToResource,
    opcode-continue,
    opcode-continueWithArgument,
    opcode-disconnectForwardConnection,
    opcode-establishTemporaryConnection,
    opcode-eventReportBCSM,
    opcode-furnishChargingInformation,
    opcode-initialDP,
    opcode-releaseCall,
    opcode-requestReportBCSMEvent,
    opcode-resetTimer,
    opcode-sendChargingInformation
FROM CAP-operationcodes operationcodes
```

```
    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AssistingSSPIPRoutingAddress {},
    BCSMEvent,
    BearerCapability {},
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallingPartysCategory,
    CallResult {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    Extensions {},
    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

;


…

< unmodified ASN.1 >

…
```

*** End of Document ***

3GPP TSG-CN WG2 Meeting #21
Cancun, Mexico, 26th - 30th November 2001

Tdoc N2-010981

CHANGE REQUEST

⌘ **29.078** **CR** **222** ⌘ rev ⌘ Current version: 4.2.0 ⌘

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

Title:	⌘	Correction to IMPORT statements
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	27 November 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)*

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: ⌘ TS 29.078, section 6.1.1, Operations and arguments, contains the following incorrect IMPORT definitions:

CallingPartysCategory: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

HighLayerCompatibility: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

RedirectionInformation: This data type is currently imported from CAP-datatypes. However, it shall be imported from CS1.

These IMPORT definition need to be corrected.

At the same time, the IMPORT definitions for these data types can be removed from section 5, as these data types are not used in that section.

CAP V2 has the correct IMPORT definitions for these data types.

Summary of change: ⌘ Removal of IMPORT definitions from section 5.1, correction to IMPORT definitions in section 6.1.1

Consequences if not approved: ⌘ Incorrect usage of CAP parameters in InitialDP, Connect and ContinueWithArgument.

Clauses affected: ⌘ 5.1, 6.1.1

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

Other comments: ⌘

*** First Modification ***

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)}

;
…
```

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…

*** Next Modification ***

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

-- This module contains the operations and operation arguments 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

    errortypes,
    datatypes,
    operationcodes,
    classes,
    tc-Messages,
    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

    CallingPartysCategory,
    HighLayerCompatibility,
    RedirectionInformation,
    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)}

    Ext-BasicServiceCode,
    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)}

    CUG-Index,
    CUG-Interlock,
    CUG-Info,
    LocationInformation,
    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)}

    PARAMETERS-BOUND
FROM CAP-classes classes

    opcode-activityTest,
    opcode-applyCharging,
    opcode-applyChargingReport,
    opcode-assistRequestInstructions,
    opcode-callGap,
    opcode-callInformationReport,
    opcode-callInformationRequest,
    opcode-cancel,
    opcode-connect,
    opcode-connectToResource,
    opcode-continue,
    opcode-continueWithArgument,
    opcode-disconnectForwardConnection,
    opcode-establishTemporaryConnection,
    opcode-eventReportBCSM,
    opcode-furnishChargingInformation,
    opcode-initialDP,
    opcode-releaseCall,
    opcode-requestReportBCSMEvent,
    opcode-resetTimer,
    opcode-sendChargingInformation
FROM CAP-operationcodes operationcodes
```

```
    AChBillingChargingCharacteristics {},
    AdditionalCallingPartyNumber {},
    AlertingPattern,
    AssistingSSPIPRoutingAddress {},
    BCSMEvent,
    BearerCapability {},
    CalledPartyNumber {},
    CalledPartyBCDNumber {},
    CallingPartyNumber {},
    CallingPartysCategory,
    CallResult {},
    Carrier,
    Cause {},
    CGEncountered,
    ChargeNumber {},
    ControlType,
    CorrelationID {},
    DestinationRoutingAddress {},
    EventSpecificInformationBCSM {},
    EventTypeBCSM,
    Extensions {},
    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

;


…

< unmodified ASN.1 >

…
```

*** End of Document ***

3GPP TSG CN WG2 Meeting #21 ***N2-010982***
Cancun, Mexico, 26th - 30th November 2001

CHANGE REQUEST

⌘ **29.078** **CR** **216** ⌘ **rev** **1** ⌘ Current version: **3.9.0** ⌘

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

Title:	⌘	Correction to error handling description for Initial DP operations
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	27 November 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 procedure descriptions for InitialDPGPRS and InitialDPSMS contain incorrect error handling description.

When the subscriber abandons after the InitialDPGPRS or InitialDPSMS operation has been sent, then the gprsSSF or smsSSF shall abandon the relationship with the gsmSCF, by sending an Abort to the TC. It is specified for InitialDP procedure that TC will in that case wait until it has received the first response from the gsmSCF, before it sends the Abort to the gsmSCF.

However, for InitialDPGPRS and InitialDPSMS, it is specified that it is the gprsSSF or smsSSF that shall wait until it has received the first response from the gsmSCF, before it sends the Abort to the TC.

That is not correct. The TC-User (in this case the gprsSSF or smsSSF) shall issue the Abort to the TC at the moment that the Abandon occurs. The TC may then wait for the first response from the gsmSCF, before sending the Abort to the gsmSCF.

The behaviour of TC for the various TC-Users shall be identical.

This incorrect definition of a requirement on gprsSSF or smsSSF shall be rectified. The present CR proposes rectifying text.

The term "InitialGPRSEvent" shall be replaced by "InitialDPGPRS". The term "InitialGPRSEvent" may be associated with an event notification; "InitialDPGPRS" is the correct term in this case.

In addition, the InitialDPSMS procedure description contains requirements that pertain to a response from the SMSC or the expiry of a response timer. That description is not in place in that section and is misleading. A response from the SMSC can not be received before the processing of InitialDPSMS has completed. The "timer" referred to in that sentence is the operation timer associated with the MAP operation used for submitting the SMS to the SMSC.

	That timer can not expire before the processing of InitialDPSMS has completed. This misleading and misplaced text shall therefore be removed. The correction proposed in this CR does not affect the external CAP signalling, between the gsmSCF and the gprsSSF or smsSSF. The correction relates to internal signalling only.
Summary of change: ⌘	Correction to error handling description of InitialDPGPRS and InitialDPSMS.
Consequences if not approved: ⌘	- Incorrect requirement on the TC-User for gprsSSF and smsSSF, leading to ambiguity for implementors and possibly to incorrect implementations; - Ambiguous expectations w.r.t. the behaviour of TC; - Inconsistent implementation of gprsSSF and smsSSF, resulting in unexpected behaviour.

Clauses affected:	⌘	11.31, 11.32		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** For Information ***

11.30 InitialDP procedure

…

< unmodified >

…

11.30.2 Invoking entity (gsmSSF)

11.30.2.1 Normal procedure

gsmSSF precondition:

(1) An event fulfilling the criteria for the DP being executed has been detected.

(2) Call gapping and SS7 overload are not in effect for the call.

gsmSSF postcondition:

(1) A control relationship has been established if the DP was armed as a TDP-R. The gsmSSF moves to the State "Waiting for Instructions".

The address of the gsmSCF is fetched from the valid CSI. The gsmSSF provides all available parameters. Otherwise the gsmSSF proceeds with call handling without CAMEL Service.

The gsmSSF application timer T_{SSF} is set when the gsmSSF sends "InitialDP" for requesting instructions from the gsmSCF. It is used to prevent excessive call suspension time.

11.30.2.2 Error handling

If the destination gsmSCF is not accessible then the call proceeds according to the 'default call handling' parameter in the CSI.

On expiration of T_{SSF} before receiving any operation, the gsmSSF aborts the interaction with the gsmSCF and the call continues according to the 'default call handling' parameter in the CSI.

If the calling party abandons after the sending of "InitialDP", then the gsmSSF aborts the control relationship by means of an abort to TC. Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** First Modification ***

11.31 InitialDPGPRS procedure

…

< unmodified >

…

11.31.2 Invoking entity (gprsSSF)

11.31.2.1 Normal procedure

gprsSSF preconditions:

(1) An event has been met that is armed as TDP.

(2) There is no GPRS dialogue active for that PDP Context or for the GPRS Session.

gprsSSF postcondition:

(1) A control relationship has been established and the gprsSSF is in state "waiting for instructions".

The address of the gsmSCF that the InitialDPGPRS operation shall be sent to is fetched from the valid CSI. The gprsSSF provides all available parameters.

A control relationship is established with the gsmSCF. The gprsSSF application timer T_{SSF} is set when the gprsSSF sends InitialDPGPRS for requesting instructions from the gsmSCF. It is used to prevent from excessive GPRS session or PDP context duration or volume usage.

11.31.2.2 Error handling

If the destination gsmSCF is not accessible then the gprsSSF instructs the SGSN to handle the GPRS session or PDP context according to the Default GPRS handling parameter of the valid CSI.

On expiration of T_{SSF} before receiving any operation, the gprsSSF aborts the interaction with the gsmSCF and instructs the SGSN to handle the call according to the Default GPRS handling parameter of the valid CSI.

If the MS abandons the establishment of a GPRS session or PDP context after the sending of ~~InitialGPRSEvent~~InitialDPGPRS, then the gprsSSF aborts the control relationship by means of an abort to TC.~~after the first response from the gsmSCF has been received.~~ Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** Next Modification ***

11.32 InitialDPSMS procedure

…

< unmodified >

…

11.32.2 Invoking entity (gsmSSF or gprsSSF)

11.32.2.1 Normal procedure

gsmSSF/gprsSSF preconditions:

(1) A MO SMS submission attempt has been initiated.

(2) An event has been detected at a DP.

gsmSSF/gprsSSF postcondition:

(1) A control relationship has been established and the gsmSSF/gprsSSF waits for instructions from the gsmSCF.

The address of the gsmSCF the InitialDPSMS operation shall be sent to is fetched from the SMS-CSI. The gsmSSF or gprsSSF provides all available parameters.

A control relationship is established to the gsmSCF. The gsmSSF/gprsSSF application timer T_{SSF} is set when the gsmSSF/gprsSSF sends InitialDPSMS for requesting instructions from the gsmSCF. It is used to prevent from excessive SMS delivery suspension time.

11.32.2.2 Error handling

If the destination gsmSCF is not accessible then the gsmSSF/gprsSSF instructs the MSC/SGSN to handle the SM according to the Default SMS Handling parameter of the SMS-CSI.

On expiration of T_{SSF} before receiving any operation, the gsmSSF/gprsSSF aborts the interaction with the gsmSCF and instructs the VMSC/SGSN to handle the SM according to the Default SMS Handling parameter of the SMS-CSI.

If the sending mobile party abandons after the sending of InitialDPSMS, then the gsmSSF/gprsSSF ~~closes~~aborts the control relationship by means of an abort to TC. ~~after the first answer message from the gsmSCF has been received, and after the SMSC has responded or a timer has expired.~~ Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** End of Document ***

3GPP TSG CN WG2 Meeting #21 ***N2-010983***
Cancun, Mexico, 26th - 30th November 2001

CHANGE REQUEST

⌘ **29.078** **CR** **223** ⌘ **rev** ⌘ Current version: **4.2.0** ⌘

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

Title:	⌘	Correction to error handling description for Initial DP operations
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	27 November 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)*

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 procedure descriptions for InitialDPGPRS and InitialDPSMS contain incorrect error handling description.

When the subscriber abandons after the InitialDPGPRS or InitialDPSMS operation has been sent, then the gprsSSF or smsSSF shall abandon the relationship with the gsmSCF, by sending an Abort to the TC. It is specified for InitialDP procedure that TC will in that case wait until it has received the first response from the gsmSCF, before it sends the Abort to the gsmSCF.

However, for InitialDPGPRS and InitialDPSMS, it is specified that it is the gprsSSF or smsSSF that shall wait until it has received the first response from the gsmSCF, before it sends the Abort to the TC.

That is not correct. The TC-User (in this case the gprsSSF or smsSSF) shall issue the Abort to the TC at the moment that the Abandon occurs. The TC may then wait for the first response from the gsmSCF, before sending the Abort to the gsmSCF.

The behaviour of TC for the various TC-Users shall be identical.

This incorrect definition of a requirement on gprsSSF or smsSSF shall be rectified. The present CR proposes rectifying text.

The term "InitialGPRSEvent" shall be replaced by "InitialDPGPRS". The term "InitialGPRSEvent" may be associated with an event notification; "InitialDPGPRS" is the correct term in this case.

In addition, the InitialDPSMS procedure description contains requirements that pertain to a response from the SMSC or the expiry of a response timer. That description is not in place in that section and is misleading. A response from the SMSC can not be received before the processing of InitialDPSMS has completed. The "timer" referred to in that sentence is the operation timer associated with the MAP operation used for submitting the SMS to the SMSC.

	That timer can not expire before the processing of InitialDPSMS has completed. This misleading and misplaced text shall therefore be removed. The correction proposed in this CR does not affect the external CAP signalling, between the gsmSCF and the gprsSSF or smsSSF. The correction relates to internal signalling only.
Summary of change: ⌘	Correction to error handling description of InitialDPGPRS and InitialDPSMS.
Consequences if not approved: ⌘	- Incorrect requirement on the TC-User for gprsSSF and smsSSF, leading to ambiguity for implementors and possibly to incorrect implementations; - Ambiguous expectations w.r.t. the behaviour of TC; - Inconsistent implementation of gprsSSF and smsSSF, resulting in unexpected behaviour.

Clauses affected:	⌘	11.31, 11.32		
Other specs affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** For Information ***

11.30 InitialDP procedure

…

< unmodified >

…

11.30.2 Invoking entity (gsmSSF)

11.30.2.1 Normal procedure

gsmSSF precondition:

(1) An event fulfilling the criteria for the DP being executed has been detected.

(2) Call gapping and SS7 overload are not in effect for the call.

gsmSSF postcondition:

(1) A control relationship has been established if the DP was armed as a TDP-R. The gsmSSF moves to the State "Waiting for Instructions".

The address of the gsmSCF is fetched from the valid CSI. The gsmSSF provides all available parameters. Otherwise the gsmSSF proceeds with call handling without CAMEL Service.

The gsmSSF application timer T_{SSF} is set when the gsmSSF sends "InitialDP" for requesting instructions from the gsmSCF. It is used to prevent excessive call suspension time.

11.30.2.2 Error handling

If the destination gsmSCF is not accessible then the call proceeds according to the 'default call handling' parameter in the CSI.

On expiration of T_{SSF} before receiving any operation, the gsmSSF aborts the interaction with the gsmSCF and the call continues according to the 'default call handling' parameter in the CSI.

If the calling party abandons after the sending of "InitialDP", then the gsmSSF aborts the control relationship by means of an abort to TC. Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** First Modification ***

11.31 InitialDPGPRS procedure

…

< unmodified >

…

11.31.2 Invoking entity (gprsSSF)

11.31.2.1 Normal procedure

gprsSSF preconditions:

(1) An event has been met that is armed as TDP.

(2) There is no GPRS dialogue active for that PDP Context or for the GPRS Session.

gprsSSF postcondition:

(1) A control relationship has been established and the gprsSSF is in state "waiting for instructions".

The address of the gsmSCF that the InitialDPGPRS operation shall be sent to is fetched from the valid CSI. The gprsSSF provides all available parameters.

A control relationship is established with the gsmSCF. The gprsSSF application timer T_{SSF} is set when the gprsSSF sends InitialDPGPRS for requesting instructions from the gsmSCF. It is used to prevent from excessive GPRS session or PDP context duration or volume usage.

11.31.2.2 Error handling

If the destination gsmSCF is not accessible then the gprsSSF instructs the SGSN to handle the GPRS session or PDP context according to the Default GPRS handling parameter of the valid CSI.

On expiration of T_{SSF} before receiving any operation, the gprsSSF aborts the interaction with the gsmSCF and instructs the SGSN to handle the call according to the Default GPRS handling parameter of the valid CSI.

If the MS abandons the establishment of a GPRS session or PDP context after the sending of ~~InitialGPRSEvent~~InitialDPGPRS, then the gprsSSF aborts the control relationship by means of an abort to TC.~~after the first response from the gsmSCF has been received.~~ Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** Next Modification ***

11.32 InitialDPSMS procedure

…

< unmodified >

…

11.32.2 Invoking entity (gsmSSF or gprsSSF)

11.32.2.1 Normal procedure

gsmSSF/gprsSSF preconditions:

(1) A MO SMS submission attempt has been initiated.

(2) An event has been detected at a DP.

gsmSSF/gprsSSF postcondition:

(1) A control relationship has been established and the gsmSSF/gprsSSF waits for instructions from the gsmSCF.

The address of the gsmSCF the InitialDPSMS operation shall be sent to is fetched from the SMS-CSI. The gsmSSF or gprsSSF provides all available parameters.

A control relationship is established to the gsmSCF. The gsmSSF/gprsSSF application timer T_{SSF} is set when the gsmSSF/gprsSSF sends InitialDPSMS for requesting instructions from the gsmSCF. It is used to prevent from excessive SMS delivery suspension time.

11.32.2.2 Error handling

If the destination gsmSCF is not accessible then the gsmSSF/gprsSSF instructs the MSC/SGSN to handle the SM according to the Default SMS Handling parameter of the SMS-CSI.

On expiration of T_{SSF} before receiving any operation, the gsmSSF/gprsSSF aborts the interaction with the gsmSCF and instructs the VMSC/SGSN to handle the SM according to the Default SMS Handling parameter of the SMS-CSI.

If the sending mobile party abandons after the sending of InitialDPSMS, then the gsmSSF/gprsSSF ~~closes~~aborts the control relationship by means of an abort to TC. ~~after the first answer message from the gsmSCF has been received, and after the SMSC has responded or a timer has expired.~~ Note that TC will wait until the first response message from the gsmSCF has been received before it sends an abort to the gsmSCF (see also clause 12).

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

*** End of Document ***

3GPP TSG CN WG2 Meeting #21 ***N2-010994***
Cancun, Mexico, 26th - 30th November 2001

CHANGE REQUEST

⌘ **29.078** **CR** **215** ⌘ **rev** **1** ⌘ Current version: **3.9.0** ⌘

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

Title:	⌘	Correction to preconditions for ActivityTestGPRS
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	27 November 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 description of ActivityTest and ActivityTestGPRS is incorrect and incomplete. It is crucial that these descriptions are corrected, for the following reasons:

- ActivityTest in CAP V3 is distinctively different from ActivityTest in CAP V2. This is caused by the introduction of the CallGap operation. CallGap causes an SSME-FSM transition to the state "Non-call Associated Treatment". Hence, ActivityTest may be received in SSME-FSM state "Idle Management" and in SSME-FSM state "Non-call Associated Treatment".
- The handling of ActivityTestGPRS is distinctively different from the handling of ActivityTest. The main reason is that ActivityTestGPRS is sent in a new TC dialogue, whilst ActivityTest is sent in an existing TC dialogue.

The following error corrections are needed for ActivityTest (AT):

- When AT is received in the gsmSSF, then a precondition shall be that the SSME-FSM is in the state "Idle Management" or "Non-call Associated Treatment". The latter state would be the result of a previous CallGap operation.
- When AT is received in the assistSSF or gsmSRF, then a precondition shall be that the SSME-FSM is in the state "Idle Management". CallGap may not be sent to the assistSSF or gsmSRF, so the assistSSF or gsmSRF can not be in the "Non-call Associated Treatment" state when receiving AT.
- The pre- and postconditions shall be clearly split up for (1) gsmSSF and (2) gsmSRF or assistSSF. Reason is that gsmSSF has two possible SSME states in which AT may be received: "Idle Management" and "Non-call Associated Treatment". The gsmSRF or assistSSF SSME has a single state only: "Idle Management". This difference is due to the fact that the gsmSSF may receive the CallGap operation, which results in an SSME state transition to and "Non-call Associated Treatment", if not already in that state.
- For both the gsmSSF and the gsmSRF or assistSSF, a postcondition shall be

that the SSME-FSM is in state "Non-call Associated Treatment".

- When the SSME-FSM in the gsmSSF has processed AT, it shall return to the state "Idle Management" only if there are no other management activities active at that moment. More precisely, if at the moment of receiving AT, Call Gapping is active in the gsmSSF, then the SSME-FSM shall remain in the state "Non-call Associated Treatment" after the SSME-FSM has processed AT. Otherwise, Call Gapping may be unintentionally de-activated.
- The postcondition "…the SSME will in that case **never** receive the "ActivityTest" request indication…" shall be replaced by "… the SSME will in that case **not** receive the "ActivityTest" request indication…". The term "never" gives the impression that this postcondition also applies to subsequent AT request indications for this SSME.
- The postcondition "… the SSME will in that case not receive the ActivityTest **operation**…" shall be replaced by "… the SSME will in that case not receive the ActivityTest **indication**…".
- The wording "…"ActivityTest" **req.ind**…" shall be replaced by "…"ActivityTest" **indication** …". "Req.ind" is not a common abbreviation and may be misinterpreted. Moreover, the TC primitive can be a "request" or an "indication", but not both. On the receiving side, it shall be "indication".
- When the SSME-FSM in the assistSSF or gsmSRF has processed AT, it shall always return to the state "Idle Management". Call Gapping is not applicable to the assistSSF or gsmSRF, so the assistSSF or gsmSRF has no requirement to stay in state "Non-call Associated Treatment".

The following error corrections are needed for ActivityTestGPRS (AT-GPRS):

- The general statement "This operation opens a new **SS7 dialogue** between gsmSCF and gprsSSF" shall be replaced by "This operation opens a new **TC dialogue** between gsmSCF and gprsSSF".
- It shall be specified what the behaviour of the gprsSSF shall be in the case that there is an active TC dialogue at the moment of receiving ActivityTestGPRS.
- A precondition shall be that the SSME-FSM in the gprsSSF is in state "Idle Management". The "Non-call Associated Treatment" state is not applicable to the SSME-FSM in the gprsSSF, other than during the processing of AT-GPRS.
- A postcondition shall be that the SSME-FSM is in state "Non-call Associated Treatment".
- When the SSME-FSM has processed AT-GPRS, it shall return to the state "Idle Management". This postcondition shall be specified for both successful AT-GPRS (GPRS Reference Number in use) and unsuccessful AT-GPRS (GPRS Reference Number not in use). Reason is that in both cases, the AT-GPRS indication is sent to the SSME-FSM. The SSME-FSM will ascertain if a AT-GPRS Return Result shall be sent to the gsmSCF.
- The criterion of returning AT-GPRS Return Result is described incorrectly. The criterion for returning AT-GPRS Return Result shall be:

  "**The SSME-FSM shall send AT-GPRS Return Result if there is a gprsSSF using the GPRS-Reference Number. Otherwise, The SSME-FSM shall issue a U-Abort.**"
- The issuing of the U-Abort in the unsuccessful AT-GPRS case, shall be done by the SSME-FSM, not by the TC-User.
- The phrasing "… the SSME **will instruct to issue** a U-Abort…" shall be replaced by "… the TC User in the gprsSSF **will issue** a U-Abort…". The wording "…will instruct to issue…" implies that the U-Abort shall be issued by another entity than the SSME. That is not correct; it is the SSME that issues

		this U-Abort. - A postcondition shall be that the SSME-FSM returns to state "Idle Management". The present CR proposes corrections, in line with the above descriptions.
Summary of change:	⌘	Correct the description of the ActivityTest and ActivityTestGPRS procedures.
Consequences if not approved:	⌘	- Ambiguity in the implementation of the ActivityTest and ActivityTestGPRS procedures; - Incorrect and inconsistent behaviour of the gsmSSF or gprsSSF on the reception of ActivityTest or ActivityTestGPRS respectively; - Unspecified behaviour in the case of overlapping TC dialogues at the time of ActivitytestGPRS. - Active Call Gapping in the gsmSSF may be de-activated due to ActivityTest.

Clauses affected:	⌘	11.1, 11.2		
Other specs Affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** First Modification ***

11.1 ActivityTest procedure

11.1.1 General description

This operation is used to check for the continued existence of a relationship between the gsmSCF and gsmSSF, gsmSCF and gsmSRF or gsmSCF and assistSSF. If the relationship is still in existence, then the receiving entity will respond. If no reply is received within a given time period, then the gsmSCF which sent this operation will assume that the receiving entity has failed in some way and will take the appropriate action.

11.1.1.1 Parameters

None.

11.1.2 Responding entity (gsmSSF, gsmSRF or assistSSF)

11.1.2.1 Normal procedure

gsmSSF~~/gsmSRF/assistSSF~~ preconditions:

(1) A relationship exists between the gsmSCF and the gsmSSF~~/gsmSRF/assistSSF~~.

(2) The SSME~~-~~FSM is ~~is~~in the state "Idle Management" or "Non-call Associated Treatment".

gsmSRF/assistSSF preconditions:

(1) A relationship exists between the gsmSCF and the gsmSRF/assistSSF.

(2) The SSME-FSM is in the state "Idle Management".

gsmSSF~~/assistSSF~~ postconditions:

(1) The SSME-FSM stays in, or moves to the state "Non-call Associated Treatment".

(2) If the Dialogue ID is active and ~~if~~ there is a gsmSSF~~/assistSSF~~ using the dialogue, then the SSME sends a Return Result "ActivityTest" to the gsmSCF. If there are no other management activities (e.g. Call Gapping), then ~~T~~the SSME-FSM returns to the state "Idle Management". Otherwise, the SSME-FSM remains in the state "Non-call Associated Treatment".

If the Dialogue ID is not active, then the TC in the gsmSSF~~/assistSSF~~ will issue a P-Abort~~,~~. ~~t~~The SSME will in that case ~~never~~not receive the "ActivityTest" ~~req.~~indication and thus will not be able to reply.

gsmSRF/assistSSF postconditions:

(1) The SSME-FSM moves to the state "Non-call Associated Treatment".

(~~1~~2) If the ~~d~~Dialogue ID is active and ~~if~~ there is a gsmSRF/assistSSF using the dialogue, then the SSME sends a ~~r~~Return ~~r~~Result "ActivityTest" to the gsmSCF. The SSME-FSM then returns to the state "Idle Management".

If the ~~d~~Dialogue ID is not active, then the TC in the gsmSRF/assistSSF will issue a P-Abort~~,~~. ~~t~~The SSME will in that case ~~never~~not receive the ActivityTest ~~operation~~ indication and thus will not be able to reply.

11.1.2.2 Error handling

Operation related error handling is not applicable, due to class 3 operation.

*** Next Modification ***

11.2 ActivityTestGPRS procedure

11.2.1 General description

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 identified instance of gprsSSF will respond. If no reply is received within a given time period, then the gsmSCF which sent this operation will assume that the receiving entity has failed in some way and will take the appropriate action. This operation opens a new ~~SS7~~TC dialogue between gsmSCF and gprsSSF.

11.2.1.1 Parameters

None

11.2.2 Responding entity (gprsSSF)

11.2.2.1 Normal procedure

gprsSSF preconditions:

(1) A relationship exists between the gsmSCF and the gprsSSF.

(2) The SSME-FSM is in the state "Idle Management".

(3) No active TC dialogue exists at the moment of receiving ActivityTestGPRS.

gprsSSF postconditions:

~~(1) The SSME-FSM stays in the state "Idle Management".~~

(1) The SSME-FSM transits to the state "Non-call Associated Treatment".

(2) If ~~the relationship exists and if~~ there is a gprsSSF using the GPRS-Reference Number, then the SSME sends a Return Result "ActivityTestGPRS" to the gsmSCF. The SSME-FSM then returns to the state "Idle Management".

If there is no gprsSSF using the GPRS-ReferenceNumber ~~is not active~~, then the ~~TC User~~SSME ~~in the gprsSSF~~ will ~~instruct to~~ issue a U-Abort. The SSME-FSM then returns to the state "Idle Management".

(3) The temporary TC dialogue is closed.

If at the time of receiving ActivityTestGPRS there is an active TC dialogue for this GPRS Dialogue, then the SSME issues a U-Abort with Abort reason "overlapping-dialogue".

11.2.2.2 Error handling

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

*** End of Document ***

3GPP TSG-CN WG2 Meeting #21
Cancun, Mexico, 26th - 30th November 2001

Tdoc N2-011007

CHANGE REQUEST

⌘ **29.078** **CR** **226** ⌘ rev ⌘ Current version: 4.2.0 ⌘

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

Title:	⌘	ApplyCharging shall be allowed in a control relationship only
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	28 November 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)*

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 procedure description of ApplyCharging does not specify a precondition related to the relationship between the gsmSCF and the gsmSSF. This is not correct. The sending of ApplyCharging shall be permissible in a control relationship only. This is a fundamental principle of CAMEL, which was already applied in CAMEL Phase 2. This principle has also been applied to the ApplyChargingGPRS procedure in CAMEL Phase 3. This precondition exists in CAMEL Phase 2 and shall be applicable to CAMEL Phase 3 as well.
Summary of change:	⌘	Specify in section 11.3 that a control relationship shall exist between the gsmSCF and the gsmSSF when sending ApplyCharging.
Consequences if not approved:	⌘	- Incorrect service logic behaviour – services may send ApplyCharging outside a control relationship, resulting in service logic failure; - Inconsistent service logic behaviour between CAMEL Phase 2 and CAMEL Phase 3; - Service Logic implementation problems.
Clauses affected:	⌘	11.3
Other specs affected:	⌘	☐ Other core specifications ⌘ ☐ Test specifications ☐ O&M Specifications
Other comments:	⌘	

*** For Information – extract from GSM TS 09.78 V6.5.0 ***

9.3.3 Responding entity (gsmSSF)

9.3.3.1 Normal procedure

gsmSSF preconditions:

(1) A control relationship exists between the gsmSSF and the gsmSCF.

(2) The gsmSSF is in one of the following states:

"Waiting for Instructions"; or

"Waiting for End of User Interaction"; or

"Waiting for End of Temporary Connection"; or

"Monitoring"

SSF postcondition:

(1) No gsmSSF state transition

On receipt of this operation, the gsmSSF sets the charging data using the information elements included in the operation.

The gsmSSF will start monitoring for the Answer event upon receipt of the ApplyCharging operation if Answer has not already been received on an outgoing connection to a Called Party, a Temporary Connection or a connection to a gsmSRF. Upon subsequent detection of the Answer event on the outgoing connection charging is started. If the Answer event has been received from an outgoing connection already when the ApplyCharging operation is received then charging starts immediately.

Upon release of an outgoing connection to the Called Party, the Temporary Connection or the gsmSRF connection any indication of Answer event receipt on the outgoing connection is cleared i.e. set to Answer event not received.

9.3.3.2 Error handling

TaskRefused: In addition to the generic error handling noted below, this error shall be indicated when:

- a previously received call period duration is pending,
- a tariffSwitchInterval is indicated when a previously received tariffSwitchInterval is pending.

Generic error handling for the operation related errors is described in Clause 8 and the TCAP services used for reporting operation errors are described in Clause 10.

*** First Modification ***

11.3 ApplyCharging procedure

11.3.1 General description

This operation is used for interacting from the gsmSCF with the gsmSSF function: CSE control of call duration. The ApplyChargingReport operation provides the feedback from the gsmSSF to the gsmSCF.

The charging scenarios supported by this operation are those given in 3GPP TS 22.078 for CSE control of call duration.

11.3.1.1 Parameters

- aChBillingChargingCharacteristics:
  This parameter specifies a list of parameters required for CSE control of call duration:

  The list may contain:

  - timeDurationCharging:

    This list contains the following parameters:

    - maxCallPeriodDuration:
      This parameter specifies the period of time for which a call can progress before an ApplyChargingReport shall be sent to the gsmSCF.

    - releaseIfdurationExceeded:
      This parameter specifies the action to be taken at the gsmSSF when the duration specified above has been reached. If the parameter is present, then the call is released.

    - tone:
      If the parameter is present, then a warning tone is played when the warning tone timer expires.

    - tariffSwitchInterval:
      This parameter indicates to the gsmSSF the time duration until the next tariff switch. The measurement of the elapsed tariff switch period commences immediately upon successful execution of this operation.

- partyToCharge:
  This parameter indicates the party in the call.

11.3.2 Responding entity (gsmSSF)

11.3.2.1 Normal procedure

gsmSSF precondition:

(1) A control relationship exists between the gsmSCF and the gsmSSF.

(~~1~~2) The gsmSSF is in one of the following states:

"Waiting for Instructions"
"Waiting for End of User Interaction",
"Waiting for End of Temporary Connection",
"Monitoring"

gsmSSF postcondition:

(1) No FSM state transition

On receipt of this operation, the gsmSSF sets the charging data using the information elements included in the operation and acts accordingly.

The gsmSSF will start monitoring for the Answer event upon receipt of the ApplyCharging operation if Answer has not already been received on an outgoing connection to a Called Party, a Temporary Connection or a connection to a gsmSRF. Upon subsequent detection of the Answer event on the outgoing connection charging is started. If the Answer event has been received from an outgoing connection already when the ApplyCharging operation is received then charging starts immediately.

Upon release of an outgoing connection to the Called Party, the Temporary Connection or the gsmSRF connection any indication of Answer event receipt on the outgoing connection is cleared i.e. set to Answer event not received.

11.3.2.2 Error handling

TaskRefused: In addition to the generic error handling noted below, this error shall be indicated when:

- a previously received call period duration is pending,
- a tariffSwitchInterval is indicated when a previously received tariffSwitchInterval is pending.

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

*** End of Document ***

3GPP TSG CN WG2 Meeting #21 ***N2-011025***
Cancun, Mexico, 26th - 30th November 2001

CHANGE REQUEST

⌘ **29.078** **CR** **228** ⌘ **rev** ⌘ Current version: **4.2.0** ⌘

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

Title:	⌘	Correction to preconditions for ActivityTestGPRS
Source:	⌘	Ericsson
Work item code:	⌘	CAMEL3
Date:	⌘	29 November 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)*

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

Reason for change: ⌘ The description of ActivityTest and ActivityTestGPRS is incorrect and incomplete. It is crucial that these descriptions are corrected, for the following reasons:

- ActivityTest in CAP V3 is distinctively different from ActivityTest in CAP V2. This is caused by the introduction of the CallGap operation. CallGap causes an SSME-FSM transition to the state "Non-call Associated Treatment". Hence, ActivityTest may be received in SSME-FSM state "Idle Management" and in SSME-FSM state "Non-call Associated Treatment".
- The handling of ActivityTestGPRS is distinctively different from the handling of ActivityTest. The main reason is that ActivityTestGPRS is sent in a new TC dialogue, whilst ActivityTest is sent in an existing TC dialogue.

The following error corrections are needed for ActivityTest (AT):

- When AT is received in the gsmSSF, then a precondition shall be that the SSME-FSM is in the state "Idle Management" or "Non-call Associated Treatment". The latter state would be the result of a previous CallGap operation.
- When AT is received in the assistSSF or gsmSRF, then a precondition shall be that the SSME-FSM is in the state "Idle Management". CallGap may not be sent to the assistSSF or gsmSRF, so the assistSSF or gsmSRF can not be in the "Non-call Associated Treatment" state when receiving AT.
- The pre- and postconditions shall be clearly split up for (1) gsmSSF and (2) gsmSRF or assistSSF. Reason is that gsmSSF has two possible SSME states in which AT may be received: "Idle Management" and "Non-call Associated Treatment". The gsmSRF or assistSSF SSME has a single state only: "Idle Management". This difference is due to the fact that the gsmSSF may receive the CallGap operation, which results in an SSME state transition to and "Non-call Associated Treatment", if not already in that state.
- For both the gsmSSF and the gsmSRF or assistSSF, a postcondition shall be

that the SSME-FSM is in state "Non-call Associated Treatment".

- When the SSME-FSM in the gsmSSF has processed AT, it shall return to the state "Idle Management" only if there are no other management activities active at that moment. More precisely, if at the moment of receiving AT, Call Gapping is active in the gsmSSF, then the SSME-FSM shall remain in the state "Non-call Associated Treatment" after the SSME-FSM has processed AT. Otherwise, Call Gapping may be unintentionally de-activated.
- The postcondition "…the SSME will in that case **never** receive the "ActivityTest" request indication…" shall be replaced by "… the SSME will in that case **not** receive the "ActivityTest" request indication…". The term "never" gives the impression that this postcondition also applies to subsequent AT request indications for this SSME.
- The postcondition "… the SSME will in that case not receive the ActivityTest **operation**…" shall be replaced by "… the SSME will in that case not receive the ActivityTest **indication**…".
- The wording "…"ActivityTest" **req.ind**…" shall be replaced by "…"ActivityTest" **indication** …". "Req.ind" is not a common abbreviation and may be misinterpreted. Moreover, the TC primitive can be a "request" or an "indication", but not both. On the receiving side, it shall be "indication".
- When the SSME-FSM in the assistSSF or gsmSRF has processed AT, it shall always return to the state "Idle Management". Call Gapping is not applicable to the assistSSF or gsmSRF, so the assistSSF or gsmSRF has no requirement to stay in state "Non-call Associated Treatment".

The following error corrections are needed for ActivityTestGPRS (AT-GPRS):

- The general statement "This operation opens a new **SS7 dialogue** between gsmSCF and gprsSSF" shall be replaced by "This operation opens a new **TC dialogue** between gsmSCF and gprsSSF".
- It shall be specified what the behaviour of the gprsSSF shall be in the case that there is an active TC dialogue at the moment of receiving ActivityTestGPRS.
- A precondition shall be that the SSME-FSM in the gprsSSF is in state "Idle Management". The "Non-call Associated Treatment" state is not applicable to the SSME-FSM in the gprsSSF, other than during the processing of AT-GPRS.
- A postcondition shall be that the SSME-FSM is in state "Non-call Associated Treatment".
- When the SSME-FSM has processed AT-GPRS, it shall return to the state "Idle Management". This postcondition shall be specified for both successful AT-GPRS (GPRS Reference Number in use) and unsuccessful AT-GPRS (GPRS Reference Number not in use). Reason is that in both cases, the AT-GPRS indication is sent to the SSME-FSM. The SSME-FSM will ascertain if a AT-GPRS Return Result shall be sent to the gsmSCF.
- The criterion of returning AT-GPRS Return Result is described incorrectly. The criterion for returning AT-GPRS Return Result shall be:

  "**The SSME-FSM shall send AT-GPRS Return Result if there is a gprsSSF using the GPRS-Reference Number. Otherwise, The SSME-FSM shall issue a U-Abort.**"
- The issuing of the U-Abort in the unsuccessful AT-GPRS case, shall be done by the SSME-FSM, not by the TC-User.
- The phrasing "… the SSME **will instruct to issue** a U-Abort…" shall be replaced by "… the TC User in the gprsSSF **will issue** a U-Abort…". The wording "…will instruct to issue…" implies that the U-Abort shall be issued by another entity than the SSME. That is not correct; it is the SSME that issues

		this U-Abort. - A postcondition shall be that the SSME-FSM returns to state "Idle Management". The present CR proposes corrections, in line with the above descriptions.
Summary of change:	⌘	Correct the description of the ActivityTest and ActivityTestGPRS procedures.
Consequences if not approved:	⌘	- Ambiguity in the implementation of the ActivityTest and ActivityTestGPRS procedures; - Incorrect and inconsistent behaviour of the gsmSSF or gprsSSF on the reception of ActivityTest or ActivityTestGPRS respectively; - Unspecified behaviour in the case of overlapping TC dialogues at the time of ActivitytestGPRS. - Active Call Gapping in the gsmSSF may be de-activated due to ActivityTest.

Clauses affected:	⌘	11.1, 11.2		
Other specs Affected:	⌘	☐ Other core specifications ☐ Test specifications ☐ O&M Specifications	⌘	
Other comments:	⌘			

*** First Modification ***

11.1 ActivityTest procedure

11.1.1 General description

This operation is used to check for the continued existence of a relationship between the gsmSCF and gsmSSF, gsmSCF and gsmSRF or gsmSCF and assistSSF. If the relationship is still in existence, then the receiving entity will respond. If no reply is received within a given time period, then the gsmSCF which sent this operation will assume that the receiving entity has failed in some way and will take the appropriate action.

11.1.1.1 Parameters

None.

11.1.2 Responding entity (gsmSSF, gsmSRF or assistSSF)

11.1.2.1 Normal procedure

gsmSSF~~/gsmSRF/assistSSF~~ preconditions:

(1) A relationship exists between the gsmSCF and the gsmSSF~~/gsmSRF/assistSSF~~.

(2) The SSME~~-~~FSM is ~~is~~in the state "Idle Management" or "Non-call Associated Treatment".

gsmSRF/assistSSF preconditions:

(1) A relationship exists between the gsmSCF and the gsmSRF/assistSSF.

(2) The SSME-FSM is in the state "Idle Management".

gsmSSF~~/assistSSF~~ postconditions:

(1) The SSME-FSM stays in, or moves to the state "Non-call Associated Treatment".

(2) If the Dialogue ID is active and ~~if~~ there is a gsmSSF~~/assistSSF~~ using the dialogue, then the SSME sends a Return Result "ActivityTest" to the gsmSCF. If there are no other management activities (e.g. Call Gapping), then ~~T~~the SSME-FSM returns to the state "Idle Management". Otherwise, the SSME-FSM remains in the state "Non-call Associated Treatment".

If the Dialogue ID is not active, then the TC in the gsmSSF~~/assistSSF~~ will issue a P-Abort~~,~~. ~~t~~The SSME will in that case ~~never~~not receive the "ActivityTest" ~~req.~~indication and thus will not be able to reply.

gsmSRF/assistSSF postconditions:

(1) The SSME-FSM moves to the state "Non-call Associated Treatment".

(~~1~~2) If the ~~d~~Dialogue ID is active and ~~if~~ there is a gsmSRF/assistSSF using the dialogue, then the SSME sends a ~~r~~Return ~~r~~Result "ActivityTest" to the gsmSCF. The SSME-FSM then returns to the state "Idle Management".

If the ~~d~~Dialogue ID is not active, then the TC in the gsmSRF/assistSSF will issue a P-Abort~~,~~. ~~t~~The SSME will in that case ~~never~~not receive the ActivityTest ~~operation~~ indication and thus will not be able to reply.

11.1.2.2 Error handling

Operation related error handling is not applicable, due to class 3 operation.

*** Next Modification ***

11.2 ActivityTestGPRS procedure

11.2.1 General description

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 identified instance of gprsSSF will respond. If no reply is received within a given time period, then the gsmSCF which sent this operation will assume that the receiving entity has failed in some way and will take the appropriate action. This operation opens a new ~~SS7~~TC dialogue between gsmSCF and gprsSSF.

11.2.1.1 Parameters

None

11.2.2 Responding entity (gprsSSF)

11.2.2.1 Normal procedure

gprsSSF preconditions:

(1) A relationship exists between the gsmSCF and the gprsSSF.

(2) The SSME-FSM is in the state "Idle Management".

(3) No active TC dialogue exists at the moment of receiving ActivityTestGPRS.

gprsSSF postconditions:

~~(1) The SSME-FSM stays in the state "Idle Management".~~

(1) The SSME-FSM transits to the state "Non-call Associated Treatment".

(2) If ~~the relationship exists and if~~ there is a gprsSSF using the GPRS-Reference Number, then the SSME sends a Return Result "ActivityTestGPRS" to the gsmSCF. The SSME-FSM then returns to the state "Idle Management".

If there is no gprsSSF using the GPRS-ReferenceNumber ~~is not active~~, then the ~~TC User~~SSME ~~in the gprsSSF~~ will ~~instruct to~~ issue a U-Abort. The SSME-FSM then returns to the state "Idle Management".

(3) The temporary TC dialogue is closed.

If at the time of receiving ActivityTestGPRS there is an active TC dialogue for this GPRS Dialogue, then the SSME issues a U-Abort with Abort reason "overlapping-dialogue".

11.2.2.2 Error handling

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

*** End of Document ***