3GPP TSG CN Plenary Meeting #17 **NP-020341**
4th - 6th September 2002. Biarritz, France.

Source: TSG CN WG2

Title: CRs on Work Item CAMEL3 for Release 4, CR Pack 2

Agenda item: 7.1

Document for: APPROVAL

Introduction:

This document contains a CR on WI CAMEL3 for Release 4 and corresponding Release 5 mirror CR. These CRs have been agreed by TSG CN WG2 and are forwarded to TSG CN Plenary meeting #17 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
23.078	411	1	N2-020754	Rel-4	CAMEL3 inter-working with Rel-4 GPRS barring	F	4.5.1
23.078	450		N2-020755	Rel-5	CAMEL3 inter-working with Rel-4 GPRS barring	A	5.0.0

3GPP TSG CN WG2 Meeting #25 ***N2-020754***
Helsinki, Finland, 29th July – 2nd August 2002

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CHANGE REQUEST

⌘ **23.078** **CR** **411** ⌘ **rev** **1** ⌘ Current version: 4.5.1 ⌘

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

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

Title:	⌘	CAMEL3 inter-working with Rel-4 GPRS barring		
Source:	⌘	Nokia		
Work item code:	⌘	CAMEL3	***Date:*** ⌘	30/07/2002
Category:	⌘	**F (essential correction)**	***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)*
Rel-6	*(Release 6)*

Reason for change:	⌘	CAMEL3 is introduced in 3GPP R99. GPRS barring is specified in Rel-4. Therefore, R99 CAMEL3 does not specify the inter-working with GPRS barrings. This needs to be specified so that there is less change for interoperability problems. ODB is defined in 23.015. The following barrings are specified: - Barring of all Packet Oriented Services; - Barring of Packet Oriented Services from access points that are within the HPLMN whilst the subscriber is roaming in a VPLMN; - Barring of Packet Oriented Services from access points that are within the roamed to VPLMN.
Summary of change:	⌘	The Rel-4 and Rel-5 23.078 shall specify in which point in PDP context state model the barring check shall be done. It is specified here that barring is checked after the CAMEL invocation. Conditional barrings need a checking after 1st DP. It is easier to check the unconditional barring at the same point, although it may result to unnecessary IDP-GPRS operation. If the unconditional barring is checked at the NULL PIA then the checking would apply also for the inter-SGSN RAU. That is no needed because the source-SGSN does all checkings necessary. In future it would be easier to overwrite the barrings by SCP, but this will need a change in CAP.
Consequences if not approved:	⌘	Vague specification – CAMEL interworking with GPRS barring is unspecified.

Clauses affected:	⌘	6.4.3.1.2

Y **N**

Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This is the first difference between R99 and Rel-4 CAMEL3.			

6.4.3 GPRS PDP Context State Model

The GPRS PDP Context State Model is used to model the behaviour for the GPRS PDP Context procedures. There is one PDP Context State Model per GPRS PDP context.

When encountering a DP the PDP Context State Model processing is suspended at the DP and the SGSN indicates this to the gprsSSF which determines what action, if any, shall be taken in case the DP is armed.

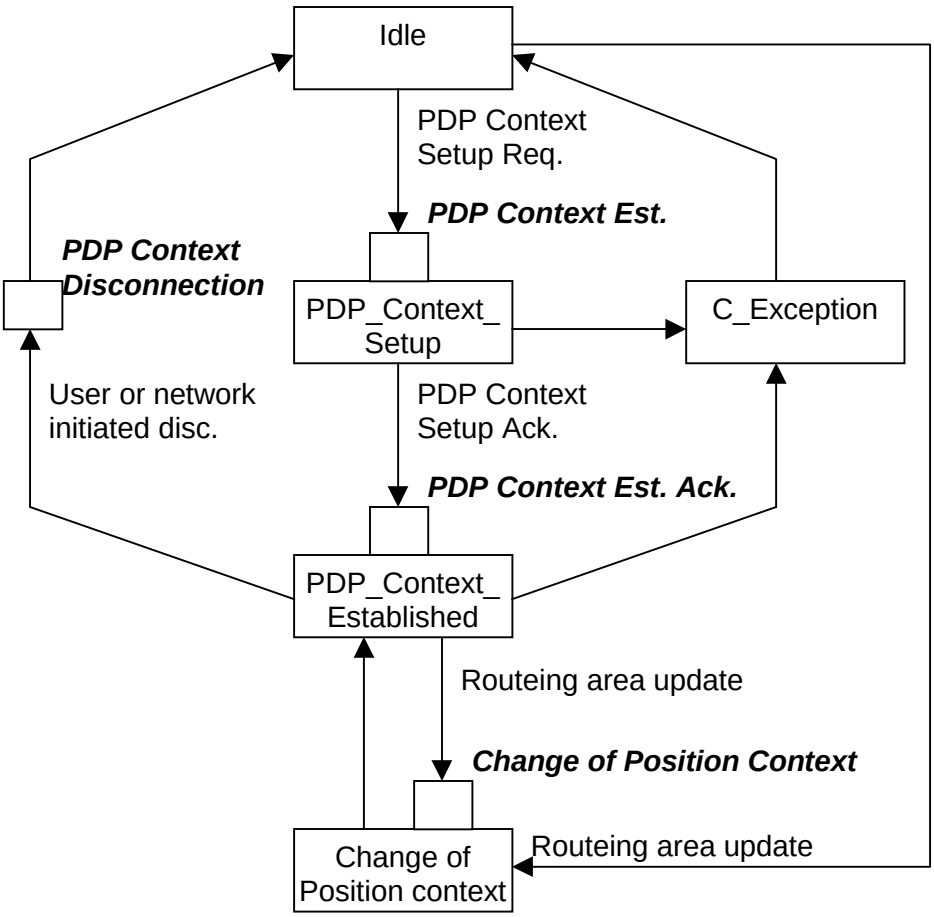

Figure Error! Reference source not found..**1: GPRS PDP Context State Model**

Table Error! Reference source not found.**.1: Description of GPRS PDP Context DPs in the SGSN**

CAMEL Detection Point	DP Type	Description
DP PDP Context Establishment	TDP-R[1)], EDP-R, EDP-N	Activate PDP Context request is received from the MS.
DP PDP Context Establishment Acknowledgement	TDP-R[2)], EDP-R, EDP-N	Create PDP Context response is received from the GGSN.
DP PDP Context Disconnection	EDP-N, EDP-R	Deactivate PDP Context Request is received from the MS, Delete PDP Context request is received from the GGSN. Inter SGSN Routeing update occurred in old SGSN.
DP Change of Position Context	TDP-R[3)], EDP-N, EDP-R	Routeing Area Update is accepted.
NOTE 1: The PDP Context Establishment shall be reported as TDP-R (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with the gsmSCF. If there is a relationship with the gsmSCF it shall be reported as EDP-R or EDP-N if armed so.		
NOTE 2: The PDP Context Establishment Acknowledgement shall be reported as TDP-R (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with gsmSCF. If there is a relationship with the gsmSCF, it shall be reported as EDP-R or EDP-N if armed so.		
NOTE 3: Change of Position Context is reported as TDP-R in the case of Inter-SGSN Routeing Area Update (provided that this DP is statically armed in GPRS-CSI) if there is no relationship with the gsmSCF. Change of Position Context is reported as EDP-N or EDP-R in the case of Inter-SGSN Routeing Area Update (provided that this DP is armed as generic EDP) if there is a relationship with the gsmSCF. Change of Position Context is reported as EDP-N in the case of Intra-SGSN Routeing Area Update (provided that this DP is dynamically armed by the Service Logic).		

6.4.3.1 Description of the PDP Context model (PIAs)

This subclause describes the model for PDP Context State Model in the SGSN. For each PIA a description can be found of the entry events, actions and exit events.

6.4.3.1.1 Idle

Entry events:

- Deactivation (user or network initiated) and clearing of a previous PDP Context.
- Processing of exceptional conditions.

Actions:

- Interface is idled.
- Activate PDP Context request is received from MS (containing NSAPI, PDP Type, PDP Address, Access Point Name, QoS Requested, PDP Configuration Options), or Inter-SGSN Routeing Area Update is accepted (DP Change of Position Context).
- Information being analyzed, e.g. GPRS-CSI is analyzed.

Exit events:

- GPRS-CSI is analyzed (DP PDP Context Establishment or DP Change of Position Context, new SGSN).

6.4.3.1.2 PDP Context Setup

Entry events:

- GPRS-CSI is analyzed (DP PDP Context Establishment).

Actions:

- APN and GGSN selection procedure is performed for a primary PDP context as specified in Annex A of 3GPP TS 23.060 [**Error! Reference source not found.**]. APN and GGSN selection procedure is not performed for a secondary PDP context.

- Access Point Name is verified against the subscription. If the gsmSCF has provided an Access Point Name then the Access Point Name provided by the gsmSCF is checked against the subscription. For details refer to 3GPP TS 23.060 [**Error! Reference source not found.**] Annex A.

- The operator determined barring category "Barring of all Packet Oriented Services " is checked and invoked if necessary.

- The operator determined barring category "Barring of Packet Oriented Services from access points that are within the HPLMN whilst the subscriber is roaming in a VPLMN" is checked and invoked if necessary.

- The operator determined barring category "Barring of Packet Oriented Services from access points that are within the roamed to VPLMN" is checked and invoked if necessary.

- The SGSN ensures that an already active PDP context is not reactivated.

- GGSN address is derived from the Access Point Name by interrogation of a DNS. The Access Point Name consists of a Network Identifier and an Operator Identifier.

- Create PDP Context Request is sent to the GGSN.

Exit events:

- Create PDP Context Response is received from the GGSN (DP PDP Context Establishment Acknowledgement).

- An exception is encountered.

6.4.3.1.3 PDP Context Established

Entry events:

- GPRS-CSI is analyzed (DP PDP Context Establishment Acknowledgement or DP Change of Position Context).

Actions:

- PDP context is established at the MS and the SGSN.

Exit events:

- Deactivation of the PDP Context is received from the MS or the GGSN, or is due to an inter SGSN routing area update (DP PDP Context Disconnection, old SGSN).

- Intra-SGSN Routeing Area Update Request is received from the MS (DP Change of Position Context).

- Inter-SGSN Routeing Area Update (DP Change of Position Context, new SGSN).

- An exception is encountered.

6.4.3.1.4 Change of Position Context

Entry events:

- Inter SGSN Routing Area update accepted (new SGSN).

- Intra SGSN Routeing Area update request received from the MS.

Actions:

- PDP Context (containing NSAPI, PDP Type, PDP Address, Access Point Name, QoS Requested, PDP Configuration Options) is reestablished in case of Inter-SGSN Routeing Area update accepted (new SGSN).

- Intra SGSN Routeing Area updated.

Exit events:

- reestablishement of the PDP context at the new SGSN and return to PDP context established in case of inter SGSN Routeing Area update accepted in new SGSN (PIA PDP context established).

- Routeing Area update completed in case of intra SGSN Routeing Area update (PIA PDP context established).

3GPP TSG CN WG2 Meeting #25 ***N2-020755***
Helsinki, Finland, 29th July – 2nd August 2002

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CHANGE REQUEST

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

Title:	⌘	CAMEL3 inter-working with Rel-4 GPRS barring
Source:	⌘	Nokia
Work item code:	⌘	CAMEL3
Date:	⌘	30/07/2002
Category:	⌘	**A**
Release:	⌘	Rel-5

Use one of the following categories:
F *(correction)*
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Clauses affected:	⌘	6.4.3.1.2

Y **N**

Other specs affected:	⌘		**X**	Other core specifications	⌘
			X	Test specifications	
			X	O&M Specifications	
Other comments:	⌘	This is the first difference between R99 and Rel-4 CAMEL3. The change in this one is identical to Rel-4 version of the CR. The Rel-4 CR does, however, contain more copied text around the changed text. Therefore the file sizes are different.			

6.4.3.1.2 PDP Context Setup

Entry events:

- GPRS-CSI is analyzed (DP PDP Context Establishment).

Actions:

- APN and GGSN selection procedure is performed for a primary PDP context as specified in Annex A of 3GPP TS 23.060 [**Error! Reference source not found.**]. APN and GGSN selection procedure is not performed for a secondary PDP context.
- Access Point Name is verified against the subscription. If the gsmSCF has provided an Access Point Name then the Access Point Name provided by the gsmSCF is checked against the subscription. For details refer to 3GPP TS 23.060 [**Error! Reference source not found.**] Annex A.
- The operator determined barring category "Barring of all Packet Oriented Services " is checked and invoked if necessary.
- The operator determined barring category "Barring of Packet Oriented Services from access points that are within the HPLMN whilst the subscriber is roaming in a VPLMN" is checked and invoked if necessary.
- The operator determined barring category "Barring of Packet Oriented Services from access points that are within the roamed to VPLMN" is checked and invoked if necessary.
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- Create PDP Context Request is sent to the GGSN.

Exit events:

- Create PDP Context Response is received from the GGSN (DP PDP Context Establishment Acknowledgement).
- An exception is encountered.