3GPP TSG CN Plenary Meeting #22 10th – 12th December 2003 Maui, USA.

Source: TSG CN WG4

Title: Corrections on GPRS Rel-4 and earlier

Agenda item: 7.3

Document for: APPROVAL

Spec	CR	Rev	Doc-2nd-Level	Phase	Subject	Cat	Ver_C
29.060	435	1	N4-031099	R99	Correction to imprecise reference	F	3.17.0
29.060	475		N4-031100	Rel-4	Correction of incorrect reference to a withdrawn specification	F	4.9.0
29.060	476		N4-031322	Rel-5	Correction of incorrect reference to a withdrawn specification	А	5.7.0
29.060	477		N4-031102	Rel-6	Correction of incorrect reference to a withdrawn specification	А	6.2.0
29.060	458		N4-031120	R99	Correction of Sequence Number Up handling	F	3.17.0
29.060	459		N4-031121	Rel-4	Correction of Sequence Number Up handling	Α	4.9.0
29.060	460		N4-031122	Rel-5	Correction of Sequence Number Up handling	Α	5.7.0
29.060	461		N4-031123	Rel-6	Correction of Sequence Number Up handling	Α	6.2.0
23.007	009	1	N4-031323	R99	Restoration of data in RA update	F	3.5.0
23.007	010	1	N4-031324	Rel-4	Restoration of data in RA update	А	4.1.1
23.007	011	1	N4-031325	Rel-5	Restoration of data in RA update	А	5.0.0

		CHANGE	REQ	UE	ST				CR-Form-v7
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Reason for change: The restoration procedure for MS initiated RA update in section 11.2.4 is in contradiction to the corresponding description in 23.060 (section 13.8.2). Section 11.2.4 requests to execute the RA update even if the network holds no MM context anymore and to establish a new MM context. But in case of Inter SGSN RA Update, if the old SGSN has no MM context, the new SGSN has to reject the RA Update. In case of Intra SGSN RA Update this SGSN behaviour can result in data inconsistencies: At least in R99, the SGSN cannot indicate to the MS that PDP contexts that are active in the MS are no more existing in the CN (PDP Context Status IE) Depending on the type of RA update, e.g. in case of periodic update, the SGSN cannot know whether it has to establish a Gs-interface association or not. The restoration procedure described in 23.060 avoids these problems and covers also the Inter SGSN scenario. This is an essential correction.							olds no Inter has to exts that atus IE). the		
Summary of change		clarified that the curre handling for RA Upo						60.	
Consequences if	光 The	current description d	oes not sa	atisfy	the I	nter SGSN R	RAU s	cenario.	

Clauses affected: # 11.2.4

implementations.

not approved:

between MSC/VLR and SGSN (Gs interface association)

Inconsistency between specifications can lead to different SGSN

Risk of inconsistencies between MS and SGSN (PDP Contexts, for R99) and

Other specs affected:	æ	′ N X X X	Other core specifications Test specifications O&M Specifications	æ	
Other comments:	ж				

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

11.2.4 Mobile originated Routeing Area Updating or Attach

For attach, fwhere the MS is unknown in the SGSN (i.e. the SGSN has no MM context for the MS) the SGSN creates an MM context for the MS and sets the indicators "Location Information Confirmed in HLR" and "Subscriber Data Confirmed by HLR" to "Not Confirmed". If authentication is required, the SGSN retrieves authentication data. The SGSN then performs an "Update GPRS Location" to the HLR. If this is successful, the SGSN sets the indicators "Location Information Confirmed in HLR" and "Subscriber Data Confirmed by HLR" to "Confirmed".

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The SGSN retrieves subscriber data from the HLR by sending an "Update GPRS Location" request, which triggers one or more "Insert Subscriber Data" operations from the HLR.

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Title:	Restora	tion of data in	n RA update					
Source:	€ CN4							
Work item code:	€ GPRS					Date: ₩	15/10/2003	
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The restoration procedure described in 23.060 avoids these problems and covers also the Inter SGSN scenario.

are active in the MS are no more existing in the CN (PDP Context Status IE). Depending on the type of RA update, e.g. in case of periodic update, the SGSN cannot know whether it has to establish a Gs-interface association or

This is an essential correction.

Summary of change: # It is clarified that the current handling applies only to attach.

New handling for RA Update is added, in accordance with 23.060.

Consequences if not approved:

The current description does not satisfy the Inter SGSN RAU scenario. Inconsistency between specifications can lead to different SGSN implementations.

Risk of inconsistencies between MS and SGSN (PDP Contexts, for R99) and

between MSC/VLR and SGSN (Gs interface association)

Clauses affected: # 11.2.4

Other specs affected:	æ	′ N X X X	Other core specifications Test specifications O&M Specifications	æ	
Other comments:	ж				

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Source: # CN	J4									
Work item code:	PRS						Date: ₩	15/	/10/2003	
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Summary of change: %							s only to attac		060.	

Clauses affected: # 11.2.4

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Consequences if not approved:

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Other comments:	ж				

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Clauses affected	l:	.7.34				
Other specs affected:	ж Т	N X Other core X Test speci X O&M Spec		ж		
Other comments	s: ¥					

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
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3)	 With "track changes" disabled, paste the clause containing the first piece the change request. 	e the entire CR fo of changed text.	orm (use CTRL-A to Delete those parts	select it) into the specif of the specification whic	ication just in front of th are not relevant to

7.7.34 Quality of Service (QoS) Profile

The Quality of Service (QoS) Profile shall include the values of the defined QoS parameters. Octet 4 carries the allocation/retention priority octet that is defined in 3GPP TS 23.107. The allocation/retention priority octet encodes each priority level defined in 3GPP TS 23.107 as the binary value of the priority level. Octets 5 - n are coded according to 3GPP TS 24.008 Quality of Service IE, octets 3 - 13. If a pre-Release '99 only capable terminal is served, octets 5 - n are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5. The minimum length of the field QoS Profile Data is 3 octets; the maximum length may be up to 254 octets.

The allocation/retention priority shall be ignored if the QoS profile is pre-Release '99 or the QoS profile is present in Quality of Service Requested (QoS Req) of the PDP context. A receiving end shall interpret the QoS profile Data field to be coded according to 3GPP TS 24.008 [5] octets 3-5 (i.e. according to the pre-Release '99 format) if the Length field value is 4.

Figure 48: Quality of Service (QoS) Profile Information Element

CHANGE REQUEST								
*	29.060 CR 458	Current version: 3.17.0 **						
For <u>HELP</u> on us	sing this form, see bottom of this page or look at th	e pop-up text over the % symbols.						
Proposed change a	affects: UICC apps Ж ME Radio A	ccess Network Core Network X						
Title: ₩	Correction of Sequence Number Up handling							
Source: #	CN4							
Work item code: 第	GPRS	<i>Date:</i> # 15/10/2003						
	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. In the descriptive text of the Sequence Numstated: "The Sequence Number Up is the number the Number in the GTP Header for the next encal GGSN. The new SGSN shall ignore Sequence QoS profile does not require transmission ord SGSN shall not include Sequence number fied Not to include the SN field in the G-PDU is resulted in the G-PDU is res	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) ber Up handling in section 7.7.29 it is eat new SGSN shall use as the Sequence psulated T-PDU from the MS to the re Number Up when the PDP context der to be preserved. In this case, the old red in the G-PDUs of the PDP context." equired in the 'new' SGSN (not in the						
Summary of chang	re: Replace 'old SGSN' with 'new SGSN'							
Consequences if not approved:	% Wrong description of the required behaviour The sequence number handling for SNU in the lead to interoperability problems.							
Clauses affected:	% 7.7.29							
Other specs affected:	Y N X Other core specifications Test specifications O&M Specifications							
Other comments:	*							

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7.7.29 PDP Context

The PDP Context information element contains the Session Management parameters, defined for an external packet data network address, that are necessary to transfer between SGSNs at the Inter SGSN Routeing Area Update procedure.

NSAPI is an integer value in the range [0; 15].

The NSAPI points out the affected PDP context.

The SAPI indicates the LLC SAPI that is associated with the NSAPI.

The Transaction Identifier is the 4 bit or 12 bit Transaction Identifier used in the 3GPP TS 24.008 Session Management messages which control this PDP Context. If the length of the Transaction Identifier is 4 bit, the second octet shall be set to all zeros. The encoding is defined in 3GPP TS 24.007. The latest Transaction Identifier sent from SGSN to MS is stored in the PDP context IE.

Reordering Required (Order) indicates whether the SGSN shall reorder T-PDUs before delivering the T-PDUs to the MS. When the Quality of Service Negotiated (QoS Neg) is Release 99, the Reordering Required (Order) shall be ignored by receiving entity.

The VPLMN Address Allowed (VAA) indicates whether the MS is allowed to use the APN in the domain of the HPLMN only or additionally the APN in the domain of the VPLMN.

The QoS Sub Length, QoS Req Length and QoS Neg Length represent respectively the lengths of the QoS Sub, QoS Req and QoS Neg fields, excluding the QoS Length octet.

The Quality of Service Subscribed (QoS Sub), Quality of Service Requested (QoS Req) and Quality of Service Negotiated (QoS Neg) are encoded as described in section 'Quality of Service (QoS) Profile. Their minimum length is 4 octets; their maximum length may be 255 octets.

The Sequence Number Down is the number of the next T-PDU that shall be sent from the new SGSN to the MS. The number is associated to the Sequence Number from the GTP Header of an encapsulated T-PDU. The new SGSN shall ignore Sequence Number Down when the PDP context QoS profile does not require transmission order to be preserved. In this case the new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Sequence Number Up is the number that new SGSN shall use as the Sequence Number in the GTP Header for the next encapsulated T-PDU from the MS to the GGSN. The new SGSN shall ignore Sequence Number Up when the PDP context QoS profile does not require transmission order to be preserved. In this case, the old-new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Send N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. Send N-PDU Number is the N-PDU number to be assigned by SNDCP to the next down link N-PDU received from the GGSN. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Receive N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. The Receive N-PDU Number is the N-PDU number expected by SNDCP from the next up link N-PDU to be received from the MS. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Uplink Tunnel Endpoint Identifier Control Plane is the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in up link direction for control plane purpose. It shall be used by the new SGSN within the GTP header of the Update PDP Context Request message.

The GGSN Address for User Traffic and the UplinkTunnel Endpoint Identifier Data I are the GGSN address and the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in uplink direction for user plane traffic on a PDP context. They shall be used by the new SGSN to send uplink user plane PDU to the GGSN

The PDP Context Identifier is used to identify a PDP context for the subscriber. The SGSN shall set the value of PDP Context Identifier to binary (1111 1111) if after inter-SGSN RAU using GTPv0 the new SGSN is not able to assign a correct PDP Context Identifier to the existing PDP contexts.

The PDP Type Organisation and PDP Type Number are encoded as in the End User Address information element.

The PDP Address Length represents the length of the PDP Address field, excluding the PDP Address Length octet.

The PDP Address is an octet array with a format dependent on the PDP Type. The PDP Address is encoded as in the End User Address information element if the PDP Type is IPv4 or IPv6.

The GGSN Address Length represents the length of the GGSN Address field, excluding the GGSN Address Length octet.

The old SGSN includes the GGSN Address for control plane that it has received from GGSN at PDP context activation or update.

The APN is the Access Point Name in use in the old SGSN. This APN field shall be composed of the APN Network Identifier part and the APN Operator Identifier part.

The spare bits x indicate unused bits that shall be set to 0 by the sending side and which shall not be evaluated by the receiving side.

1 Type = 130 (Decimal) 2-3 Length VAA NSAPI Res-Res-Order 4 erved erved SAPI 5 QoS Sub Length 6 QoS Sub [4..255] 7 - (q+6)QoS Req Length q+7 (q+8)-(2q+7)QoS Req [4..255] QoS Neg. Length 2q+8 QoS Neg [4..255] (2q+9)-(3q+8)Sequence Number Down (SND) (note) (3q+9)-(3q+10)Sequence Number Up (SNU) (note) (3q+11)-(3q+12)3q+13 Send N-PDU Number (note) 3q+14 Receive N-PDU Number (note) (3q+15)-Uplink Tunnel Endpoint Identifier Control Plane (3q+18)UplinkTunnel Endpoint Identifier Data I (3q+19)-(3q+22)PDP Context Identifier 3q + 233q+24 Spare 1 1 1 1 PDP Type Organisation PDP Type Number 3q+25 PDP Address Length 3q+26 PDP Address [0..63] (3q+27)-mm+1 GGSN Address for control plane Length (m+2)-n GGSN Address for control plane [4..16] GGSN Address for User Traffic Length n+1 GGSN Address for User Traffic [4..16] (n+2)-0APN length 0+1 APN (o+2)-pSpare (sent as 0 0 0 0) Transaction Identifier p+1 p+2 Transaction Identifier

Figure 43: PDP Context Information Element

NOTE: This field shall not be evaluated when the PDP context is received during UMTS intra system handover/relocation.

Table 48: Reordering Required Values

Reordering Required	Value (Decimal)
No	0
Yes	1

Table 49: VPLMN Address Allowed Values

VPLMN Address Allowed	Value (Decimal)
No	0
Yes	1

	CHANGE REQUEST	CR-Form-v7
*	29.060 CR 459	
For <u>HELP</u> on us	ing this form, see bottom of this page or look at the pop-up text over the % sym	bols.
Proposed change a	ffects: UICC apps器 ME Radio Access Network Core Net	work X
Title: #	Correction of Sequence Number Up handling	
Source: #	CN4	
Work item code: ₩	GPRS Date: # 15/10/2003	
Reason for change	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) Rel-4 (Release 1997) Release 1999) Detailed explanations of the above categories can Rel-4 (Release 4) be found in 3GPP TR 21.900. Rel-6 (Release 6) Rel-6 (Release 6) Rel-7 (Release 6) Rel-8 (Release 6) Rel-9 (Release 6)	7.29 it is equence the ntext the old ntext." ot in the seems
Summary of chang	e: # Replace 'old SGSN' with 'new SGSN'	
Consequences if not approved:	Wrong description of the required behaviour of the old SGSN. The sequence number handling for SNU in the new SGSN is still unclear lead to interoperability problems.	and will
Clauses affected:	% 7.7.29	
Other specs affected:	Y N X Other core specifications X Test specifications O&M Specifications	
Other comments:	x	

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7.29 PDP Context

The PDP Context information element contains the Session Management parameters, defined for an external packet data network address, that are necessary to transfer between SGSNs at the Inter SGSN Routeing Area Update procedure.

NSAPI is an integer value in the range [0; 15].

The NSAPI points out the affected PDP context.

The SAPI indicates the LLC SAPI that is associated with the NSAPI.

The Transaction Identifier is the 4 or 12 bit Transaction Identifier used in the 3GPP TS 24.008 Session Management messages which control this PDP Context. If the length of the Transaction Identifier is 4 bit, the second octet shall be set to all zeros. The encoding is defined in 3GPP TS 24.007. The latest Transaction Identifier sent from SGSN to MS is stored in the PDP context IE.

Reordering Required (Order) indicates whether the SGSN shall reorder T-PDUs before delivering the T-PDUs to the MS. When the Quality of Service Negotiated (QoS Neg) is Release 99, the Reordering Required (Order) shall be ignored by receiving entity.

The VPLMN Address Allowed (VAA) indicates whether the MS is allowed to use the APN in the domain of the HPLMN only or additionally the APN in the domain of the VPLMN.

The QoS Sub Length, QoS Req Length and QoS Neg Length represent respectively the lengths of the QoS Sub, QoS Req and QoS Neg fields, excluding the QoS Length octet.

The Quality of Service Subscribed (QoS Sub), Quality of Service Requested (QoS Req) and Quality of Service Negotiated (QoS Neg) are encoded as described in section 'Quality of Service (QoS) Profile. Their minimum length is 4 octets; their maximum length may be 255 octets.

The Sequence Number Down is the number of the next T-PDU that shall be sent from the new SGSN to the MS. The number is associated to the Sequence Number from the GTP Header of an encapsulated T-PDU. The new SGSN shall ignore Sequence Number Down when the PDP context QoS profile does not require transmission order to be preserved. In this case the new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Sequence Number Up is the number that new SGSN shall use as the Sequence Number in the GTP Header for the next encapsulated T-PDU from the MS to the GGSN. The new SGSN shall ignore Sequence Number Up when the PDP context QoS profile does not require transmission order to be preserved. In this case, the old-new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Send N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. Send N-PDU Number is the N-PDU number to be assigned by SNDCP to the next down link N-PDU received from the GGSN. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Receive N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. The Receive N-PDU Number is the N-PDU number expected by SNDCP from the next up link N-PDU to be received from the MS. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Uplink Tunnel Endpoint Identifier Control Plane is the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in up link direction for control plane purpose. It shall be used by the new SGSN within the GTP header of the Update PDP Context Request message.

The GGSN Address for User Traffic and the UplinkTunnel Endpoint Identifier Data I are the GGSN address and the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in uplink direction for user plane traffic on a PDP context. They shall be used by the new SGSN to send uplink user plane PDU to the GGSN

The PDP Context Identifier is used to identify a PDP context for the subscriber. The SGSN shall set the value of PDP Context Identifier to binary (1111 1111) if after inter-SGSN RAU using GTPv0 the new SGSN is not able to assign a correct PDP Context Identifier to the existing PDP contexts.

The PDP Type Organisation and PDP Type Number are encoded as in the End User Address information element.

The PDP Address Length represents the length of the PDP Address field, excluding the PDP Address Length octet.

The PDP Address is an octet array with a format dependent on the PDP Type. The PDP Address is encoded as in the End User Address information element if the PDP Type is IPv4 or IPv6.

The GGSN Address Length represents the length of the GGSN Address field, excluding the GGSN Address Length octet.

The old SGSN includes the GGSN Address for control plane that it has received from GGSN at PDP context activation or update.

The APN is the Access Point Name in use in the old SGSN. This APN field shall be composed of the APN Network Identifier part and the APN Operator Identifier part.

The spare bits x indicate unused bits that shall be set to 0 by the sending side and which shall not be evaluated by the receiving side.

1 Type = 130 (Decimal) 2-3 Length VAA NSAPI Res-Res-Order 4 erved erved SAPI 5 QoS Sub Length 6 QoS Sub [4..255] 7 - (q+6)QoS Req Length q+7 (q+8)-(2q+7)QoS Req [4..255] QoS Neg. Length 2q+8 (2q+9)-QoS Neg [4..255] (3q+8)Sequence Number Down (SND) (note) (3q+9)-(3q+10)(3q+11)-Sequence Number Up (SNU) (note) (3q+12)3q+13 Send N-PDU Number (note) 3q+14 Receive N-PDU Number (note) (3q+15)-Uplink Tunnel Endpoint Identifier Control Plane (3q+18)(3q+19)-UplinkTunnel Endpoint Identifier Data I (3q+22)3q+23 PDP Context Identifier 3q+24 Spare 1 1 1 1 PDP Type Organisation PDP Type Number 3q+25 PDP Address Length 3q+26 PDP Address [0..63] (3q+27)-mGGSN Address for control plane Length m+1 (m+2)-nGGSN Address for control plane [4..16] GGSN Address for User Traffic Length n+1 GGSN Address for User Traffic [4..16] (n+2)-00+1 APN length APN (o+2)-pTransaction Identifier p+1 Spare (sent as 0 0 0 0) Transaction Identifier p+2

Figure 43: PDP Context Information Element

NOTE: This field shall not be evaluated when the PDP context is received during UMTS intra system handover/relocation.

Table 48: Reordering Required Values

Reordering Required	Value (Decimal)
No	0
Yes	1

Table 49: VPLMN Address Allowed Values

VPLMN Address Allowed	Value (Decimal)
No	0
Yes	1

	CHANGE REQUEST	CR-Form-v7
*	29.060 CR 460	Current version: 5.7.0 **
For <u>HELP</u> on us	sing this form, see bottom of this page or look at the	pop-up text over the % symbols.
Proposed change a	affects: UICC apps 畿 ME Radio Ac	ccess Network Core Network X
Title: 第	Correction of Sequence Number Up handling	
Source: #	CN4	
Work item code: ₩	GPRS	Date: 第 <mark>15/10/2003</mark>
Reason for change	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.	R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) Rel-4 (Release 4) Rel-5 (Release 5) Rel-6 (Release 6) er Up handling in section 7.7.29 it is at new SGSN shall use as the Sequence sulated T-PDU from the MS to the en Number Up when the PDP context ar to be preserved. In this case, the old at in the G-PDUs of the PDP context." Equired in the 'new' SGSN (not in the cription for SNU in section 7.7.29. It
Summary of chang	re: 第 Replace 'old SGSN' with 'new SGSN'	
Consequences if not approved:	Wrong description of the required behaviour of the sequence number handling for SNU in the lead to interoperability problems.	
Clauses affected:	% 7.7.29	
Other specs affected:	Y N X Other core specifications X Test specifications X O&M Specifications	
Other comments:	x	

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7.29 PDP Context

The PDP Context information element contains the Session Management parameters, defined for an external packet data network address, that are necessary to transfer between SGSNs at the Inter SGSN Routeing Area Update procedure.

NSAPI is an integer value in the range [0; 15].

The NSAPI points out the affected PDP context.

The SAPI indicates the LLC SAPI that is associated with the NSAPI.

The Transaction Identifier is the 4 or 12 bit Transaction Identifier used in the 3GPP TS 24.008 [5] Session Management messages which control this PDP Context. If the length of the Transaction Identifier is 4 bit, the second octet shall be set to all zeros. The encoding is defined in 3GPP TS 24.007 [3]. The latest Transaction Identifier sent from SGSN to MS is stored in the PDP context IE.

NOTE: Bit 5-8 of the first octet in the encoding defined in 3GPP TS 24.007 [3] is mapped into bit 1-4 of the first octet in this field.

Reordering Required (Order) indicates whether the SGSN shall reorder T-PDUs before delivering the T-PDUs to the MS. When the Quality of Service Negotiated (QoS Neg) is Release 99, the Reordering Required (Order) shall be ignored by receiving entity.

The VPLMN Address Allowed (VAA) indicates whether the MS is allowed to use the APN in the domain of the HPLMN only or additionally the APN in the domain of the VPLMN.

The QoS Sub Length, QoS Req Length and QoS Neg Length represent respectively the lengths of the QoS Sub, QoS Req and QoS Neg fields, excluding the QoS Length octet.

The Quality of Service Subscribed (QoS Sub), Quality of Service Requested (QoS Req) and Quality of Service Negotiated (QoS Neg) are encoded as described in section 'Quality of Service (QoS) Profile'. Their minimum length is 4 octets; their maximum length may be 255 octets.

The Sequence Number Down is the number of the next T-PDU that shall be sent from the new SGSN to the MS. The number is associated to the Sequence Number from the GTP Header of an encapsulated T-PDU. The new SGSN shall ignore Sequence Number Down when the PDP context QoS profile does not require transmission order to be preserved. In this case the new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Sequence Number Up is the number that new SGSN shall use as the Sequence Number in the GTP Header for the next encapsulated T-PDU from the MS to the GGSN. The new SGSN shall ignore Sequence Number Up when the PDP context QoS profile does not require transmission order to be preserved. In this case, the eld-new_SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Send N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. Send N-PDU Number is the N-PDU number to be assigned by SNDCP to the next down link N-PDU received from the GGSN. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Receive N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. The Receive N-PDU Number is the N-PDU number expected by SNDCP from the next up link N-PDU to be received from the MS. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Uplink Tunnel Endpoint Identifier Control Plane is the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in up link direction for control plane purpose. It shall be used by the new SGSN within the GTP header of the Update PDP Context Request message.

The GGSN Address for User Traffic and the UplinkTunnel Endpoint Identifier Data I are the GGSN address and the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in uplink direction for user plane traffic on a PDP context. They shall be used by the new SGSN to send uplink user plane PDU to the GGSN until new GGSN address for User Traffic is possibly received from GGSN (in Update PDP Context Response).

The PDP Context Identifier is used to identify a PDP context for the subscriber. The SGSN shall set the value of PDP Context Identifier to binary (1111 1111) if after inter-SGSN RAU using GTPv0 the new SGSN is not able to assign a correct PDP Context Identifier to the existing PDP contexts.

The PDP Type Organisation and PDP Type Number are encoded as in the End User Address information element.

The PDP Address Length represents the length of the PDP Address field, excluding the PDP Address Length octet.

The PDP Address is an octet array with a format dependent on the PDP Type. The PDP Address is encoded as in the End User Address information element if the PDP Type is IPv4 or IPv6.

The GGSN Address Length represents the length of the GGSN Address field, excluding the GGSN Address Length octet.

When forwarding the GGSN addresses to another SGSN (in PDP Context IE in Forward Relocation Request or SGSN Context Response message), the IPv4/IPv6 capable SGSN shall include GGSN addresses according to the IP version capability of the receiving SGSN.

The old SGSN includes the GGSN Address for control plane that it has received from GGSN at PDP context activation or update. If the new SGSN is IPv6 capable and the old SGSN has IPv6 control plane address of the GGSN available, the old IPv4/IPv6 capable SGSN includes the IPv6 GGSN control plane address in the field GGSN Address for control plane. If the new SGSN is IPv4 only capable or the old SGSN does not have any IPv6 GGSN address for control plane, the old SGSN includes the IPv4 GGSN Address in the field GGSN Address for control plane.

The use of Ipv6 addressing in pre-Release 5 nodes can cause interoperability problems and as such the use of IPv6 GSN addressing is not recommended in pre-Release 5.

NOTE: There is still the need for further study of the included addresses on SRNS relocation.

The APN is the Access Point Name in use in the old SGSN. This APN field shall be composed of the APN Network Identifier part and the APN Operator Identifier part.

The spare bits x indicate unused bits that shall be set to 0 by the sending side and which shall not be evaluated by the receiving side.

			Bi	its					
Octets	8	7	6	5	4	3	2	1	
1	Type = 130 (Decimal)								
2-3		Length							
4	Res-	VAA	Res-	Order		NS	API		
	erved		erved						
5	Χ	Χ	X	Χ			ŀΡΙ		
6				oS Sub					
7 - (q+6)				oS Sub					
q+7				oS Red					
(q+8)-(2q+7)				oS Rec					
2q+8				oS Neg					
(2q+9)-			Q	oS Neg	[425	55]			
(3q+8)									
(3q+9)-		Sequ	ience N	lumber	Down	(SND) (note)		
(3q+10)									
(3q+11)-		Sequence Number Up (SNU) (note)							
(3q+12)									
3q+13	Send N-PDU Number (note)								
3q+14		Receive N-PDU Number (note)							
(3q+15)-	Up	olink Tu	ınnel E	ndpoint	Identif	ier Con	trol Plai	ne	
(3q+18)									
(3q+19)-		Uplin	ıkTunne	el Endpo	oint Ide	entifier D	Data I		
(3q+22)									
3q+23				Conte					
3q+24		Spare	1111			Type C	Organis	ation	
3q+25				ЭР Туре					
3q+26		PDP Address Length							
(3q+27)-m	PDP Address [063]								
m+1	GGSN Address for control plane Length								
(m+2)-n	GGSN Address for control plane [416]								
n+1	GGSN Address for User Traffic Length								
(n+2)-o	GGSN Address for User Traffic [416]								
o+1	APN length								
(o+2)-p				AF	PN				
p+1	Spar	e (sen	t as 0 0	0 0)	Tra	ansactio	n Ident	ifier	
p+2			Tra	nsactio	n Iden	tifier			

NOTE: This field shall not be evaluated when the PDP context is received during UMTS intra system handover/relocation.

Figure 43: PDP Context Information Element

Table 48: Reordering Required Values

Reordering Required	Value (Decimal)
No	0
Yes	1

Table 49: VPLMN Address Allowed Values

VPLMN Address Allowed	Value (Decimal)
No	0
Yes	1

	CHANGE REQUEST	CR-Form-v7
æ	29.060 CR 461	rent version: 6.2.0 **
For <u>HELP</u> on u	sing this form, see bottom of this page or look at the pop	n-up text over the % symbols.
Proposed change a	affects: UICC appsЖ ME Radio Access	s Network Core Network X
Title: 第	Correction of Sequence Number Up handling	
Source: %	CN4	
Work item code: 第	GPRS	Date: # 15/10/2003
Reason for change	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.	w SGSN shall use as the Sequence ted T-PDU from the MS to the mber Up when the PDP context be preserved. In this case, the old the G-PDUs of the PDP context." ed in the 'new' SGSN (not in the pon for SNU in section 7.7.29. It
Summary of chang	ge: Replace 'old SGSN' with 'new SGSN'	
Consequences if not approved:	Wrong description of the required behaviour of the The sequence number handling for SNU in the ne lead to interoperability problems.	
Clauses affected:	% 7.7.29	
Other specs affected:	Y N X Other core specifications	
Other comments:	%	

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

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The NSAPI points out the affected PDP context.

The SAPI indicates the LLC SAPI that is associated with the NSAPI.

The Transaction Identifier is the 4 or 12 bit Transaction Identifier used in the 3GPP TS 24.008 [5] Session Management messages which control this PDP Context. If the length of the Transaction Identifier is 4 bit, the second octet shall be set to all zeros. The encoding is defined in 3GPP TS 24.007 [3]. The latest Transaction Identifier sent from SGSN to MS is stored in the PDP context IE.

NOTE: Bit 5-8 of the first octet in the encoding defined in 3GPP TS 24.007 [3] is mapped into bit 1-4 of the first octet in this field.

Reordering Required (Order) indicates whether the SGSN shall reorder T-PDUs before delivering the T-PDUs to the MS. When the Quality of Service Negotiated (QoS Neg) is Release 99, the Reordering Required (Order) shall be ignored by receiving entity.

The VPLMN Address Allowed (VAA) indicates whether the MS is allowed to use the APN in the domain of the HPLMN only or additionally the APN in the domain of the VPLMN.

The QoS Sub Length, QoS Req Length and QoS Neg Length represent respectively the lengths of the QoS Sub, QoS Req and QoS Neg fields, excluding the QoS Length octet.

The Quality of Service Subscribed (QoS Sub), Quality of Service Requested (QoS Req) and Quality of Service Negotiated (QoS Neg) are encoded as described in section 'Quality of Service (QoS) Profile'. Their minimum length is 4 octets; their maximum length may be 255 octets.

The Sequence Number Down is the number of the next T-PDU that shall be sent from the new SGSN to the MS. The number is associated to the Sequence Number from the GTP Header of an encapsulated T-PDU. The new SGSN shall ignore Sequence Number Down when the PDP context QoS profile does not require transmission order to be preserved. In this case the new SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Sequence Number Up is the number that new SGSN shall use as the Sequence Number in the GTP Header for the next encapsulated T-PDU from the MS to the GGSN. The new SGSN shall ignore Sequence Number Up when the PDP context QoS profile does not require transmission order to be preserved. In this case, the eld-new_SGSN shall not include Sequence number field in the G-PDUs of the PDP context.

The Send N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. Send N-PDU Number is the N-PDU number to be assigned by SNDCP to the next down link N-PDU received from the GGSN. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Receive N-PDU Number is used only when acknowledged peer-to-peer LLC operation is used for the PDP context. The Receive N-PDU Number is the N-PDU number expected by SNDCP from the next up link N-PDU to be received from the MS. It shall be set to 255 if unacknowledged peer-to-peer LLC operation is used for the PDP context.

The Uplink Tunnel Endpoint Identifier Control Plane is the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in up link direction for control plane purpose. It shall be used by the new SGSN within the GTP header of the Update PDP Context Request message.

The GGSN Address for User Traffic and the UplinkTunnel Endpoint Identifier Data I are the GGSN address and the Tunnel Endpoint Identifier used between the old SGSN and the GGSN in uplink direction for user plane traffic on a PDP context. They shall be used by the new SGSN to send uplink user plane PDU to the GGSN until new GGSN address for User Traffic is possibly received from GGSN (in Update PDP Context Response).

The PDP Context Identifier is used to identify a PDP context for the subscriber. The SGSN shall set the value of PDP Context Identifier to binary (1111 1111) if after inter-SGSN RAU using GTPv0 the new SGSN is not able to assign a correct PDP Context Identifier to the existing PDP contexts.

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The PDP Address Length represents the length of the PDP Address field, excluding the PDP Address Length octet.

The PDP Address is an octet array with a format dependent on the PDP Type. The PDP Address is encoded as in the End User Address information element if the PDP Type is IPv4 or IPv6.

The GGSN Address Length represents the length of the GGSN Address field, excluding the GGSN Address Length octet.

When forwarding the GGSN addresses to another SGSN (in PDP Context IE in Forward Relocation Request or SGSN Context Response message), the IPv4/IPv6 capable SGSN shall include GGSN addresses according to the IP version capability of the receiving SGSN.

The old SGSN includes the GGSN Address for control plane that it has received from GGSN at PDP context activation or update. If the new SGSN is IPv6 capable and the old SGSN has IPv6 control plane address of the GGSN available, the old IPv4/IPv6 capable SGSN includes the IPv6 GGSN control plane address in the field GGSN Address for control plane. If the new SGSN is IPv4 only capable or the old SGSN does not have any IPv6 GGSN address for control plane, the old SGSN includes the IPv4 GGSN Address in the field GGSN Address for control plane.

The use of Ipv6 addressing in pre-Release 5 nodes can cause interoperability problems and as such the use of IPv6 GSN addressing is not recommended in pre-Release 5.

NOTE: There is still the need for further study of the included addresses on SRNS relocation.

The APN is the Access Point Name in use in the old SGSN. This APN field shall be composed of the APN Network Identifier part and the APN Operator Identifier part.

The spare bits x indicate unused bits that shall be set to 0 by the sending side and which shall not be evaluated by the receiving side.

			Bi	its					
Octets	8	7	6	5	4	3	2	1	
1	Type = 130 (Decimal)								
2-3		Length							
4	Res-	VAA	Res-	Order		NS	API		
	erved		erved						
5	Χ	Χ	X	Χ			ŀΡΙ		
6				oS Sub					
7 - (q+6)				oS Sub					
q+7				oS Red					
(q+8)-(2q+7)				oS Rec					
2q+8				oS Neg					
(2q+9)-			Q	oS Neg	[425	55]			
(3q+8)									
(3q+9)-		Sequ	ience N	lumber	Down	(SND) (note)		
(3q+10)									
(3q+11)-		Sequence Number Up (SNU) (note)							
(3q+12)									
3q+13	Send N-PDU Number (note)								
3q+14		Receive N-PDU Number (note)							
(3q+15)-	Up	olink Tu	ınnel E	ndpoint	Identif	ier Con	trol Plai	ne	
(3q+18)									
(3q+19)-		Uplin	ıkTunne	el Endpo	oint Ide	entifier D	Data I		
(3q+22)									
3q+23				Conte					
3q+24		Spare	1111			Type C	Organis	ation	
3q+25				ЭР Туре					
3q+26		PDP Address Length							
(3q+27)-m	PDP Address [063]								
m+1	GGSN Address for control plane Length								
(m+2)-n	GGSN Address for control plane [416]								
n+1	GGSN Address for User Traffic Length								
(n+2)-o	GGSN Address for User Traffic [416]								
o+1	APN length								
(o+2)-p				AF	PN				
p+1	Spar	e (sen	t as 0 0	0 0)	Tra	ansactio	n Ident	ifier	
p+2			Tra	nsactio	n Iden	tifier			

NOTE: This field shall not be evaluated when the PDP context is received during UMTS intra system handover/relocation.

Figure 43: PDP Context Information Element

Table 48: Reordering Required Values

Reordering Required	Value (Decimal)
No	0
Yes	1

Table 49: VPLMN Address Allowed Values

VPLMN Address Allowed	Value (Decimal)
No	0
Yes	1

			(CHANG	E REQ	UES	Γ		CR-Form-v7
*		29.06	0 CR	475	жrev	*	Current vers	4.9.0	*
For <u>HI</u>	ELP on u	sing this	form, see	bottom of the	nis page or	look at t	he pop-up text	over the % sy	mbols.
Proposed	l change a	affects:	UICC a	pps Ж <mark>─</mark>	ME	Radio	Access Netwo	rk Core N	etwork X
Title:	ж	Correc	ion of inc	correct refere	ence to a w	ithdrawn	specification		
Source:	ж	CN4							
Work iten	n code: ₩	GTP e	hancem	ents			Date: ℜ	29/10/2003	
Category	<i>:</i> ₩	F (0 A (0 B (3 C (1 D (0 Detailed	correction) correspondaddition of unctional meditorial measureleptons.	ds to a correct	tion in an ea		2	Rel-4 the following rel (GSM Phase 2) (Release 1996) (Release 1997) (Release 1998) (Release 1999) (Release 4) (Release 5) (Release 6)	
Reason fo	or change	sp	ecificatio	protocol spen (04.08).			n incorrect refe	erence to a with	ndrawn
Summary	of chang	ge: Ж <mark>T</mark>	e correct	references	<mark>are put in p</mark>	lace.			
Consequence not appro				ementors manual emplementing				specification e	exists and
Clauses a	affected:	第 7.	7.34						
Other spe	ecs	*	X Test	r core specifi specification Specification	S	×			
Other cor	nments:	_	R was ref cluded.	erred back to	o CN4 at C	N#21 to	ensure correct	reference was	3

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be

- downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

7.7.34 Quality of Service (QoS) Profile

The Quality of Service (QoS) Profile shall include the values of the defined QoS parameters. Octet 4 carries the allocation/retention priority octet that is defined in 3GPP TS 23.107. The allocation/retention priority octet encodes each priority level defined in 3GPP TS 23.107 as the binary value of the priority level. Octets 5 - n are coded according to 3GPP TS 24.008 Quality of Service IE, octets 3 - 13. If a pre-Release '99 only capable terminal is served, octets 5 - n are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5. The minimum length of the field QoS Profile Data is 3 octets; the maximum length may be up to 254 octets.

The allocation/retention priority shall be ignored if the QoS profile is pre-Release '99 or the QoS profile is present in Quality of Service Requested (QoS Req) of the PDP context. A receiving end shall interpret the QoS profile Data field to be coded according to 3GPP TS 04.0824.008 [5] octets 3-5 (i.e. according to the pre-Release '99 format) if the Length field value is 4.

Figure 48: Quality of Service (QoS) Profile Information Element

CHANGE REQUEST							
*	29.060	CR 476	жrev	₩ Cu	rrent version	5.7.0	*
For <u>HELP</u> on us	sing this fo	rm, see bottom o	f this page or loo	k at the po	pp-up text ov	er the % syn	nbols.
Proposed change affects: UICC apps # ME Radio Access Network Core Network X							
Title: #	Correctio	n of incorrect refe	erence to a withd	rawn spec	cification		
Source: #	CN4						
Work item code: ₩	GTP enh	ancements			Date: 第 2	9/10/2003	
Category: ₩	F (cor A (cor B (add C (fur D (edi Detailed ex	the following categorection) Tresponds to a corredition of feature), Totional modification Totional modification Totional modification Totional modification Totional modification Totional modification	ection in an earlier n of feature)	release)	R96 (Re R97 (Re R98 (Re R99 (Re Rel-4 (Re Rel-5 (Re		ases:
Reason for change: # In the GTP protocol specification there is an incorrect reference to a withdrawn specification (04.08).							
Summary of chang	e: 器 The	correct reference	s are put in place	e.			
Consequences if not approved:		e implementors r start implementi				ecification ex	xists and
Clauses affected:	% 7.7.3	34					
Other specs affected:	¥ N × X X	Other core spec Test specification O&M Specification	ons				
Other comments:	*						

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3)	 With "track changes" disabled, paste the the clause containing the first piece of containing the first piece of containing the change request. 	e entire CR for hanged text. I	rm (use CTRL-A to Delete those parts	select it) into the spe of the specification w	ecification just in front of hich are not relevant to

7.7.34 Quality of Service (QoS) Profile

The Quality of Service (QoS) Profile shall include the values of the defined QoS parameters. Octet 4 carries the allocation/retention priority octet that is defined in 3GPP TS 23.107. The allocation/retention priority octet encodes each priority level defined in 3GPP TS 23.107 as the binary value of the priority level. Octets 5 - n are coded according to 3GPP TS 24.008 Quality of Service IE, octets 3 - 13. If a pre-Release '99 only capable terminal is served, octets 5 - n are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5. The minimum length of the field QoS Profile Data is 3 octets; the maximum length may be up to 254 octets.

The allocation/retention priority shall be ignored if the QoS profile is pre-Release '99 or the QoS profile is present in Quality of Service Requested (QoS Req) of the PDP context. A receiving end shall interpret the QoS profile Data field to be coded according to 3GPP TS 04.0824.008 [5] octets 3-5 (i.e. according to the pre-Release '99 format) if the Length field value is 4.

Figure 48: Quality of Service (QoS) Profile Information Element

CHANGE REQUEST							
*	29.060	CR 477	жrev	- # (Current version	6.2.0	×
For <u>HELP</u> on u	sing this fo	orm, see bottom o	of this page or i	look at the	pop-up text ov	∕er the % syn	nbols.
Proposed change affects: UICC apps# ME Radio Access Network Core Network X							
Title: 第	Correcti	on of incorrect re	ference to a wit	thdrawn sp	ecification		
Source: #	CN4						
Work item code: ₩	GTP enl	nancements			Date: % 2	29/10/2003	
Category: 業	F (cc A (cc B (ac C (fu D (ec Detailed e	f the following cate prection) presponds to a condition of feature), nctional modification in the factorial modification in th	rection in an ear on of feature)) above categories	lier release)	Use <u>one</u> of the 2 (G R96 (R R97 (R R98 (R R99 (R Rel-4 (R Rel-5 (R	Rel-6 e following rele GSM Phase 2) Release 1996) Release 1997) Release 1998) Release 1999) Release 4) Release 5) Release 6)	ases:
Reason for change: # In the GTP protocol specification there is an incorrect reference to a withdrawn specification (04.08).							
Summary of change: % The correct references are put in place.							
Consequences if not approved: Some implementors may be misled to believe such specification exists and then start implementing according to a best guess.							
Clauses affected:	₩ 7.7.	.34					
Other specs affected:	A Y K K K	Test specificat	ions	æ			
Other comments:	ж						

How to create CRs using this form:

- 1) Fill out the above form. The symbols above marked # contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under ftp://ftp.3gpp.org/specs/ For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.

3)	 With "track changes" disabled, paste the the clause containing the first piece of containing the first piece of containing the change request. 	e entire CR for hanged text. I	rm (use CTRL-A to Delete those parts	select it) into the spe of the specification w	ecification just in front of hich are not relevant to

7.7.34 Quality of Service (QoS) Profile

The Quality of Service (QoS) Profile shall include the values of the defined QoS parameters. Octet 4 carries the allocation/retention priority octet that is defined in 3GPP TS 23.107. The allocation/retention priority octet encodes each priority level defined in 3GPP TS 23.107 as the binary value of the priority level. Octets 5 - n are coded according to 3GPP TS 24.008 Quality of Service IE, octets 3 - 13. If a pre-Release '99 only capable terminal is served, octets 5 - n are coded according to 3GPP TS 24.008 [5] Quality of Service IE, octets 3 - 5. The minimum length of the field QoS Profile Data is 3 octets; the maximum length may be up to 254 octets.

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Figure 48: Quality of Service (QoS) Profile Information Element