

**3GPP TSG CN Plenary Meeting #15
6th – 8th March 2002. Cheju, Korea.**

NP-020024

Source: TSG CN WG4
Title: CRs on R99 GTP Enhancement
Agenda item: 7.13
Document for: APPROVAL

Introduction:

This document contains 3 CRs on R99 Work Item "GTP Enhancement", that have been agreed by TSG CN WG4, and are forwarded to TSG CN Plenary meeting #15 for approval.

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.060	308		N4-020238	R99	Clarification on PDP address field and end user address information element in create PDP context response	F	3.11.0
29.060	298	1	N4-020236	Rel-4	Clarification on PDP address field and end user address information element in create PDP context response	A	4.3.0
29.060	299	1	N4-020237	Rel-5	Clarification on PDP address field and end user address information element in create PDP context response	A	5.0.1

CHANGE REQUEST

⌘ **29.060 CR 298** ⌘ rev **1** ⌘ Current version: **4.3.0** ⌘

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

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

Title:	⌘ Clarification on PDP address field and end user address information element in create PDP context response				
Source:	⌘ CN4				
Work item code:	⌘ GPRS	Date:	⌘ 30-01-2002		
Category:	⌘ A	Release:	⌘ REL-4		
	Use <u>one</u> of the following categories:		Use <u>one</u> of the following releases:		
	F (correction)		2 (GSM Phase 2)		
	A (corresponds to a correction in an earlier release)		R96 (Release 1996)		
	B (addition of feature),		R97 (Release 1997)		
	C (functional modification of feature)		R98 (Release 1998)		
	D (editorial modification)		R99 (Release 1999)		
	Detailed explanations of the above categories can be found in 3GPP TR 21.900 .		REL-4 (Release 4)		
			REL-5 (Release 5)		

Reason for change:	⌘ The IE "End User Address" is "Conditional", depending on the cause value 'Request accepted' the IE "End User Address" shall be included (see preceding paragraph, "All information elements, except Recovery, Protocol Configuration Options, Charging Gateway Address, Tunnel Endpoint Identifier Control Plane and Private Extension, are mandatory if the Cause contains the value 'Request accepted'").				
	"Create PDP Context Response " symmetrical to message "Create PDP Context Request ", IE "End User Address" is always included and the PDP Address field only if needed.				
Summary of change:	⌘ In create PDP context response message the PDP address field shall not be included if PDP type is PPP or if PDP type is IPv4 with static IP address, but the End User Address information element shall be included in all cases.				
Consequences if not approved:	⌘ Different interpretations are possible that could lead to interoperability problems				

Clauses affected:	⌘ 7.3.2				
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications	⌘			
	<input type="checkbox"/> Test specifications				
	<input type="checkbox"/> O&M Specifications				
Other comments:	⌘				

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7.3.2 Create PDP Context Response

The message shall be sent from a GGSN node to a SGSN node as a response of a Create PDP Context Request. When the SGSN receives a Create PDP Context Response with the Cause value indicating 'Request Accepted', the SGSN activates the PDP context and may start to forward T-PDUs to/from the MS from/to the external data network.

The Cause value indicates if a PDP context has been created in the GGSN or not. A PDP context has not been created in the GGSN if the Cause differs from 'Request accepted'. Possible Cause values are:

- "Request Accepted".
- "No resources available".
- "All dynamic PDP addresses are occupied".
- "No memory is available".
- "Missing or unknown APN".
- "Unknown PDP address or PDP type".
- "User authentication failed".
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- "Semantic error in the TFT operation".
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- "Mandatory IE incorrect".
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- "Invalid message format".

'No resources available' indicates e.g. that all dynamic PDP addresses are occupied or no memory is available. 'Missing or unknown APN' indicates e.g. when the GGSN does not support the Access Point Name. 'Unknown PDP address or PDP type' indicates e.g. when the GGSN does not support the PDP type or the PDP address. 'User authentication failed' indicates that the external packet network has rejected the service requested by the user.

Only the Cause information element, optionally Protocol Configuration Options and optionally the Recovery information element shall be included in the response if the Cause contains another value than 'Request accepted'.

All information elements, except Recovery, Protocol Configuration Options, Charging Gateway Address, Tunnel Endpoint Identifier Control Plane and Private Extension, are mandatory if the Cause contains the value 'Request accepted'.

The Tunnel Endpoint Identifier for Data (I) field specifies an uplink Tunnel Endpoint Identifier for G-PDUs that is chosen by the GGSN. The SGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent uplink G-PDUs which are related to the requested PDP context.

The Tunnel Endpoint Identifier Control Plane field specifies an uplink Tunnel Endpoint Identifier for control plane messages, which is chosen by the GGSN. The SGSN shall include this Tunnel Endpoint Identifier in the GTP header of all subsequent uplink-control plane messages, which are related to the requested PDP context. If the GGSN has already confirmed successful assignment of its Tunnel Endpoint Identifier Control Plane to the peer SGSN, this field shall not be present. The GGSN confirms successful assignment of its Tunnel Endpoint Identifier Control Plane to the SGSN when it receives any message with its assigned Tunnel Endpoint Identifier Control Plane in the GTP header from the SGSN.

The GGSN shall include a GGSN Address for control plane and a GGSN address for user traffic, which may differ from that provided by the underlying network service (e.g. IP). The SGSN shall store these GGSN Addresses and use them when sending control plane on this GTP tunnel or G-PDUs to the GGSN for the MS.

If the MS requests a dynamic PDP address with the PDP Type IPv4 or IPv6 and a dynamic PDP address is allowed, then the End User Address information element shall be included and the PDP Address field in the End User Address information element shall contain the dynamic PDP Address allocated by the GGSN.

If the MS requests a static PDP address with the PDP Type IPv4 or IPv6, or a PDP address is specified with PDP Type PPP, then [the End User Address information element shall be included and the PDP Address field in the End User Address information element shall not be included.](#) ~~The End User Address information element shall be included.~~

The PDP address in End User Address IE and in the Protocol configuration options IE shall be the same, if both IEs are present in the create PDP context response.

The QoS values supplied in the Create PDP Context Request may be negotiated downwards by the GGSN. The negotiated values or the original values from SGSN are inserted in the Quality of Service Profile information element of the Create PDP Context Response message.

The GGSN may start to forward T-PDUs after the Create PDP Context Response has been sent. The SGSN may start to forward T-PDUs when the Create PDP Context Response has been received. In this case the SGSN shall also be prepared to receive T-PDUs from the GGSN after it has sent a Create PDP Context Request but before a Create PDP Context Response has been received.

The Reordering Required value supplied in the Create PDP Context Response indicates whether the end user protocol benefits from packet in sequence delivery and whether the SGSN and the GGSN therefore shall perform reordering or not. In other words, if reordering is required by the GGSN, the SGSN and the GGSN shall perform reordering of incoming T-PDUs on this path. When the Quality of Service (QoS) Profile is Release 99 the receiving entity shall ignore the Reordering Required.

The GGSN shall include the Recovery information element into the Create PDP Context Response if the GGSN is in contact with the SGSN for the first time or the GGSN has restarted recently and the new Restart Counter value has not yet been indicated to the SGSN. The SGSN receiving the Recovery information element shall handle it as when an Echo Response message is received but shall consider the PDP context being created as active if the response indicates successful context activation at the GGSN.

The Charging ID is used to identify all charging records produced in SGSN(s) and the GGSN for this PDP context. The Charging ID is generated by the GGSN and shall be unique within the GGSN.

The Charging Gateway Address is the IP address of the recommended Charging Gateway Functionality to which the SGSN should transfer the Charging Detail Records (CDR) for this PDP Context.

The optional Private Extension contains vendor or operator specific information.

Table 6: Information Elements in a Create PDP Context Response

Information element	Presence requirement	Reference
Cause	Mandatory	7.7.1
Reordering required	Conditional	7.7.6
Recovery	Optional	7.7.11
Tunnel Endpoint Identifier Data I	Conditional	7.7.13
Tunnel Endpoint Identifier Control Plane	Conditional	7.7.14
Charging ID	Conditional	7.7.26
End User Address	Conditional	7.7.27
Protocol Configuration Options	Optional	7.7.31
GGSN Address for Control Plane	Conditional	GSN Address 7.7.32
GGSN Address for user traffic	Conditional	GSN Address 7.7.32
Quality of Service Profile	Conditional	7.7.34
Charging Gateway Address	Optional	7.7.43
Private Extension	Optional	7.7.44

CHANGE REQUEST

⌘ **29.060 CR 308** ⌘ rev - ⌘ Current version: **3.11.0** ⌘

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

Title:	⌘ Clarification on PDP address field and end user address information element in create PDP context response
Source:	⌘ CN4
Work item code:	⌘ GPRS
Date:	⌘ 30-01-2002
Category:	⌘ F (Essential Correction)
	Use <u>one</u> 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 .
Release:	⌘ R99
	Use <u>one</u> 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 IE "End User Address" is "Conditional", depending on the cause value 'Request accepted' the IE "End User Address" shall be included (see preceding paragraph, "All information elements, except Recovery, Protocol Configuration Options, Charging Gateway Address, Tunnel Endpoint Identifier Control Plane and Private Extension, are mandatory if the Cause contains the value 'Request accepted'").
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Consequences if not approved:	⌘ Different interpretations are possible that could lead to interoperability problems

Clauses affected:	⌘ 7.3.2
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Other comments:	⌘

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Quality of Service Profile	Conditional	7.7.34
Charging Gateway Address	Optional	7.7.43
Private Extension	Optional	7.7.44

CHANGE REQUEST

⌘ **29.060 CR 299** ⌘ rev **1** ⌘ Current version: **5.0.1** ⌘

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Private Extension	Optional	7.7.44