3GPP TSG_CN **Tdoc NP-000272**
Plenary Meeting #8, Dusseldorf, Germany
21st – 23rd June 2000.

Source: **TSG_N WG "1"**

Title: **CRs to 3G Work Item "QoS"**

Agenda item: **6.20**

Document for: **APPROVAL**

Introduction:

This document contains **"3"** CRs on **Work Item "QoS",** that have been agreed by **TSG_N WG "1",** and are forwarded to **TSG_N Plenary** meeting #8 for approval.

Tdoc	Spec	CR	Rev	CAT	Rel.	Old Ver	New Ver	Subject
N1-000661	24.008	CR212		F	R99	3.3.1	3.4.0	Reserve one bit in PFI
N1-000720	24.008	CR187	1	F	R99	3.3.1	3.4.0	Additional SDU error rate value
N1-000615	24.008	CR188		F	R99	3.3.1	3.4.0	TFT IE length and editorials

3GPP-CN1/SMG3WPA Meeting #12
Oahu/Hawaii, USA. 22-26 May, 2000

***Document* N1-000615**
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

CHANGE REQUEST

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24.008	**CR**	**188**	Current Version:	3.3.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSGN#8 *list expected approval meeting # here ↑*	for approval	X	strategic		*(for SMG use only)*
	for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio		Core Network	X

Source: Ericsson **Date:** 05.05.00

Subject: TFT IE length and editorials

Work item: QoS

Category: *(only one category shall be marked with an X)*			**Release:**	
F	Correction	X	Phase 2	
A	Corresponds to a correction in an earlier release		Release 96	
B	Addition of feature		Release 97	
C	Functional modification of feature		Release 98	
D	Editorial modification		Release 99	X
			Release 00	

Reason for change: When changing TFT IE from Mandatory to Optional the length adjustment was forgotten.
The implementation of the CR to delete X25 failed to delete X.121 reference, and additionally some other editorials are made.

Clauses affected: 6.1.1, 6.1.3.2.3, 9.5.4, 10.5.6.4

Other specs affected:			
Other 3G core specifications		→ List of CRs:	
Other GSM core specifications		→ List of CRs:	
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

<--------- double-click here for help and instructions on how to create a CR.

6.1.1 General

The main function of the session management (SM) is to support PDP context handling of the user terminal. The SM comprises procedures for

identified PDP context activation, deactivation and modification.~~;~~ SM procedures for identified access can only be performed if a GMM context has been established between the MS and the network. If no GMM context has been established, the MM sublayer has to initiate the establishment of a GMM context by use of the GMM procedures as described in chapter 4. After GMM context establishment, SM uses services offered by GMM (see TS 24.007 [20]). Ongoing SM procedures are suspended during GMM procedure execution.

For the session management protocol, the extended TI mechanism may be used (see 24.007).

"""""""""""" NEXT MODIFICATION""""""""""""""""""

6.1.3.2.3 Abnormal cases

The following abnormal cases can be identified:

a) Expiry of timers

On the first expiry of the timer T3380, the MS shall resent the ACTIVATE SECONDARY PDP CONTEXT REQUEST and shall reset and restart timer T3380. This retransmission is repeated four times, i.e. on the fifth expiry of timer T3380, the MS shall release all resources possibly allocated for this invocation and shall abort the procedure; no automatic PDP context activation re-attempt shall be performed.

b) MS initiated secondary PDP context activation procedure for an already activated PDP context (On the network side)

i) If all parameters of the new ACTIVATE SECONDARY PDP CONTEXT REQUEST message match with those of a previously activated PDP context, the network may reply with an ACTIVATE SECONDARY PDP CONTEXT ACCEPT message immediately .

ii) Alternatively the network shall take the action described below:

- If the NSAPI matches one of an already activated PDP context, the network shall deactivate the existing one locally without notification to the MS and proceed with the requested PDP context activation.

Otherwise, the network shall check the parameters as follows:

~~———~~The network shall first check whether there is an activated PDP context for the TI given in the Linked TI IE in the ACTIVATE SECONDARY PDP CONTEXT REQUEST message. If there is no active PDP context for the specified TI, the network shall reply with an ACTIVATE SECONDARY PDP CONTEXT REJECT message, cause code indicating "unknown PDP context". If there exists a PDP context for the TI given in the Linked TI IE, then the TFT in the request message is checked for different types of TFT IE errors as follows:

- ~~Semantic errors in TFT operations:~~

~~1) When the *TFT operation* is an operation other than "Create a new TFT".~~

~~The network shall reject the activation request with cause "semantic error in the TFT operation".~~

a) Semantic errors in TFT operations:

1) When the *TFT operation* is an operation other than "Create a new TFT".

The network shall reject the activation request with cause "semantic error in the TFT operation".

~~a)~~b) Syntactical errors in TFT operations:

1) When the *TFT operation* = "Create a new TFT" and the packet filter list in the TFT IE is empty.

2) When there are other types of syntactical errors in the coding of the TFT IE, such as a mismatch between the number of packet filters subfield, and the number of packet filters in the packet filter list.

The network shall reject the activation request with cause "syntactical error in the TFT operation".

~~b)~~c) Semantic errors in packet filters:

1) When a packet filter consists of conflicting packet filter components which would render the packet filter ineffective, i.e., no IP packet will ever fit this packet filter. How the network determines a semantic error in a packet filter is outside the scope of this specification.

The network shall reject the activation request with cause "semantic errors in packet filter(s)".

~~c)~~d) Syntactical errors in packet filters:

1) When the *TFT operation* = "Create a new TFT" and two or more packet filters in the resultant TFT would have identical packet filter identifiers.

2) When the *TFT operation* = "Create a new TFT" and two or more packet filters in all TFTs associated with this PDP address would have identical packet filter precedence values.

3) When there are other types of syntactical errors in the coding of packet filters, such as the use of a reserved value for a packet filter component identifier.

The network shall reject the activation request with cause "syntactical errors in packet filter(s)".

Otherwise, the network shall accept the activation request by replying to the MS with an ACTIVATE SECONDARY PDP CONTEXT ACCEPT message.

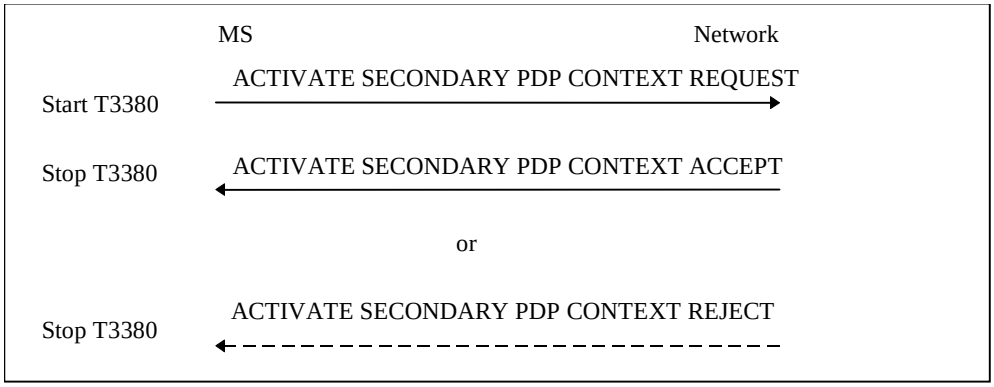

Figure 6.5/TS 24.008: MS initiated secondary PDP context activation procedure

"""""""""""""" NEXT MODIFICATION""""""""""""""""""

9.5.4 Activate Secondary PDP Context Request

This message is sent by the MS to the network to request activation of an additional PDP context associated with the same PDP address and APN as an already active PDP context. See Table 9.5.4/TS 24.008.

Message type:	ACTIVATE SECONDARY PDP CONTEXT REQUEST
Significance:	global
Direction:	MS to network

Table 9.5.4/TS 24.008: Activate SECONDARY PDP context request message content

IEI	Information Element	Type/Reference	Presence	Format	Length
	Protocol discriminator	Protocol discriminator 10.2	M	V	½
	Transaction identifier	Transaction identifier 10.3.2	M	V	½– 3/2
	Activate secondary PDP context request message identity	Message type 10.4	M	V	1
	Requested NSAPI	Network service access point identifier 10.5.6.2	M	V	1
	Requested LLC SAPI	LLC service access point identifier 10.5.6.9	M	V	1
	Requested QoS	Quality of service 10.5.6.5	M	LV	12
	Linked TI	Linked TI 10.5.6.7	M	LV	2-3
36	TFT	Traffic Flow Template 10.5.6.12	O	TLV	257~~6~~

9.5.4.1 TFT

This IE shall be included if a PDP context without TFT has already been activated.

"""""""""""""" NEXT MODIFICATION""""""""""""""""""""

10.5.6.4 Packet data protocol address

The purpose of the *packet data protocol address* information element is to identify an address associated with a PDP.

The *packet data protocol address* is a type 4 information element with minimum length of 4 octets and a maximum length of 20 octets.

The *packet data protocol address* information element is coded as shown in figure 10.5.137/TS 24.008 and table 10.5.155/TS 24.008.

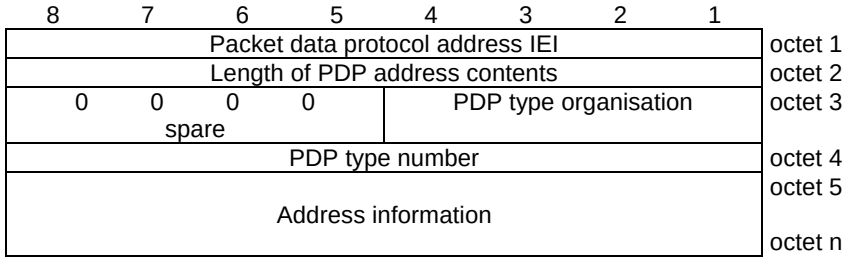

Figure 10.5.137/TS 24.008: *Packet data protocol address* information element

Table 10.5.155/TS 24.008: *Packet data protocol address* information element

Length of PDP address contents (octet 2)

If the value of octet 2 equals 0000 0010, then :

- No PDP address is included in this information element; and
- If the PDP type is IP, dynamic addressing is applicable.

NOTE : For PPP and OSP:IHOSS, no address is required in this information element.

PDP type organisation (octet 3)
Bits
4 3 2 1
In MS to network direction :
0 0 0 0 ETSI allocated address ~~(e.g. X.121)~~
0 0 0 1 IETF allocated address
1 1 1 1 Empty PDP type

All other values are reserved.

In network to MS direction :
0 0 0 0 ETSI allocated address ~~(e.g. X.121)~~
0 0 0 1 IETF allocated address

All other values are reserved.

If bits 4,3,2,1 of octet 3 are coded 0 0 0 0
PDP type number value (octet 4)
Bits
8 7 6 5 4 3 2 1
0 0 0 0 0 0 0 0 Reserved, used in earlier version of this protocol
0 0 0 0 0 0 0 1 PDP-type PPP
0 0 0 0 0 0 1 0 PDP-type OSP:IHOSS

All other values are reserved
in this version of the protocol.

If bits 4,3,2,1 of octet 3 are coded 0 0 0 1
PDP type number value (octet 4)
Bits
8 7 6 5 4 3 2 1
0 0 1 0 0 0 0 1 IPv4 address
0 1 0 1 0 1 1 1 IPv6 address

All other values shall be interpreted as IPv4 address
in this version of the protocol.

In MS to network direction:
If bits 4,3,2,1 of octet 3 are coded 1 1 1 1
PDP type number value (octet 4)
bits 8 to 1 are spare and shall be coded all 0.

Octet 3, bits 8,7, 6, and 5 are spare and shall be coded all 0.

If PDP type number indicates IPv4, the Address information in octet 5 to octet 8 contains the IPv4 address. Bit 8 of octet 5 represents the most significant bit of the IP address and bit 1 of octet 8 the least significant bit .

If PDP type number indicates IPv6, the Address information in octet 5 to octet 20 contains the IPv6 address. Bit 8 of octet 5 represents the most significant bit of the IP address and bit 1 of octet 20 the least significant bit.

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24.008	CR	212	Current Version:	3.3.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: CN1#12	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)*	(U)SIM		ME	X	UTRAN / Radio		Core Network	X

Source: Motorola **Date:** May 15, 2000

Subject: Reserve one bit in PFI

Work item: QoS

Category: *(only one category shall be marked with an X)*

F	Correction	X	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: It is proposed that the PFI be changed to seven bits to allow one spare bit for possible future enhancements.

Clauses affected:

Other specs affected:

Other 3G core specifications		→ List of CRs:	
Other GSM core specifications	X	→ List of CRs:	04.60, 08.18
MS test specifications		→ List of CRs:	
BSS test specifications		→ List of CRs:	
O&M specifications		→ List of CRs:	

Other comments:

help.doc

<--------- double-click here for help and instructions on how to create a CR.

10.5.6.11 Packet Flow Identifier

The *Packet Flow Identifier (PFI)* information element indicates the Packet Flow Identifier for a Packet Flow Context.

The *Packet Flow Identifier* is a a type 4 information element with 3 octets length.

The *Packet Flow Identifier* information element is coded as shown in figure 10.5.143/TS 24.008 and table 10.5.161/TS 24.008.

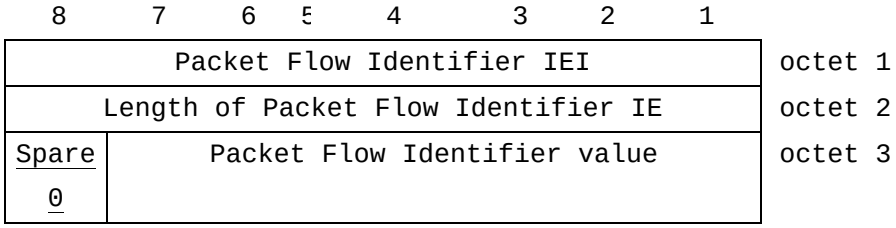

Figure 10.5.143/TS 24.008: *Packet Flow Identifier* information element

Table 10.5.161/TS 24.008: *Packet Flow Identifier* information element

Packet Flow Identifier value (octet 3)	
Bits	
8 7 6 5 4 3 2 1	
0 0 0 0 0 0 0 0	Best Effort
0 0 0 0 0 0 0 1	Signaling
0 0 0 0 0 0 1 0	SMS
0 0 0 0 0 1 1 1 to 0 0 0 0 1 1 1	reserved
0 0 0 1 0 0 0 0 to 1 1 1 1 1 1 1	dynamically assigned

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Document N1-000720
Rev of N1-000614
e.g. for 3GPP use the format TP-99xxx
or for SMG, use the format P-99-xxx

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24.008	**CR**	**187 r1**	Current Version:	3.3.1

GSM (AA.BB) or 3G (AA.BBB) specification number ↑ *↑ CR number as allocated by MCC support team*

For submission to: TSGN#8	for approval	X	strategic		(for SMG use only)
list expected approval meeting # here ↑	for information		non-strategic		

Form: CR cover sheet, version 2 for 3GPP and SMG *The latest version of this form is available from: ftp://ftp.3gpp.org/Information/CR-Form-v2.doc*

Proposed change affects: *(at least one should be marked with an X)* (U)SIM [ ] ME [X] UTRAN / Radio [X] Core Network [X]

Source: Ericsson **Date:** 23.05.00

Subject: Additional SDU error rate value

Work item: QoS enhancement

Category: *(only one category shall be marked with an X)*

F	Correction	[X]	**Release:**	Phase 2	
A	Corresponds to a correction in an earlier release			Release 96	
B	Addition of feature			Release 97	
C	Functional modification of feature			Release 98	
D	Editorial modification			Release 99	X
				Release 00	

Reason for change: Agreed S2-000546 introduced recently a new SDU error ratio of 10 % for the streaming class, which here is proposed updated in 24.008 to be aligned.

Clauses affected: 10.5.6.5

Other specs affected:

Other 3G core specifications	[ ]	→ List of CRs:
Other GSM core specifications	[ ]	→ List of CRs:
MS test specifications	[ ]	→ List of CRs:
BSS test specifications	[ ]	→ List of CRs:
O&M specifications	[ ]	→ List of CRs:

Other comments:

<--------- double-click here for help and instructions on how to create a CR.

10.5.6.5 Quality of service

The purpose of the *quality of service* information element is to specify the QoS parameters for a PDP context.

The QoS IE is defined to allow backward compatibility to earlier version of Session Management Protocol.

The *quality of service* is a type 4 information element with a length of 13octets.

The *quality of service* information element is coded as shown in figure 10.5.138/TS 24.008 and table 10.5.156/TS 24.008.

8	7	6	5	4	3	2	1	
Quality of service IEI								octet 1
Length of quality of service IE								Octet 2
0 spare	0 spare	Delay class			Reliability class			octet 3
Peak throughput				0 spare	Precedence class			octet 4
0 spare	0 spare	0 spare	Mean throughput					octet 5
Traffic Class			Delivery order		Delivery of erroneous SDU			Octet 6
Maximum SDU size								Octet 7
Maximum bit rate for uplink								Octet 8
Maximum bit rate for downlink								Octet 9
Residual BER				SDU error ratio				Octet 10
Transfer delay						Traffic Handling priority		Octet 11
Guaranteed bit rate for uplink								Octet 12
Guaranteed bit rate for downlink								Octet 13

Figure 10.5.138/TS 24.008: *Quality of service* information element

Table 10.5.156/TS 24.008: *Quality of service* information element

Reliability class, octet 3 (see TS 23.107)
Bits
3 2 1
In MS to network direction:
0 0 0 Subscribed reliability class
In network to MS direction:
0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 1 Acknowledged GTP, LLC, and RLC; Protected data
0 1 0 Unacknowledged GTP; Acknowledged LLC and RLC, Protected data
0 1 1 Unacknowledged GTP and LLC; Acknowledged RLC, Protected data
1 0 0 Unacknowledged GTP, LLC, and RLC, Protected data
1 0 1 Unacknowledged GTP, LLC, and RLC, Unprotected data
1 1 1 Reserved

All other values are interpreted as *Unacknowledged GTP and LLC; Acknowledged RLC, Protected data* in this version of the protocol.

Delay class, octet 3 (see TS 22.060 and TS 23.107)
Bits
6 5 4
In MS to network direction:
0 0 0 Subscribed delay class
In network to MS direction:
0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 1 Delay class 1
0 1 0 Delay class 2
0 1 1 Delay class 3
1 0 0 Delay class 4 (best effort)
1 1 1 Reserved

All other values are interpreted as *Delay class 4 (best effort)* in this version of the protocol.
Bit 7 and 8 of octet 3 are spare and shall be coded all 0.
Precedence class, octet 4 (see TS 23.107)
Bits
3 2 1
In MS to network direction:
0 0 0 Subscribed precedence
In network to MS direction:
0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 1 High priority
0 1 0 Normal priority
0 1 1 Low priority
1 1 1 Reserved

All other values are interpreted as *Normal priority* in this version of the protocol.

Bit 4 of octet 4 is spare and shall be coded as 0.

Peak throughput, octet 4 (see TS 23.107)
Bits
8 7 6 5
In MS to network direction:
0 0 0 0 Subscribed peak throughput
In network to MS direction:
0 0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 0 1 Up to 1 000 octet/s
0 0 1 0 Up to 2 000 octet/s
0 0 1 1 Up to 4 000 octet/s
0 1 0 0 Up to 8 000 octet/s
0 1 0 1 Up to 16 000 octet/s
0 1 1 0 Up to 32 000 octet/s
0 1 1 1 Up to 64 000 octet/s
1 0 0 0 Up to 128 000 octet/s
1 0 0 1 Up to 256 000 octet/s
1 1 1 1 Reserved

All other values are interpreted as *Up to 1 000 octet/s* in this version of the protocol.
Mean throughput, octet 5 (see TS 23.107)
Bits
5 4 3 2 1

In MS to network direction:
0 0 0 0 0 Subscribed mean throughput
In network to MS direction:
0 0 0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 0 0 1 100 octet/h
0 0 0 1 0 200 octet/h
0 0 0 1 1 500 octet/h
0 0 1 0 0 1 000 octet/h
0 0 1 0 1 2 000 octet/h
0 0 1 1 0 5 000 octet/h
0 0 1 1 1 10 000 octet/h
0 1 0 0 0 20 000 octet/h
0 1 0 0 1 50 000 octet/h
0 1 0 1 0 100 000 octet/h
0 1 0 1 1 200 000 octet/h
0 1 1 0 0 500 000 octet/h
0 1 1 0 1 1 000 000 octet/h
0 1 1 1 0 2 000 000 octet/h
0 1 1 1 1 5 000 000 octet/h
1 0 0 0 0 10 000 000 octet/h
1 0 0 0 1 20 000 000 octet/h
1 0 0 1 0 50 000 000 octet/h
1 1 1 1 0 Reserved
1 1 1 1 1 Best effort
The value Best effort indicates that throughput shall be made available to the MS on a per need and availability basis. All other values are interpreted as *Best effort* in this version of the protocol.

Bits 8 to 6 of octet 5 are spare and shall be coded all 0.

Delivery of erroneous SDUs, octet 6 (see TS 23.107)
Bits
3 2 1
In MS to network direction:
0 0 0 Subscribed delivery of erroneous SDUs
In network to MS direction:
0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 1 No detect ('-')
0 1 0 Erroneous SDUs are delivered ('yes')
0 1 1 Erroneous SDUs are not delivered ('no')
1 1 1 Reserved

The network shall map all other values not explicitly defined onto one of the values defined in this version of the protocol. The network shall return a negotiated value which is explicitly defined in this version of this protocol.

The MS shall consider all other values as reserved.

Delivery order, octet 6 (see TS 23.107)
Bits
5 4 3
In MS to network direction:
0 0 Subscribed delivery order
In network to MS direction:
0 0 Reserved
In MS to network direction and in network to MS direction :
0 1 With delivery order ('yes')
1 0 Without delivery order ('no')
1 1 Reserved

Traffic class, octet 6 (see TS 23.107)
Bits
8 7 6
In MS to network direction:

0 0 0 Subscribed traffic class
In network to MS direction:
0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 1 Conversational class
0 1 0 Streaming class
0 1 1 Interactive class
1 0 0 Background class
1 1 1 Reserved

The network shall map all other values not explicitly defined onto one of the values defined in this version of the protocol. The network shall return a negotiated value which is explicitly defined in this version of this protocol.

The MS shall consider all other values as reserved.

Maximum SDU size, octet 7 (see TS 23.107)
~~The Maximum SDU size value is binary coded in 8 bits, using a granularity of 10 octets.~~
In MS to network direction:
00000000 Subscribed maximum SDU size
11111111 Reserved
In network to MS direction:
00000000 Reserved
11111111 Reserved
In MS to network direction and in network to MS direction :

For values in the range 00000001 to 10010110 the Maximum SDU size value is binary coded in 8 bits, using a granularity of 10 octets, giving a range of values from 10 octets to 1500 octets.
Values above 10010110 are as below:
10010111 1502 octets
10011000 1510 octets
10011001 1520 octets

The network shall map all other values not explicitly defined onto one of the values defined in this version of the protocol. The network shall return a negotiated value which is explicitly defined in this version of this protocol.

The MS shall consider all other values as reserved.

Maximum bit rate for uplink, octet 8
Bits
8 7 6 5 4 3 2 1
In MS to network direction:
0 0 0 0 0 0 0 0 Subscribed maximum bit rate for uplink
In network to MS direction:
0 0 0 0 0 0 0 0 Reserved
In MS to network direction and in network to MS direction :
0 0 0 0 0 0 0 1 The maximum bit rate is binary coded in 8 bits, using a granularity of 1 kbps
0 0 1 1 1 1 1 1 giving a range of values from 1 kbps to 63 kbps in 1 kbps increments.

0 1 0 0 0 0 0 0 The maximum bit rate is 64 kbps + ((the binary coded value in 8 bits –01000000) * 8 kbps)
0 1 1 1 1 1 1 1 giving a range of values from 64 kbps to 564 kbps in 8 kbps increments.

1 0 0 0 0 0 0 0 The maximum bit rate is 576 kbps + ((the binary coded value in 8 bits –10000000) * 64 kbps)
1 1 1 1 1 1 1 0 giving a range of values from 576 kbps to 8640 kbps in 64 kbps increments.

1 1 1 1 1 1 1 1 Reserved

Maximum bit rate for downlink, octet 9 (see TS 23.107)

Coding is identical to that of Maximum bit rate for uplink.

Residual Bit Error Rate (BER), octet 10 (see TS 23.107)
Bits
8 7 6 5
In MS to network direction:
0 0 0 0 Subscribed residual BER
In network to MS direction:
0 0 0 0 Reserved
In MS to network direction and in network to MS direction :

The Residual BER value consists of 4 bits. The ranges from $5*10^{-2}$ to $6*10^{-8}$. 4.

0 0 0 1	$5*10^{-2}$
0 0 1 0	$1*10^{-2}$
0 0 1 1	$5*10^{-3}$
0 1 0 0	$4*10^{-3}$
0 1 0 1	$1*10^{-3}$
0 1 1 0	$1*10^{-4}$
0 1 1 1	$1*10^{-5}$
1 0 0 0	$1*10^{-6}$
1 0 0 1	$6*10^{-8}$
1 1 1 1	Reserved

The network shall map all other values not explicitly defined onto one of the values defined in this version of the protocol. The network shall return a negotiated value which is explicitly defined in this version of the protocol.

The MS shall consider all other values as reserved.

SDU error ratio, octet 10 (see TS 23.107)
Bits
4 3 2 1
In MS to network direction:
0 0 0 0 Subscribed SDU error ratio
In network to MS direction:
0 0 0 0 Reserved
In MS to network direction and in network to MS direction :
The SDU error ratio value consists of 4 bits. The range is from $1*10^{-12}$ to $1*10^{-6}$.

0 0 0 1	$1*10^{-2}$
0 0 1 0	$7*10^{-3}$
0 0 1 1	$1*10^{-3}$
0 1 0 0	$1*10^{-4}$
0 1 0 1	$1*10^{-5}$
0 1 1 0	$1*10^{-6}$
0 1 1 1	$1*10^{-1}$
1 1 1 1	Reserved

The network shall map all other values not explicitly defined onto one of the values defined in this version of the protocol. The network shall return a negotiated value which is explicitly defined in this version of the protocol.

The MS shall consider all other values as reserved.

Traffic handling priority, octet 11 (see TS 23.107)
Bits
2 1
In MS to network direction:
0 0 Subscribed traffic handling priority
In network to MS direction:
0 0 Reserved
In MS to network direction and in network to MS direction :
0 1 Priority level 1
1 0 Priority level 2
1 1 Priority level 3

The Traffic handling priority value is ignored if the Traffic Class is Conversation class, Streaming class or Background class.

Transfer delay, octet 11 (See TS 23.107)
Bits
8 7 6 5 4 3

In MS to network direction:
0 0 0 0 0 0 Subscribed transfer delay
In network to MS direction:
0 0 0 0 0 0 Reserved
In MS to network direction and in network to MS direction :

0 0 0 0 0 1 The Transfer delay is binary coded in 6 bits, using a granularity of 10 ms

0 0 1 1 1 1 giving a range of values from 10 ms to 150 ms in 10 ms increments

0 1 0 0 0 0 The transfer delay is 200 ms + ((the binary coded value in 6 bits – 010000) * 50 ms)
0 1 1 1 1 1 giving a range of values from 200 ms to 950 ms in 50ms increments

1 0 0 0 0 0 The transfer delay is 1000 ms + ((the binary coded value in 6 bits – 100000) * 100 ms)
1 1 1 1 1 0 giving a range of values from 1000 ms to 4100 ms in 100ms increments

1 1 1 1 1 1 Reserved

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The Transfer delay value is ignored if the Traffic Class is Interactive class or Background class.
Guaranteed bit rate for uplink, octet 12 (See TS 23.107)

Coding is identical to that of Maximum bit rate for uplink.

The Guaranteed bit rate for uplink value is ignored if the Traffic Class is Interactive class or Background class.
Guaranteed bit rate for downlink, octet 13(See TS 23.107)

Coding is identical to that of Maximum bit rate for uplink.

The Guaranteed bit rate for downlink value is ignored if the Traffic Class is Interactive class or Background class.