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Contents

Foreword

This Technical Specification has been produced by the 3GPP.

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of this TS, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater Indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the specification;

Introduction

The present document introduces the features for Common Objects to be used for Generic User Profile (GUP) data. The Common Objects within this Specification is a repository of the various types of data objects (e.g. Datatypes, Elements, Profile Components, Profile Group Components and Instances) defined by the GUP design process and described herein, for the purpose of avoiding duplicate and/or conflicting specifications of the same data by differing applications using that data. This common objects fulfills the requirements of the 3GPP Generic User Profile (GUP) Common Objects as described in [10].

GUP provides a means of supporting access to data for ranges of services and functions (e.g. MMS, Presence). The support of users' services and personalization data is intended to result in manipulating common data in a structured manner, and is intended to result in a standardised way of describing and accessing these data structures, utilizing Common objects. The use of Common Objects will help overcome some of the challenges associated with the introduction of sophisticated user terminals with widely varying capabilities, hybrid combinations of mobile network domains, the advent of downloadable applications, and the desire of users to customise potentially complex services to individual preferences and needs.

The present document for Common Objects will capture features that will allow

1. Efficient usage and/or replication of common data.
2. Effective support for management and maintenance of common data.
3. Extensibility to cater for future needs and the easy addition of new features.
4. Coexistence with existing data description methods defined in specifications such as OMA UAProf and SyncML Device Management.

The Process for the addition of new data objects and constructs is described in [12].

1 Scope

This specification serves as a vessel for storing and listing newProfiles, Profile Component Groups, Profile Components, Datatypes, and other constructs for use in 3GPP applications within various specifications, thereby serving as a means to manage the process of adding new entities of these types

The present document defines the stage three description to the 3GPP Generic User Profile (GUP) Common Objects. This document serves as a vessel to manage the process for addition of new Datatypes, Profile Group Components, Common Profile Components, and other constructs for use in 3GPP applications within various specifications.

3GPP GUP architecture, storage, distribution, ownership, etc are included in [11] and [12].

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] W3C Recommendation: "Extensible Markup Language (XML) 1.0 (Second Edition)".
http://www.w3.org/TR/2000/REC-xml-20001006

[2] W3C Recommendation: "Namespaces in XML", 2 May 2001.
http://www.w3.org/TR/1999/REC-xml-names-19990114/

[3] W3C Recommendation: "XML Schema Part 0: Primer", 2 May 2001.
http://www.w3.org/TR/2001/REC-xmlschema-0-20010502/

[4] W3C Recommendation: "XML Schema Part 1: Structures", 2 May 2001.
http://www.w3.org/TR/2001/REC-xmlschema-1-20010502/

[5] W3C Recommendation: "XML Schema Part 2: Datatypes", 2 May 2001.
http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/

[6] W3C Recommendation: "XML Path Language (XPath) Version 1.0", 16 November 1999.
http://www.w3.org/TR/2001/REC-xmlschema-2-20010502/

[7] W3C Candidate Recommendation: "XML Pointer Language (XPointer) Version 1.0", 11 September 2001.
http://www.w3.org/TR/1999/REC-xpath-19991116

[8] ISO (International Organization for Standardization): "ISO 11404, Language-independent Datatypes.

[9] W3C Recommendation: "XSL Transformations (XSLT) Version 1.0", 16 November 1999.
http://www.w3.org/TR/1999/REC-xslt-19991116

[10] 3GPP TS 22.240: "Stage 1 Service Requirement for the 3GPP Generic User Profile (GUP)"

[11] 3GPP TS 23.240: "Stage 2 3GPP Generic User Profile - Architecture"

12] 3GPP TS 23.241: "Stage 2 3GPP Generic User Profile – Data Description Method (DDM)"

3 Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

The terms "GUP" and "Profile" are synonymous within this Specification.

3GPP Generic User Profile (GUP): The 3GPP Generic User Profile the collection of user related data which affects the way in which an individual user experiences services and which may be accessed in a standardised manner as described in this specification. The Generic User Profile is defined using the W3C XML recommendation [1].

Profile Instance – is a physical representation of a Profile, and is a collection of Profile Component Instances and Profile Component Group Instances. For every user there is exactly one Profile Instance which is regarded as the Master. Additional copies containing the same data are allowed.

Profile Component Group: A pre-defined set of Profile Components and/or other Profile Component Groups closely related to each other. One or more Profile Component Groups can be collected in a Profile Instance.

Profile Component Group Instance: A Profile Component Group Instance is a physical representation of a Profile Component Group. To one Profile Component Group (logical) corresponds one Profile Component Group Instance which is regarded as the Master, and one or more instance copies, i.e. physical copies.

Profile Component (logical): A Profile Component is logically an individual part of the Generic User Profile.

Profile Component Instance (physical): A Profile Component Instance is a physical representation of a Profile Component. To one Profile Component (logical) corresponds one Profile Component Instance which is regarded as the Master and one or more component instance copies, i.e. physical copies. Component instances may be located in the Home Network, in the Value Added Service Provider Environment and/or the User Equipment.

Profile Data Element: the indivisible unit of Generic User Profile information.

GUP Information Model: A method describing how to define data structure, the way data elements are defined and the relationship to each other. The Information Model is describing the concept of Generic User Profile

Data Description Method (DDM): A method describing how to define the data contained in the Generic User Profile. The description is defined using the W3 XML Schemas recommendations [5], [6].

Master Instance: Among the instances (physical) associated with a Profile, Profile Component Group or Profile Component (logical), one of them is tagged with the role of "master instance". The master instance is responsible for the correct value of the corresponding Profile component.

Datatype Definition Method (DtDM): A method describing how to define the new datatypes contained in the Generic User Profile, including an initial set of built-in datatypes.

Data Payload: Is the useful data in Profile Components. It consists of a number of Attributes carrying the data values.

3.2 Abbreviations

For the purposes of the present document, the following abbreviations apply:

GUP	Generic User Profile
DDM	Data Description Method
DtDM	Datatype Definition Method

5 Collection of GUP Common Datatypes

Common Datatypes to be used by different services including 3rd part services and OAM&P services when found useful (e.g. for user profiles in HSS).

6 Collection of GUP Common Data Elements

Common Data Elements to be used by different services including 3rd part services and OAM&P services when found useful.

[tbd]

7 Collection of GUP Common Profile Components

Common Profile Components to be used by different services including 3rd part services and OAM&P services when found useful.

[tbd]

8 Collection of GUP Common Profile Component Groups

Common Profile Component Groups to be used by different services including 3rd part services and OAM&P services when found useful.

[tbd]

Annex A (Normative)

Generic User Profile Components

Annex A1 Datatypes

Annex A2 Group Components

Annex A3 Data Elements

Annex B (Informative)

Parameters for Component Construction

This Annex B is currently incomplete, and is inserted here only for the purpose of further development.

Annex B1 GPRS Parameters

Parameter Requirements	Data Description	Generated Documentation	Generated XML Schema



prsDatatype_dt.xm prsDatatype_dt.htm prsDatatype_dt.xsd

GUP GPRS and CS Parameters

(Ed Note: Updates 24.241 with T2-020915 instead of UP-010091. The above 3 docs associated with UP-010091 need to be updated and inserted here)

[Please note that these files are included here for information only. The final structure (i.e., to include the object files within this specification or to reference them as external specifications) has not been decided.

Please note, also, that these are very early, representative drafts. More work must be done by experts on GPRS prior to these being used by developers.]

Title: GPRS and CS attributes

1. Introduction

The first draft compiling the **GPRS and CS attributes** required for Datacom configuration in the UE are given and described together with the required **datatypes**.

Once these simple datatypes are defined, the more complex data architecture shall be defined, with the relations among them.

1.1 Attributes definition

For each defined attribute, along the document, the following information is given:

ID	Each attribute is given an unique identity which can be used to reference to the attribute
Label	The label is a short text or title used to "label" the attribute in user interfaces.
Description	This is a description of the attribute.
Default field name	The default field name used when the attribute is used in a composite datatype
Name of Datatype	Reference to the Datatype for the value of the attribute
References to	List of reference where the attribute is described

definitions and descriptions	

.

1.2 Datatypes definition

For each defined Datatype, along the document, the following information is given:

Datatype name	The datatype is given an unique identity
Label	The label is a short text or title used to “label” the datatype in user interfaces
Description	A description of the datatype
References to definitions and descriptions	List of reference where the datatype is described
References to usage	***Example of attributes where the datatype is used***
DDM Definition	The definition of the datatype according to the Data Description Method

2. Network Access: PS Configuration Attributes/Datatypes

2.1 PS: Local Address

2.1.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	LOCAL-ADDR (0 or 1 entries) If this parameter is provided, it defines the local address of the WAP Client according to the format specified by the LOCAL-ADDRTYPE parameter. The type of address in the LOCAL-ADDR field is defined by the LOCAL-ADDRTYPE parameter. **LOCAL-ADDRTYPE Content of LOCAL-ADDR** IPV4 An IPv4 address [RFC791] represented in decimal format with dots as delimiters IPV6 An IPv6 address [RFC2373] represented as hexadecimal numbers with colons as delimiters or as a combination of hexadecimal and decimal numbers with dots and colons as delimiters
AT Commands 27.007	<PDP_address>: a string parameter that identifies the MT in the address space applicable to the PDP. If the value is null or omitted, then a value may be provided by the TE during the PDP startup procedure or, failing that, a dynamic address will be requested. The read form of the command will continue to return the null string even if an address has been allocated during the PDP startup procedure. The allocated address may be read using the +CGPADDR command
CN Protocol 24.008	**Address information** Packet data protocol address The purpose of the *packet data protocol address* information element is to identify an address associated with a PDP […] 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.

2.1.2 Attribute definition

ID	PDP_local_Address
Label	PDP Address
Description	Local address associated with a PDP
Default field name	PDP_local_Address
Name of Datatype	Address_datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008

2.1.3 Address: Datatype definition

Datatype name	Address_datatype
Label	Address datatype
Description	Value: which contains the address value, and will be one of the following types: IPv4_address_datatype IPv6_ address_datatype E164_ address_datatype ***ALPHA_ address_datatype*** APN_ address_datatype SCODE_ address_datatype TETRA-ITSI_ address_datatype MAN_ address_datatype
References to definitions and descriptions	TBD
References to usage	PDP_local_Address
DDM Definition	TBD

2.1.4 IPv4 Address: Datatype definition

Datatype name	IPv4_Address_datatype
Label	IPv4 Address datatype
Description	
References to definitions and descriptions	RFC791: Addresses are fixed length of four octets (32 bits). An address begins with a network number, followed by local address (called the"rest" field). There are three formats or classes of internet addresses: in class a, the high order bit is zero, the next 7 bits are the network, and the last

	24 bits are the local address; in class b, the high order two bits are one-zero, the next 14 bits are the network and the last 16 bits are the local address; in class c,the high order three bits are one-one-zero, the next 21 bits are the network and the last 8 bits are the local address.
References to usage	
DDM Definition	TBD

2.1.5 IPv6 Address: Datatype definition

Datatype name	IPv6_Address_datatype
Label	IPv6 Address datatype
Description	
References to definitions and descriptions	RFC2373
References to usage	
DDM Definition	TBD

2.1.6 E164 Address: Datatype definition

Datatype name	E164_Address_datatype
Label	E164 Address datatype
Description	
References to definitions and descriptions	TBD
References to usage	
DDM Definition	TBD

2.1.7 ALPHA Address: Datatype definition

Datatype name	ALPHA_Address_datatype
Label	ALPHA Address datatype
Description	string
References to definitions and descriptions	TBD
References to usage	
DDM Definition	TBD

2.1.8 APN Address: Datatype definition

Datatype name	APN_address_datatype
Label	APN address datatype
Description	TBD
References to definitions and descriptions	TBD
References to usage	TBD
DDM Definition	TBD

2.1.9 SCODE_datatype Address: Datatype definition

Datatype name	SCODE_address_datatype
Label	SCODE address datatype
Description	SCODE_datatype: A USSD service code as defined in [GENFORM]
References to definitions and descriptions	TBD
References to usage	WAP gateway address Address
DDM Definition	TBD

2.1.10 TETRA-ITSI Address: Datatype definition

Datatype name	TETRA-ITSI_address_datatype
Label	TETRA-ITSI address datatype
Description	TETRA-ITSI_datatype: A TETRA SDS address with digits in decimal format [WAPWDP]
References to definitions and descriptions	TBD
References to usage	
DDM Definition	TBD

2.1.11 MAN Address: Datatype definition

Datatype name	MAN_address_datatype
Label	MAN address datatype
Description	A Mobitex MAN address with digits in decimal format [WAPWDP]
References to definitions and	TBD

descriptions	
References to usage	
DDM Definition	TBD

2.2 PS: Data compression

2.2.1 Background information

References	Definition and description
AT Commands 27.007	<d_comp>: a numeric parameter that controls PDP data compression (applicable for SNDCP only) (refer 3GPP TS 44.065 [61]) 0 - off (default if value is omitted) 1 - on (manufacturer preferred compression) 2 - V.42bis 3 - V.44 Other values are reserved.

2.2.2 Attribute definition

ID	PDP_Data_Compression
Label	PDP Data Compression
Description	PDP data compression (applicable for SNDCP only) Possible values: off on (manufacturer preferred compression) V.42bis V.44
Default field name	TBD
Name of Datatype	data_compression datatype
References to definitions and descriptions	- AT Command TS 27.007

2.2.3 data_compression: Datatype definition

Datatype name	data_compression_datatype
Label	Data compression datatype
Description	Possible values: off (default if value is omitted) on (manufacturer preferred compression) V.42bis V.44
References to definitions and descriptions	TBD
References to usage	Data Compression
DDM Definition	TBD

2.3 PS: Header compression

2.3.1 Background information

References	Definition and description
AT Commands 27.007	<h_comp>: a numeric parameter that controls PDP header compression (refer 3GPP TS 44.065 [61] and 3GPP TS 25.323 [62]) 0 - off (default if value is omitted) 1 - on (manufacturer preferred compression) 2 - RFC1144 (applicable for SNDCP only) 3 - RFC2507 4 - RFC3095 (applicable for PDCP only) Other values are reserved

2.3.2 Attribute definition

ID	Header_compression
Label	Header compression
Description	TBD
Default field name	TBD
Name of Datatype	Header compression datatype
References to definitions and descriptions	- AT Command TS 27.007

2.3.3 Header compression: Datatype definition

Datatype name	Header_compression_ datatype
Label	Header compression datatype
Description	Possible values: off (default if value is omitted) on (manufacturer preferred compression) RFC1144 (applicable for SNDCP only) RFC2507 RFC3095 (applicable for PDCP only)
References to definitions and descriptions	TBD
References to usage	Header compression
DDM Definition	TBD

2.4 PS: Packet filter[x]

2.4.1 Background information

References	Definition and description
AT Commands 27.007	<packet filter identifier>: Numeric parameter, value range from 1 to

	8
CN Protocol 24.008	**Packet filter identifier** Table 10.5.162/3GPP TS 24.008: *Traffic flow template* information element The *packet filter identifier* field is used to identify each packet filter in a TFT. Since the maximum number of packet filters in a TFT is 8, only the least significant 3 bits are used. Bits 8 through 4 are spare bits
GPRS 23.060	**Traffic Flow Template** A TFT consists of from one and up to eight packet filters, each identified by a unique packet filter identifier. A packet filter also has an evaluation precedence index that is unique within all TFTs associated with the PDP contexts that share the same PDP address. This evaluation precedence index is in the range of 255 (lowest evaluation precedence) down to 0 (highest evaluation precedence). The MS manages packet filter identifiers and their evaluation precedence indexes, and creates the packet filter contents. A TFT is always associated with a PDP context during the Secondary PDP Context Activation procedure. A TFT may be added to a PDP context that was created with the PDP Context Activation Procedure by means of the MS-Initiated PDP Context Modification procedure. By means of the MS-Initiated PDP Context Modification procedure any TFT can be modified. A PDP context can never have more than one TFT associated with it. **Rules for Operations on TFTs** The MS shall use the TFT and packet filter identifiers in each operation for handling of the TFTs and packet filters. When the MS creates a new TFT, or modifies an existing TFT, it has to include at least one valid packet filter. If no valid packet filter is included in the newly created or modified TFT, the procedure used for the creation or modification of the TFT shall fail, and an error code shall be returned to the MS. During the modification of a TFT, one or more existing packet filters can be modified or deleted, or a new packet filter can be created. In order to modify an existing packet filter, the new values for the packet filter attributes along with the packet filter identifier is sent from the MS to the GGSN. The MS may also modify the evaluation precedence index only of one or several packet filters by means of the MS-Initiated PDP Context Modification procedure. A TFT is deleted when the associated PDP context is deactivated. A TFT can also be deleted by means of the MS-Initiated PDP Context Modification procedure. At any time there may exist only one PDP context with no associated TFT amongst all the PDP contexts associated with one PDP address. An attempt by the MS to delete a TFT, which would violate this rule, shall be rejected by the GGSN. **Packet Filter Attributes** Each valid packet filter contains a unique identifier within a given TFT, an evaluation precedence index that is unique within all TFTs for one PDP address, and at least one of the following attributes: - Source Address and Subnet Mask. - Protocol Number (IPv4) / Next Header (IPv6). - Destination Port Range. - Source Port Range. - IPSec Security Parameter Index (SPI). - Type of Service (TOS) (IPv4) / Traffic class (IPv6) and Mask. - Flow Label (IPv6). Some of the above-listed attributes may coexist in a packet filter while others mutually exclude each other. In table 12 below, the possible combinations are shown. Only those attributes marked with an "X" may be specified for a single packet filter. All marked attributes may be specified, but at least one shall be specified. If the parameters of the header of a received PDP PDU match all specified attribute values in a packet filter, then it is considered that a match is found for this packet filter. In this case, the evaluation procedure is aborted. Other packet

filters in increasing order of their evaluation precedence index are evaluated until such match is found.
There may be potential conflicts if attribute values are combined in such a way that the defined filter can never achieve a match to a valid IP packet header. However, the determination of such conflicts is outside the scope of GPRS standardization.

Table 12: Valid Packet Filter Attribute Combinations

Valid combination types		
Packet filter attribute	**I**	**II**	**III**
Source Address and Subnet Mask	X	X	X
Protocol Number (IPv4) / Next Header (IPv6)	X	X	
Destination Port Range	X		
Source Port Range	X		
IPSec SPI	X		
TOS (IPv4) / Traffic Class (IPv6) and Mask	X	X	X
Flow Label (IPv6)	X		

Source Address and Subnet Mask

The Source Address and Subnet Mask attribute of a valid packet filter shall contain an IPv4 or IPv6 address along with a subnet mask.
As an example, the source address and subnet mask attribute to classify packets coming from all hosts within the IPv4 domain A.B.C.0/24 is {A.B.C.0 [255.255.255.0]}.

Protocol Number / Next Header

The Protocol Number / Next Header attribute of a valid packet filter shall contain either an IPv4 Protocol Number or an IPv6 Next Header value. The value range is

from 0 to 255.

Port Numbers

The Destination Port Range and Source Port Range attributes of a valid packet filter shall each contain one port number, or a range of port numbers. Port numbers range between 0 and 65 535.

IPSec Security Parameter Index

The IPSec SPI attribute of a valid packet filter shall contain one SPI which is a 32-bit field.

Type of Service / Traffic Class and Mask

The Type of Service / Traffic Class and Mask attribute of a valid packet filter shall contain either an IPv4 TOS octet or an IPv6 Traffic Class octet along with a mask defining which of the 8 bits should be used for matching.

Flow Label

The Flow Label attribute of a valid packet filter shall contain an IPv6 flow label, which is a 20-bit field.

Example Usage of Packet Filters

Based on the type of traffic or the packet data network QoS capabilities, different types of packet filters can be used to classify a given PDP PDU in order to determine the right PDP context. Some examples are given below.

IPv4 Multi-field Classification

In the case of multi-field classification, the packet filter consists of a number of packet header fields. For example, to classify TCP/IPv4 packets originating from 172.168.8.0/24 destined to port 5 003 at the TE, the following packet filter can be used:

- Packet Filter Identifier = 1;
- IPv4 Source Address = {172.168.8.0 [255.255.255.0]};
- Protocol Number for TCP = 6; and
- Destination Port = 5 003.

IPv4 TOS-based Classification

In the case of TOS-based classification, the packet filter consists of only the TOS octet coding. For example to classify IPv4 packets marked with TOS coding 001010xx, the following packet filter can be used:

- Packet Filter Identifier = 3;
- Type of Service / Traffic Class = 00101000 and Mask = 11111100.

NOTE: The TOS-based classification can always be augmented with the source address attribute if it is known that different source domains use different TOS octet codings for the same traffic class.

IPv4 Multi-field Classification for IPSec Traffic

In the case of multi-field classification of IPSec traffic, the packet filter contains the SPI instead of the port numbers that are not available due to encryption. If IPSec (ESP) was used with an SPI of 0x0F80F000, then the following packet filter can be used:

- Packet Filter Identifier = 4;
- Protocol Number for ESP = 50; and
- SPI = 0x0F80F000.

2.4.2 Attribute definition

ID	TBD
Label	Packet filter [x]
Description	TBD
Default field name	TBD
Name of Datatype	Array of Packet filter datatype: 0 to 8
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008 - GPRS 23.060

2.4.3 Packet filter: Datatype definition

Datatype name	Packet_filter_datatype
Label	Packet filter datatype
Description	Possible values Evaluation precedence: Evaluation_precedence_datatype at least one of these up to 5: IPv4 source address: IPv4_address_datatype IPv6 source address: IPv6_address_datatype Protocol identifier/Next header type Destination port range type Source port range type Security parameter index type Type of service/Traffic class type Flow label type **Valid Packet Filter Attribute Combinations** **Valid combination types** **Packet filter attribute** **I** **II** **III** Source Address and Subnet Mask X X X Protocol Number (IPv4) / Next Header (IPv6) X X Destination Port Range X Source Port Range X IPSec SPI

	X TOS (IPv4) / Traffic Class (IPv6) and Mask X X X Flow Label (IPv6) X
References to definitions and descriptions	TBD
References to usage	Packet filter[x]
DDM Definition	TBD

2.5 PS: Packet filter [x]/IPv4 source address and PS Packet filter [x]/ IPv5 source address

2.5.1 Background information

References	**Definition and description**
AT Commands 27.007	<source address and subnet mask>: Consists of dot-separated numeric (0-255) parameters on the form 'a1.a2.a3.a4.m1.m2.m3.m4', for IPv4 and 'a1.a2.a3.a4.a5.a6.a7.a8.a9.a10.a11.a12.a13.a14.a15.a16. m1.m2.m3.m4.m5.m6.m7.m8.m9.m10.m11.m12.m13.m14.m15.m16', for IPv6.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type

	1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

2.5.2 Attribute definition

ID	IPv4_source_address
Label	IPv4 source address
Description	TBD
Default field name	TBD
Name of Datatype	IPv4_Address_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.5.3 Attribute definition

ID	IPv6_source_address
Label	IPv6 source address
Description	TBD
Default field name	TBD
Name of Datatype	IPv6_Address_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.6 PS: Packet filter [x]/ Protocol identifier-Next header

2.6.1 Background information

References	Definition and description
AT Commands 27.007	<protocol number (ipv4) / next header (ipv6)>: Numeric parameter, value range from 0 to 255.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow

	label.

2.6.2 Attribute definition

ID	Protocol_identifier-Next_header
Label	Protocol identifier-Next header
Description	Specifies the IPv4 protocol identifier or IPv6 next header.
Default field name	TBD
Name of Datatype	Protocol identifier-Next header datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.6.3 Protocol identifier-Next header type: Datatype definition

Datatype name	Protocol_identifier-Next_header_type
Label	Protocol identifier-Next header type
Description	Numeric parameter, value range from 0 to 255. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header
References to definitions and descriptions	TBD
References to usage	Protocol identifier-Next header
DDM Definition	TBD

2.7 PS: Packet filter [x]/ Destination port range

2.7.1 Background information

References	**Definition and description**
AT Commands 27.007	<destination port range>: Consists of dot-separated numeric (0-65535) parameters on the form 'f.t'.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the

	"single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

2.7.2 Attribute definition

ID	Destination_port_range
Label	Destination port range
Description	Destination port range defined between a low and high limit
Default field name	TBD
Name of Datatype	port range datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.7.3 port range type: Datatype definition

Datatype name	Port_range_datatype
Label	port range datatype
Description	Consists of dot-separated numeric (0-65535) parameters on the form 'f.t'. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first.
References to definitions and descriptions	TBD
References to usage	Destination port range
DDM Definition	TBD

2.8 PS: Packet filter [x]/ source port range

2.8.1 Background information

References	**Definition and description**
AT Commands 27.007	<source port range>:Consists of dot-separated numeric (0-65535) parameters on the form 'f.t'.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number.

	For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

2.8.2 Attribute definition

ID	Source_port_range
Label	source port range
Description	Source port range defined between a low and high limit
Default field name	TBD
Name of Datatype	port range datatype
References to definitions and descriptions	AT Command TS 27.007 CN Protocol 24.008

2.9 PS: Packet filter [x]/ Security parameter index

2.9.1 Background information

References	**Definition and description**
AT Commands 27.007	<ipsec security parameter index (spi)>: Hexadecimal parameter, value range from 00000000 to FFFFFFFF.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type

	0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

2.9.2 Attribute definition

ID	Security_parameter_index
Label	Security parameter index
Description	specifies the IPSec security parameter index
Default field name	TBD
Name of Datatype	Security parameter index datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.9.3 Security parameter index: Datatype definition

Datatype name	Security_parameter_index_datatype
Label	Security parameter index datatype
Description	Hexadecimal parameter, value range from 00000000 to FFFFFFFF.
References to definitions and descriptions	TBD
References to usage	Security parameter index
DDM Definition	TBD

2.10 PS: Packet filter [x]/ Type of service-Traffic class

2.10.1 Background information

References	Definition and description
AT Commands 27.007	<type of service (tos) (ipv4) and mask / traffic class (ipv6) and mask>: Dot-separated numeric (0-255) parameters on the form 't.m'.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter. Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first

	octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

2.10.2 Attribute definition

ID	Type_of_service-Traffic_class
Label	Type_of_service-Traffic class
Description	Traffic Class and Traffic Class mask
Default field name	TBD
Name of Datatype	Type of service-Traffic class datatype
References to definitions and descriptions	AT Command TS 27.007 CN Protocol 24.008

2.10.3 Type of service/Traffic class: Datatype definition

Datatype name	Type_of_service-Traffic_class_datatype
Label	Type of service-Traffic class datatype
Description	Dot-separated numeric (0-255) parameters on the form 't.m' one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first.
References to definitions and descriptions	TBD
References to usage	Type of service-Traffic class
DDM Definition	TBD

2.11 PS: Packet filter [x]/ Flow label

7.11.1 Background information

References	**Definition and description**
AT Commands 27.007	<flow label (ipv6)>: Hexadecimal parameter, value range from 00000 to FFFFF. Valid for IPv6 only.
CN Protocol 24.008	**packet filter component type identifier** **packet filter component value** Table 10.5.162/3GPP TS 24.008 (continued): *Traffic flow template* information element The *packet filter contents* field is of variable size and contains a variable number (at least one) of *packet filter components*. Each *packet filter component* shall be encoded as a sequence of a one octet *packet filter component type identifier* and a fixed length *packet filter component value* field. The *packet filter component type identifier* shall be transmitted first. In each packet filter, there shall not be more than one occurrence of each packet filter component type. Among the "IPv4 source address type" and "IPv6 source address type" packet filter components, only one shall be present in one packet filter. Among the "single destination port type" and "destination port range type" packet filter components, only one shall be present in one packet filter. Among the "single source port type" and "source port range type" packet filter components, only one shall be present in one packet filter.

	Packet filter component type identifier Bits 8 7 6 5 4 3 2 1 0 0 0 1 0 0 0 0 IPv4 source address type 0 0 1 0 0 0 0 0 IPv6 source address type 0 0 1 1 0 0 0 0 Protocol identifier/Next header type 0 1 0 0 0 0 0 0 Single destination port type 0 1 0 0 0 0 0 1 Destination port range type 0 1 0 1 0 0 0 0 Single source port type 0 1 0 1 0 0 0 1 Source port range type 0 1 1 0 0 0 0 0 Security parameter index type 0 1 1 1 0 0 0 0 Type of service/Traffic class type 1 0 0 0 0 0 0 0 Flow label type All other values are reserved. For "IPv4 source address type", the *packet filter component value* field shall be encoded as a sequence of a four octet *IPv4 address* field and a four octet *IPv4 address mask* field. The *IPv4 address* field shall be transmitted first. For "IPv6 source address type", the *packet filter component value* field shall be encoded as a sequence of a sixteen octet *IPv6 address* field and a sixteen octet *IPv6 address mask* field. The *IPv6 address* field shall be transmitted first. For "Protocol identifier/Next header type", the *packet filter component value* field shall be encoded as one octet which specifies the IPv4 protocol identifier or IPv6 next header. For "Single destination port type" and "Single source port type", the *packet filter component value* field shall be encoded as two octet which specifies a port number. For "Destination port range type" and "Source port range type", the *packet filter component value* field shall be encoded as a sequence of a two octet *port range low limit* field and a two octet *port range high limit* field. The *port range low limit* field shall be transmitted first. For "Security parameter index", the *packet filter component value* field shall be encoded as four octet which specifies the IPSec security parameter index. For "Type of service/Traffic class type", the *packet filter component value* field shall be encoded as a sequence of a one octet *Type-of-Service/Traffic Class* field and a one octet *Type-of-Service/Traffic Class mask* field. The *Type-of-Service/Traffic Class* field shall be transmitted first. For "Flow label type", the *packet filter component value* field shall be encoded as three octet which specifies the IPv6 flow label. The bits 8 through 5 of the first octet shall be spare whereas the remaining 20 bits shall contain the IPv6 flow label.

7.11.2 Attribute definition

ID	Flow_label
Label	Flow label
Description	Specifies the IPv6 flow label
Default field name	TBD
Name of Datatype	Flow label datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

7.11.3 Flow label: Datatype definition

Datatype name	Flow_label_datatype
Label	Flow label datatype

Description	Hexadecimal parameter, value range from 00000 to FFFFF. Valid for IPv6 only.
References to definitions and descriptions	TBD
References to usage	Flow label
DDM Definition	TBD

2.12 PS: Packet filter [x]/ packet filter evaluation precedence

2.12.1 Background information

References	Definition and description
AT Commands 27.007	<evaluation precedence index>: Numeric parameter, value range from 0 to 255.
CN Protocol 24.008	**packet filter evaluation precedence** Table 10.5.162/3GPP TS 24.008: *Traffic flow template* information element The *packet filter evaluation precedence* field is used to specify the precedence for the packet filter among all packet filters in all TFTs associated with this PDP address. Higher the value of the *packet filter evaluation precedence* field, lower the precedence of that packet filter is. The first bit in transmission order is the most significant bit.

2.12.2 Attribute definition

ID	Evaluation_precedence
Label	Evaluation precedence
Description	The *packet filter evaluation precedence* field is used to specify the precedence for the packet filter among all packet filters in all TFTs associated with this PDP address. Higher the value of the *packet filter evaluation precedence* field, lower the precedence of that packet filter is
Default field name	TBD
Name of Datatype	Evaluation precedence datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

2.12.3 packet filter evaluation precedence : Datatype definition

Datatype name	Evaluation_precedence_datatype
Label	Evaluation precedence datatype
Description	Numeric parameter, value range from 0 to 255.
References to definitions and descriptions	TBD
References to usage	evaluation precedence
DDM Definition	TBD

3. Network Access: PS 3G QoS Configuration Attributes/Datatypes

3.1 3G QoS: Delivery of erroneous SDUs

3.1.1 Background information

References	Definition and description
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	DELIVERY-ERR-SDU (0 or 1 entries) The DELIVERY-ERR-SDU parameter indicates whether SDUs detected as erroneous shall be delivered or discarded. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Delivery of erroneous SDUs>: a numeric parameter that indicates whether SDUs detected as erroneous shall be delivered or not. 0 - no 1 - yes 2 - no detect 3 - subscribed value Other values are reserved.
CN Protocol 24.008	**Delivery of erroneous SDUs** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Delivery of erroneous SDUs, octet 6 (see 3GPP 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
QoS 23.107	**Delivery of erroneous SDUs (y/n/-)** Definition: Indicates whether SDUs detected as erroneous shall be delivered or discarded. NOTE 2: 'yes' implies that error detection is employed and that erroneous SDUs are delivered together with an error indication, 'no' implies that error detection is employed and that erroneous SDUs are discarded, and '-' implies that SDUs are delivered without considering error detection. *[Purpose: Used to decide whether error detection is needed and whether frames with detected errors shall be forwarded or not.]*

3.1.2 Attribute definition

ID	Delivery_of_erroneous_SDU
Label	Delivery of erroneous SDU

Description	Indicates whether SDUs detected as erroneous shall be delivered or discarded.
Default field name	TBD
Name of Datatype	Delivery of erroneous SDU datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.1.3 Delivery of erroneous SDUs: Datatype definition

Datatype name	Delivery_of_erroneous_SDU_datatype
Label	Delivery of erroneous SDU datatype
Description	Possible values: Subscribed delivery of erroneous SDUs No detect ('-') Erroneous SDUs are delivered ('yes') Erroneous SDUs are not delivered ('no')
References to definitions and descriptions	TBD
References to usage	Delivery of erroneous SDU
DDM Definition	TBD

3.2 3G QoS: Delivery order

3.2.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	DELIVERY-ORDER (0 or 1 entries) The DELIVERY-ORDER parameter indicates whether the PDP context bearer shall provide in-sequence SDU delivery or not. Values are defined in [3GPP24008] and are represented as hexadecimal numbers. Bits not part of the DELIVERY-ORDER parameter are set to zero, e.g. the value "with delivery order" is represented as 0x08.
AT Commands 27.007	<Delivery order>: a numeric parameter that indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not. 0 - no 1 - yes 2 - subscribed value. Other values are reserved
CN Protocol 24.008	**Delivery order** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Delivery order, octet 6 (see 3GPP 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

QoS 23.107/22.060	Delivery order **Delivery order (y/n)** Definition: indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not. *[Purpose: the attribute is derived from the user protocol (PDP type) and specifies if out-of-sequence SDUs are acceptable or not. This information cannot be extracted from the traffic class. Whether out-of-sequence SDUs are dropped or re-ordered depends on the specified reliability*

3.2.2 Attribute definition

ID	Delivery_order
Label	Delivery order
Description	Indicates whether the UMTS bearer shall provide in-sequence SDU delivery or not
Default field name	TBD
Name of Datatype	Delivery order datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.2.3 Delivery order: Datatype definition

Datatype name	Delivery_order_datatype
Label	Delivery order datatype
Description	Possible values: Subscribed delivery order With delivery order ('yes') Without delivery order ('no')
References to definitions and descriptions	TBD
References to usage	Delivery order
DDM Definition	TBD

3.3 3G QoS: Traffic class

3.3.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	TRAFFIC-CLASS (0 or 1 entries) The TRAFFIC-CLASS defines the type of application for which the PDP context bearer service is optimised. For class descriptions see [3GPP23107] and values are defined in [3GPP24008]. The values are represented as hexadecimal numbers. Bits not part of the TRAFFIC-CLASS parameter are set to zero, e.g. the value "interactive class" is represented as 0x60.

AT Commands 27.007	<Traffic class>: a numeric parameter that indicates the type of application for which the UMTS bearer service is optimised. 0 - conversational 1 - streaming 2 - interactive 3 - background 4 - subscribed value Other values are reserved.
CN Protocol 24.008	**Traffic class** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Traffic class, octet 6 (see 3GPP 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
QoS 23.107/22.060	Traffic class **Traffic class ('conversational', 'streaming', 'interactive', 'background')** Definition: type of application for which the UMTS bearer service is optimised *[Purpose: By including the traffic class itself as an attribute, UMTS can make assumptions about the traffic source and optimise the transport for that traffic type.]*

3.3.2 Attribute definition

ID	Traffic_class
Label	Traffic class
Description	Type of application for which the UMTS bearer service is optimized
Default field name	TBD
Name of Datatype	Traffic class datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.3.3 traffic class: Datatype definition

Datatype name	Traffic_class_datatype
Label	Traffic class datatype
Description	Possible values:

	Subscribed traffic class Conversational class Streaming class Interactive class Background class
References to definitions and descriptions	TBD
References to usage	Traffic class
DDM Definition	TBD

3.4 3G QoS: Maximum SDU size

3.4.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	MAX-SDU-SIZE (0 or 1 entries) The MAX-SDU-SIZE parameter defines the maximum allowed SDU size and is used for admission control and policing. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Maximum SDU size>: a numeric parameter (1,2,3,…) that indicates the maximum allowed SDU size in octets. If the parameter is set to '0' the subscribed value will be requested
CN Protocol 24.008	**Maximum SDU size** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Maximum SDU size, octet 7 (see 3GPP TS 23.107) In MS to network direction: 0 0 0 0 0 0 0 0 Subscribed maximum SDU size 1 1 1 1 1 1 1 1 Reserved In network to MS direction: 0 0 0 0 0 0 0 0 Reserved 1 1 1 1 1 1 1 1 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: 1 0 0 1 0 1 1 1 1502 octets 1 0 0 1 1 0 0 0 1510 octets 1 0 0 1 1 0 0 1 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
QoS 23.107/22.060	**Maximum SDU size (octets)** Definition: the maximum allowed SDU size *[Purpose: The maximum SDU size is used for admission control and policing.]*

3.4.2 Attribute definition

ID	Maximum_SDU_size
Label	Maximum SDU size
Description	The maximum allowed SDU size

Default field name	TBD
Name of Datatype	Maximum SDU size datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.4.3 Maximum SDU size: Datatype definition

Datatype name	Maximum_SDU_size_datatype
Label	Maximum SDU size datatype
Description	Possible values: Subscribed maximum using a granularity of 10 octets, giving a range of values from 10 octets to 1500 octets: 10, 20, 30, …1490, 1500 1502 octets 1510 octets 1520 octets
References to definitions and descriptions	TBD
References to usage	Maximum SDU size
DDM Definition	TBD

3.5 3G QoS: Maximum bit rate for uplink

3.5.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	MAX-BITRATE-UPLINK (0 or 1 entries) The MAX-BITRATE-UPLINK parameter defines the maximum number of bits delivered during a period of time in uplink. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Maximum bitrate UL>: a numeric parameter that indicates the maximum number of kbits/s delivered to UMTS (up-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=…,32, …).
CN Protocol 24.008	**Maximum bit rate for uplink** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element 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 568 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 0kbps
QoS 23.107/22.060	**Maximum bitrate (kbps)** Definition: maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size. The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B. The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions. *[Purpose: Maximum bitrate can be used to make code reservations in the downlink of the radio interface. Its purpose is 1) to limit the delivered bitrate to applications or external networks with such limitations 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs).]*

3.5.2 Attribute definition

ID	Maximum_bit_rate_for_uplink
Label	Maximum bit rate for uplink
Description	Maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time in uplink, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size. The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions
Default field name	TBD
Name of Datatype	Maximum bit rate datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.5.3 Maximum bit rate: Datatype definition

Datatype name	Maximum_bit_rate_datatype
Label	Maximum bit rate datatype
Description	Possible values: - Subscribed maximum bit rate - using a granularity of 1 kbps: giving a range of values from 1 kbps to 63 kbps in 1 kbps increments - The maximum bit rate is 64 kbps + ((the binary coded value in 8 bits –01000000) * 8 kbps) - giving a range of values from 64 kbps to 568 kbps in 8 kbps increments

	- The maximum bit rate is 576 kbps + ((the binary coded value in 8 bits – 10000000) * 64 kbps) - giving a range of values from 576 kbps to 8640 kbps in 64 kbps increments - 0kbps
References to definitions and descriptions	TBD
References to usage	Maximum bit rate for uplink Maximum bit rate for downlink
DDM Definition	TBD

3.6 3G QoS: Maximum bit rate for downlink

3.6.1 Background information

References	Definition and description
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	MAX-BITRATE-DNLINK (0 or 1 entries) The MAX-BITRATE-DNLINK parameter defines the maximum number of bits delivered during a period of time in downlink. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Maximum bitrate DL>: a numeric parameter that indicates the maximum number of kbits/s delivered by UMTS (down-link traffic) at a SAP. As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=…,32, …). If the parameter is set to '0' the subscribed value will be requested.
CN Protocol 24.008	**Maximum bit rate for downlink** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Maximum bit rate for downlink, octet 9 (see 3GPP TS 23.107) Coding is identical to that of Maximum bit rate for uplink. In this version of the protocol, for messages specified in the present document, the sending entity shall not request 0 kbps for both the Maximum bitrate for downlink and the Maximum bitrate for uplink at the same time. Any entity receiving a request for 0 kbps in both the Maximum bitrate for downlink and the Maximum bitrate for uplink shall consider that as a syntactical error (see clause 8).
QoS 23.107/22.060	**Maximum bitrate (kbps)** Definition: maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size. The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B. The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions. *[Purpose: Maximum bitrate can be used to make code reservations in the downlink of the radio interface. Its purpose is 1) to limit the delivered bitrate to applications or external networks with such limitations 2) to allow maximum wanted user bitrate to be defined for applications able to operate with different rates (e.g. applications with adapting codecs).]*

3.6.2 Attribute definition

ID	Maximum_bit_rate_for_downlink
Label	Maximum bit rate for downlink
Description	Maximum number of bits delivered by UMTS and to UMTS at a SAP within a period of time in downlink, divided by the duration of the period. The traffic is conformant with Maximum bitrate as long as it follows a token bucket algorithm where token rate equals Maximum bitrate and bucket size equals Maximum SDU size. The Maximum bitrate is the upper limit a user or application can accept or provide. All UMTS bearer service attributes may be fulfilled for traffic up to the Maximum bitrate depending on the network conditions.
Default field name	TBD
Name of Datatype	Maximum bit rate datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.7 3G QoS: Residual Bit Error Rate

3.7.1 Background information

References	Definition and description
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	RESIDUAL-BER (0 or 1 entries) The RESIDUAL-BER parameter indicates the undetected bit error ratio in the delivered SDUs. Values are defined in [3GPP24008] and are represented as hexadecimal numbers. Bits not part of the RESIDUAL-BER parameter are set to zero, e.g. the value "1* 10 -5 " is represented as 0x70.
AT Commands 27.007	<Residual bit error ratio>: a string parameter that indicates the target value for the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. The value is specified as 'mEe'. As an example a target residual bit error ratio of $5 \cdot 10^{-3}$ would be specified as '5E3' (e.g. AT+CGEQREQ=…,"5E3",…). '0E0' means subscribed value
CN Protocol 24.008	**Residual Bit Error Rate** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Residual Bit Error Rate (BER), octet 10 (see 3GPP 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 range is from $5*10^{-2}$ to $6*10^{-8}$. 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
QoS 23.107/22.060	**Residual bit error ratio** Definition: Indicates the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs. *[Purpose: Used to configure radio interface protocols, algorithms and error detection coding.]*

3.7.2 Attribute definition

ID	Residual_Bit_Error_Rate
Label	Residual Bit Error Rate
Description	Indicates the undetected bit error ratio in the delivered SDUs. If no error detection is requested, Residual bit error ratio indicates the bit error ratio in the delivered SDUs.
Default field name	TBD
Name of Datatype	Residual Bit Error Rate datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.7.3 Residual Bit Error Rate: Datatype definition

Datatype name	Residual_Bit_Error_Rate_datatype
Label	Residual Bit Error Rate datatype
Description	Possible values: Subscribed residual BER 5*10-2 1*10-2 5*10-3 4*10-3 1*10-3 1*10-4 1*10-5 1*10-6 6*10-8
References to definitions and descriptions	TBD
References to usage	Residual Bit Error Rate
DDM Definition	TBD

3.8 3G QoS: SDU error ratio

3.8.1 Background information

References	Definition and description
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	SDU-ERROR-RATIO (0 or 1 entries) The SDU-ERROR-RATIO parameter indicates the fraction of SDUs lost or detected as erroneous and is defined only for conforming traffic. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<SDU error ratio>: a string parameter that indicates the target value for the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. The value is specified as 'mEe'. As an example a target SDU error ratio of $5 \cdot 10^{-3}$ would be specified as '5E3' (e.g. AT+CGEQREQ=…,"5E3",…). '0E0' means subscribed value.
CN Protocol 24.008	**SDU error ratio** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element SDU error ratio, octet 10 (see 3GPP 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 is from $1*10^{-1}$ 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
QoS 23.107/22.060	**SDU error ratio** Definition: Indicates the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic. NOTE 1: By reserving resources, SDU error ratio performance is independent of the loading conditions, whereas without reserved resources, such as in Interactive and Background classes, SDU error ratio is used as target value. *[Purpose: Used to configure the protocols, algorithms and error detection schemes, primarily within UTRAN.]*

3.8.2 Attribute definition

ID	SDU_error_ratio
Label	SDU error ratio
Description	Indicates the fraction of SDUs lost or detected as erroneous. SDU error ratio is defined only for conforming traffic.
Default field name	TBD
Name of Datatype	SDU error ratio datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.8.3 SDU error ratio: Datatype definition

Datatype name	SDU_error_ratio_datatype
Label	SDU error ratio datatype
Description	Possible values: Subscribed SDU error ratio 1*10-2 7*10-3 1*10-3 1*10-4 1*10-5 1*10-6 1*10-1
References to definitions and descriptions	TBD
References to usage	SDU error ratio
DDM Definition	TBD

3.9 3G QoS: Traffic handling priority

3.9.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	TRAFFIC-HANDL-PRIO (0 or 1 entries) The TRAFFIC-HANDL-PRIO parameter specifies the relative importance for handling of all SDUs belonging to the PDP context bearer compared to the SDUs of other bearers. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Traffic handling priority>: a numeric parameter (1,2,3,…) that specifies the relative importance for handling of all SDUs belonging to the UMTS bearer compared to the SDUs of other bearers. If the parameter is set to '0' the subscribed value will be requested.
CN Protocol 24.008	**Traffic handling priority** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Traffic handling priority, octet 11 (see 3GPP 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.
QoS 23.107/22.060	**Traffic handling priority** Definition: specifies the relative importance for handling of all SDUs belonging to the UMTS bearer compared to the SDUs of other bearers.

	[Purpose: Within the interactive class, there is a definite need to differentiate between bearer qualities. This is handled by using the traffic handling priority attribute, to allow UMTS to schedule traffic accordingly. By definition, priority is an alternative to absolute guarantees, and thus these two attribute types cannot be used together for a single bearer.]

3.9.2 Attribute definition

ID	Traffic_handling_priority
Label	Traffic handling priority
Description	Relative importance for handling of all SDUs belonging to the UMTS bearer compared to the SDUs of other bearers
Default field name	TBD
Name of Datatype	Traffic handling priority datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.9.3 Traffic handling priority: Datatype definition

Datatype name	Traffic_handling_priority_datatype
Label	Traffic handling priority datatype
Description	Possible values: Subscribed traffic handling priority Priority level 1 Priority level 2 Priority level 3
References to definitions and descriptions	TBD
References to usage	Traffic handling priority
DDM Definition	TBD

3.10 3G QoS: Transfer Delay

3.10.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	TRANSFER-DELAY (0 or 1 entries) The TRANSFER-DELAY parameter indicates the maximum delay for 95 th percentile of the distribution of delay for all delivered SDUs during the lifetime of a bearer service. Delay for an SDU is defined as the time from a request to transfer an SDU at one SAP to its delivery at the other SAP. Values are defined in [3GPP24008] and are represented as hexadecimal numbers. Bits not part of the TRANSFER-DELAY parameter are set to zero, e.g. the value "300 ms" is represented as 0x48.
AT Commands 27.007	<Transfer delay>: a numeric parameter (0,1,2,…) that indicates the targeted time between request to transfer an SDU at one SAP to its delivery at the

	other SAP, in milliseconds. If the parameter is set to '0' the subscribed value will be requested.
CN Protocol 24.008	**Transfer delay** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Transfer delay, octet 11 (See 3GPP 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 4000 ms in 100ms increments 1 1 1 1 1 1 Reserved The Transfer delay value is ignored if the Traffic Class is Interactive class or Background class. Coding is identical to that of Maximum bit rate for uplink
QoS 23.107/22.060	**Transfer delay (ms)** Definition: Indicates maximum delay for 95th percentile of the distribution of delay for all delivered SDUs during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer an SDU at one SAP to its delivery at the other SAP. *[Purpose: used to specify the delay tolerated by the application. It allows UTRAN to set transport formats and ARQ parameters.]* NOTE 3: Transfer delay of an arbitrary SDU is not meaningful for a bursty source, since the last SDUs of a burst may have long delay due to queuing, whereas the meaningful response delay perceived by the user is the delay of the first SDU of the burst.

3.10.2 Attribute definition

ID	Transfer_Delay
Label	Transfer Delay
Description	Indicates maximum delay for 95th percentile of the distribution of delay for all delivered SDUs during the lifetime of a bearer service, where delay for an SDU is defined as the time from a request to transfer an SDU at one SAP to its delivery at the other SAP
Default field name	TBD
Name of Datatype	Transfer Delay datatype
References to definitions and descriptions	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a AT Command TS 27.007 CN Protocol 24.008 QoS 23.170

3.10.3 Transfer Delay: Datatype definition

Datatype name	Transfer_Delay_datatype
Label	Transfer Delay datatype
Description	Possible values: Subscribed transfer delay The Transfer delay is binary coded in 6 bits, using a granularity of 10 ms giving a range of values from 10 ms to 150 ms in 10 ms increments The transfer delay is 200 ms + ((the binary coded value in 6 bits – 010000) * 50 ms) giving a range of values from 200 ms to 950 ms in 50ms increments The transfer delay is 1000 ms + ((the binary coded value in 6 bits – 100000) * 100 ms) giving a range of values from 1000 ms to 4000 ms in 100ms increments
References to definitions and descriptions	TBD
References to usage	Transfer Delay
DDM Definition	TBD

3.11 3G QoS: Guaranteed bit rate for uplink

3.11.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	GUARANTEED-BITRATE-UPLINK (0 or 1 entries) The GUARANTEED-BITRATE-UPLINK parameter indicates the guaranteed number of bits delivered by the PDP context at a SAP within a period of time, divided by the duration of the period. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Guaranteed bitrate UL>: a numeric parameter that indicates the guaranteed number of kbits/s delivered to UMTS (up-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=…,32, …). If the parameter is set to '0' the subscribed value will be requested.
CN Protocol 24.008	**Guaranteed bit rate for uplink** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Guaranteed bit rate for uplink, octet 12 (See 3GPP 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, or Maximum bit rate for uplink is set to 0 kbps
QoS 23.107/22.060	**Guaranteed bitrate (kbps)** Definition: guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals Maximum SDU size. The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B. UMTS bearer service attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the UMTS bearer service attributes are not guaranteed. *[Purpose: Describes the bitrate the UMTS bearer service shall guarantee to the*

	user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS.]

3.11.2 Attribute definition

ID	Guaranteed_bit_rate_for_uplink
Label	Guaranteed bit rate for uplink
Description	guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver) in uplink, divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals Maximum SDU size
Default field name	TBD
Name of Datatype	maximum bit rate datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.12 3G QoS: Guaranteed bit rate for downlink

3.12.1 Background information

References	**Definition and description**
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	GUARANTEED-BITRATE-DNLINK (0 or 1 entries) The GUARANTEED-BITRATE-DNLINK parameter indicates the guaranteed number of bits delivered by the PDP context at a SAP within a period of time, divided by the duration of the period. Values are defined in [3GPP24008] and are represented as hexadecimal numbers.
AT Commands 27.007	<Guaranteed bitrate DL>: a numeric parameter that indicates the guaranteed number of kbits/s delivered by UMTS (down-link traffic) at a SAP (provided that there is data to deliver). As an example a bitrate of 32kbit/s would be specified as '32' (e.g. AT+CGEQREQ=…,32, …). If the parameter is set to '0' the subscribed value will be requested.
CN Protocol 24.008	**Guaranteed bit rate for downlink** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Guaranteed bit rate for downlink, octet 13(See 3GPP 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, or Maximum bit rate for downlink is set to 0 kbps.
QoS 23.107/22.060	**Guaranteed bitrate (kbps)** Definition: guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver), divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals Maximum SDU size. The conformance definition should not be interpreted as a required implementation algorithm. The token bucket algorithm is described in annex B. UMTS bearer service attributes, e.g. delay and reliability attributes, are guaranteed for traffic up to the Guaranteed bitrate. For the traffic exceeding the Guaranteed bitrate the UMTS bearer service attributes are not guaranteed.

	[Purpose: Describes the bitrate the UMTS bearer service shall guarantee to the user or application. Guaranteed bitrate may be used to facilitate admission control based on available resources, and for resource allocation within UMTS.]

3.12.2 Attribute definition

ID	Guaranteed_bit_rate_for_downlink
Label	Guaranteed bit rate for downlink
Description	guaranteed number of bits delivered by UMTS at a SAP within a period of time (provided that there is data to deliver) in downlink, divided by the duration of the period. The traffic is conformant with the guaranteed bitrate as long as it follows a token bucket algorithm where token rate equals Guaranteed bitrate and bucket size equals Maximum SDU size
Default field name	TBD
Name of Datatype	Maximum bit rate datatype
References to definitions and descriptions	- WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT Command TS 27.007 - CN Protocol 24.008 - QoS 23.170

3.13 3G QoS: Source statistics descriptor

3.13.1 Background information

References	**Definition and description**
CN Protocol 24.008	Source Statistics Descriptor, octet 14 (see 3GPP TS 23.107) Bits 4 3 2 1 In MS to network direction 0 0 0 0 unknown 0 0 0 1 speech The MS shall consider all other values as unknown
QoS 23.107	**Source statistics descriptor ('speech'/'unknown')** Definition: specifies characteristics of the source of submitted SDUs. *[Note: The number of different source statistics descriptors that should be allowed is FFS.]* *[Purpose: Conversational speech has a well-known statistical behaviour (or the discontinuous transmission (DTX) factor). By being informed that the SDUs for a UMTS bearer are generated by a speech source, UTRAN, the SGSN and the GGSN and also the UE may, based on experience, calculate a statistical multiplex gain for use in admission control on the relevant interfaces.]*

3.13.2 Attribute definition

ID	Source_statistics_descriptor
Label	Source statistics descriptor
Description	Specifies characteristics of the source of submitted SDUs
Default field name	TBD
Name of Datatype	Source statistics descriptor datatype
References to definitions and	- CN Protocol 24.008 - QoS 23.170

descriptions	

3.13.3 Source statistics descriptor: Datatype definition

Datatype name	Source_statistics_descriptor_datatype
Label	Source statistics descriptor datatype
Description	Possible values: unknown speech
References to definitions and descriptions	TBD
References to usage	Source statistics descriptor
DDM Definition	TBD

4. Network Access: PS 2G QoS Configuration Attributes/Datatypes

4.1 2G QoS: Precedence Class

4.1.1 Background information

References	**Definition and description**
AT Commands 27.007	<precedence>: a numeric parameter which specifies the precedence class
QoS 22.060	Service precedence (priority) The service precedence indicates the relative priority of maintaining the service. For example under abnormal conditions (e.g. network congestion) packets which may be discarded can be identified. The following precedence levels are defined: - High precedence: Service commitments will be maintained ahead of all other precedence levels. - Normal precedence: Service commitments will be maintained ahead of low priority users. - Low precedence: Service commitments will be maintained after the high and normal priority commitments have been fulfilled.
CN Protocol 24.008	**Precedence class** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Precedence class, octet 4 (see 3GPP 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.

4.1.2 Attribute definition

ID	Precedence_Class
Label	Precedence Class
Description	The service precedence indicates the relative priority of maintaining the service. For example under abnormal conditions (e.g. network congestion) packets which may be discarded can be identified. The following precedence levels are defined: - High precedence: Service commitments will be maintained ahead of all other precedence levels. - Normal precedence: Service commitments will be maintained ahead of low priority users. - Low precedence: Service commitments will be maintained after the high and normal priority commitments have been fulfilled.
Default field name	TBD
Name of Datatype	Precedence_Class_datatype
References to definitions and descriptions	- AT Command TS 27.007 - QoS 23.170/22.060 - CN Protocol 24.008

41.3 Precedence Class: Datatype definition

Datatype name	Precedence_Class_datatype
Label	Precedence Class datatype
Description	Possible values: Subscribed precedence High priority Normal priority Low priority
References to definitions and descriptions	TBD
References to usage	Precedence Class
DDM Definition	TBD

4.2 2G QoS: Delay Class

4.2.1 Background information

References	**Definition and description**
AT Commands 27.007	<delay>: a numeric parameter which specifies the delay class
QoS 22.060	Delay GPRS is not a „store and forward“ service - although data is temporarily stored at network nodes during transmission - thus, any delay incurred is due to technical transmission characteristics (or limitations) of the system and is to be minimised for a particular delay class. The delay parameter thus defines the maximum values

	for the mean delay and 95-percentile delay to be incurred by the transfer of data through the GPRS network(s). The delay parameter defines the end-to-end transfer delay incurred in the transmission of SDUs through the GPRS network(s). This includes the radio channel access delay (on uplink) or radio channel scheduling delay (on downlink), the radio channel transit delay (uplink and/or downlink paths) and the GPRS-network transit delay (multiple hops). It does not include transfer delays in external networks. Delay is measured between the R or S (for UE) and Gi (for FS) reference points when applied to "UE to fixed station (FS)" or "FS to UE" transmissions. **Table 5: Delay classes** **Delay (maximum values)** SDU size: 128 octets SDU size: 1024 octets Delay Class Mean Transfer Delay (sec) 95 percentile Delay (sec) Mean Transfer Delay (sec) 95 percentile Delay (sec) 1. (Predictive) < 0.5 < 1.5 < 2 < 7 2. (Predictive) < 5 < 25 < 15 < 75 3. (Predictive) < 50 < 250 < 75 < 375 4. (Best Effort) Unspecified
CN Protocol 24.008	**Delay class** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Delay class, octet 3 (see 3GPP TS 22.060 and 3GPP 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.

4.2.2 Attribute definition

ID	Delay_Class
Label	Delay Class
Description	Delay defines the end-to-end transfer delay incurred in the transmission of SDUs through the GPRS network(s). **Delay classes** **Delay (maximum values)** SDU size: 128 octets SDU size: 1024 octets Delay Class Mean Transfer Delay (sec) 95 percentile Delay (sec) Mean Transfer Delay (sec) 95 percentile Delay (sec) 1. (Predictive) < 0.5 < 1.5 < 2 < 7 2. (Predictive) < 5 < 25 < 15 < 75 3. (Predictive) < 50 < 250 < 75 < 375 4. (Best Effort) Unspecified
Default field name	TBD
Name of Datatype	Delay_Class _datatype
References to definitions and descriptions	- AT Command TS 27.007 - QoS 23.170/22.060 - CN Protocol 24.008

4.2.3 Delay Class: Datatype definition

Datatype name	Delay Class datatype
Label	Delay_Class _datatype
Description	Possible values: Subscribed delay class Delay class 1 Delay class 2 Delay class 3 Delay class 4 (best effort)
References to definitions and descriptions	TBD
References to usage	Delay Class
DDM Definition	TBD

4.3 2G QoS: Reliability Class

4.3.1 Background information

References	**Definition and description**
AT Commands 27.007	The following parameters are defined in 3GPP TS 23.107 [46]: <reliability>: a numeric parameter which specifies the reliability class
QoS 22.060	Reliability The reliability parameter indicates the transmission characteristics that are required by an application. The reliability class defines the probability of loss of, duplication of, mis-sequencing of or corruption of SDUs. Table 4 lists the three classes of the data reliability. **Table 4: Reliability classes** **Reliability class** **Lost SDU probability (a)** **Duplicate SDU probability** **Out of Sequence SDU probability** **Corrupt SDU probability (b)** **Example of application characteristics.** 1 10^{-9} 10^{-9} 10^{-9} 10^{-9}

	Error sensitive, no error correction capability, limited error tolerance capability. 2×10^{-4} 10^{-5} 10^{-5} 10^{-6} Error sensitive, limited error correction capability, good error tolerance capability. 3×10^{-2} 10^{-5} 10^{-5} 10^{-2} Not error sensitive, error correction capability and/or very good error tolerance capability. a) To protect against buffer overflow or a protocol malfunction, there is a maximum holding time for each SDU in the GPRS network after which the SDU is discarded. The maximum holding time depends on the protocols used (e.g., TCP/IP). b) Corrupt SDU probability: the probability that a SDU will be delivered to the user with an undetected error.
CN Protocol 24.008	**Reliablity class** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Reliability class, octet 3 (see 3GPP 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.

There are some confusion on the definition in 22.060 and other specs…but Reidar Ericsson (EMP) suggested to use 23.170 and 24.008

4.3.2 Attribute definition

ID	Reliability_Class
Label	Reliability Class
Description	The reliability parameter indicates the transmission characteristics that are required by an application. The reliability class defines the probability of loss of, duplication of, mis-sequencing of or corruption of SDUs Reliability class 1: Acknowledged GTP, LLC, and RLC; Protected data Reliability class 2: Unacknowledged GTP; Acknowledged LLC and RLC, Protected data Reliability class 3: Unacknowledged GTP and LLC; Acknowledged RLC, Protected data Reliability class 4: Unacknowledged GTP, LLC, and RLC, Protected data Reliability class 5: Unacknowledged GTP, LLC, and RLC, Unprotected data
Default field name	TBD
Name of Datatype	Reliability_Class_datatype
References to definitions and descriptions	- AT Command TS 27.007 - QoS 23.170/22.060 - CN Protocol 24.008

4.3.3 Reliability Class: Datatype definition

Datatype name	Reliability Class datatype
Label	Reliability_Class_datatype
Description	Possible values: Subscribed reliability class Reliability class 1 Reliability class 2 Reliability class 3 Reliability class 4 Reliability class 5
References to definitions and descriptions	TBD
References to usage	Reliability Class
DDM Definition	TBD

4.4 2G QoS: Peak Throughput

4.4.1 Background information

References	**Definition and description**
AT Commands 27.007	<peak>: a numeric parameter which specifies the peak throughput class
QoS 22.060	Throughput The throughput parameter indicates the user data throughput requested by the user. Throughput is defined by two negotiable parameters: - Maximum bit rate - Mean bit rate (includes, for example for "bursty" transmissions, the periods in which no data is transmitted.) The maximum and mean bit rates can be negotiated to a value up to the Information Transfer Rate value (see table 3). It shall be possible for the network to re-negotiate the throughput parameters at any time during a session.

CN Protocol 24.008	**Peak throughput** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Peak throughput, octet 4 (see 3GPP 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.

4.4.2 Attribute definition

ID	Peak_Throughput
Label	Peak Throughput
Description	The peak throughput parameter indicates the Maximum bit rate of the user data throughput requested by the user.
Default field name	TBD
Name of Datatype	Peak_Throughput_datatype
References to definitions and descriptions	AT Command TS 27.007 QoS 23.170/22.060 CN Protocol 24.008

4.4.3 Peak Throughput: Datatype definition

Datatype name	Peak_Throughput_datatype
Label	Peak Throughput datatype
Description	Possible values: Subscribed peak throughput Up to 1 000 octet/s Up to 2 000 octet/s Up to 4 000 octet/s Up to 8 000 octet/s Up to 16 000 octet/s Up to 32 000 octet/s Up to 64 000 octet/s Up to 128 000 octet/s Up to 256 000 octet/s
References to definitions and descriptions	TBD

References to usage	Peak Throughput
DDM Definition	TBD

4.5 2G QoS: Mean Throughput

4.4.1 Background information

References	**Definition and description**
AT Commands 27.007	<mean>: a numeric parameter which specifies the mean throughput class
QoS 22.060	Throughput The throughput parameter indicates the user data throughput requested by the user. Throughput is defined by two negotiable parameters: - Maximum bit rate - Mean bit rate (includes, for example for "bursty" transmissions, the periods in which no data is transmitted.) The maximum and mean bit rates can be negotiated to a value up to the Information Transfer Rate value (see table 3). It shall be possible for the network to re-negotiate the throughput parameters at any time during a session.
CN Protocol 24.008	**Mean throughput** Table 10.5.156/3GPP TS 24.008: *Quality of service* information element Mean throughput, octet 5 (see 3GPP 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.

4.4.2 Attribute definition

ID	Mean_Throughput
Label	Mean Throughput
Description	The mean throughput parameter indicates the Mean bit rate (includes, for example for "bursty" transmissions, the periods in which no data is transmitted.) of the user data throughput requested by the user.
Default field name	TBD
Name of Datatype	Mean_Throughput_datatype
References to definitions and descriptions	- AT Command TS 27.007 - QoS 23.170/22.060 - CN Protocol 24.008

4.4.3 Mean Throughput: Datatype definition

Datatype name	Mean_Throughput_datatype
Label	Mean Throughput datatype
Description	Possible values: Subscribed mean throughput 100 octet/h 200 octet/h 500 octet/h 1 000 octet/h 2 000 octet/h 5 000 octet/h 10 000 octet/h 20 000 octet/h 50 000 octet/h 100 000 octet/h 200 000 octet/h 500 000 octet/h 1 000 000 octet/h 2 000 000 octet/h 5 000 000 octet/h 10 000 000 octet/h 20 000 000 octet/h 50 000 000 octet/h Best effort
References to definitions and descriptions	TBD
References to usage	Mean Throughput
DDM Definition	TBD

5. Network Access: CS Configuration Attributes/Datatypes

5.1 CS: Fixed Network User Rate

5.1.1 Background information

References	Definition and description
MMS TS 23.140	Interface to core network including access point for the core network (e.g. GGSN) and required bearer (all information elements are as defined in [55]) - speed: indicates the speed of the connection for circuit switched bearers
USIM TS 31.102	EF_{MMSCP} (MMS Connectivity Parameters) - Interface to Core Network and Bearer Tag '82' Contents: The Interface to Core Network and Bearer may contain the following information to set up the bearer: Bearer, Address, Type of address, Speed, Call type, Authentication type, Authentication id, Authentication password. Coding: The coding is according to the guideline provided in 3GPP TS 23.140 [38].
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	NAPDEF/DNLINKSPEED LINKSPEED (0 or 1 entries) Defines the speed on the up-link channel and optionally the down-link channel for circuit switched bearers. Possible values are "autobauding" or a number (baud in decimal format). DNLINKSPEED (0 or 1 entries) Defines the speed on the down-link channel for circuit switched bearers. Possible values are "autobauding" or a number (baud in decimal format). If this parameter is missing or if the ME does not support different up- and down-link speeds, the value of the LINKSPEED parameter may be assumed to be effective for the down-link channel as well.
AT Commands	<speed>: 0 autobauding (automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service) 1 300 bps (V.21) 2 1200 bps (V.22) 3 1200/75 bps (V.23) 4 2400 bps (V.22bis) 5 2400 bps (V.26ter) 6 4800 bps (V.32) 7 9600 bps (V.32) 12 9600 bps (V.34) 14 14400 bps (V.34) 15 19200 bps (V.34) 16 28800 bps (V.34) 17 33600 bps (V.34) 34 1200 bps (V.120) 36 2400 bps (V.120) 38 4800 bps (V.120) 39 9600 bps (V.120) 43 14400 bps (V.120) 47 19200 bps (V.120) 48 28800 bps (V.120) 49 38400 bps (V.120) 50 48000 bps (V.120) 51 56000 bps (V.120) 65 300 bps (V.110) 66 1200 bps (V.110) 68 2400 bps (V.110 or X.31 flag stuffing) 70 4800 bps (V.110 or X.31 flag stuffing) 71 9600 bps (V.110 or X.31 flag stuffing) 75 14400 bps (V.110 or X.31 flag stuffing) 79 19200 bps (V.110 or X.31 flag stuffing) 80 28800 bps (V.110 or X.31 flag stuffing) 81 38400 bps (V.110 or X.31 flag stuffing) 82 48000 bps (V.110 or X.31 flag stuffing)

	83 56000 bps (V.110 or X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI or RDI service in order to get FTM) 84 64000 bps (X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI service in order to get FTM) 115 56000 bps (bit transparent) 116 64000 bps (bit transparent) 120 32000 bps (PIAFS32k) 121 64000 bps (PIAFS64k) 130 28800 bps (multimedia) 131 32000 bps (multimedia) 132 33600 bps (multimedia) 133 56000 bps (multimedia) 134 64000 bps (multimedia) also all other values below 128 are reserved by the present document.
Core Net Protocol 28.004	Table 10.5.101j/3GPP TS 24.008: Backup bearer capability information element Fixed network user rate (octet 6d) Bit **5 4 3 2 1** 0 0 0 0 0 Fixed network user rate not applicable/No meaning is associated with this value. 0 0 0 0 1 9.6 kbit/s Recommendation X.1 and V.110 0 0 0 1 0 14.4 kbit/s Recommendation X.1 and V.110 0 0 0 1 1 19.2 kbit/s Recommendation X.1 and V.110 0 0 1 0 0 28.8 kbit/s Recommendation X.1 and V.110 0 0 1 0 1 38.4 kbit/s Recommendation X.1 and V.110 0 0 1 1 0 48.0 kbit/s Recommendation X.1 and V.110(synch) (note 1) 0 0 1 1 1 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent 0 1 0 0 0 64.0 kbit/s bit transparent 0 1 0 0 1 33.6 kbit/s bit transparent (note 2) 0 1 0 1 0 32.0 kbit/s Recommendation I.460 0 1 0 1 1 31.2 kbit/s Recommendation V.34 (note 2) The value 31.2 kbit/s Recommendation V.34 shall be used only by the network to inform the MS about FNUR modification due to negotiation between the modems in a 3.1 kHz multimedia call. All other values are reserved. Note 1: In GSM only. Note 2: In UMTS only Table 10.5.112/3GPP TS 24.008: Bearer capability information element **User rate** Table 10.5.101g/3GPP TS 24.008: Backup bearer capability information element User rate (octet 6a) In GSM only. Bits **4 3 2 1** 0 0 0 0 User rate unknown 0 0 0 1 0.3 kbit/s Recommendation X.1 and V.110 0 0 1 0 1.2 kbit/s Recommendation X.1 and V.110 0 0 1 1 2.4 kbit/s Recommendation X.1 and V.110 0 1 0 0 4.8 kbit/s Recommendation X.1 and V.110 0 1 0 1 9.6 kbit/s Recommendation X.1 and V.110 0 1 1 0 12.0 kbit/s transparent (non compliance with X.1 and V.110) 0 1 1 1 reserved: was allocated in earlier phases of the protocol. All other values are reserved. For facsimile group 3 calls the user rate indicates the first and maximum speed the mobile station is using. Octet 6b for V.110/X.30 rate adaptation Intermediate rate (octet 6b) In GSM only. If the value "User rate unknown" is signalled in the field "User rate" then the contents of this field shall be ignored. Bits **7 6** 0 0 reserved 0 1 reserved

	1 0	8 kbit/s
	1 1	16 kbit/s

5.1.2 Attribute definition

ID	Fixed_Network_user_rate
Label	Fixed Network user rate
Description	TBD
Default field name	TBD
Name of Datatype	Fixed_Network_user_rate _datatype
References to definitions and descriptions	- MMS TS 23.140 - USIM TS 31.102 - WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT commands 27.007 - CN Protocol 24.008

5.1.3 Fixed Network user rate: Datatype definition

Datatype name	Fixed_Network_user_rate_datatype
Label	Fixed Network user rate datatype
Description	Possible values: 9.6 kbit/s Recommendation X.1 and V.110 14.4 kbit/s Recommendation X.1 and V.110 19.2 kbit/s Recommendation X.1 and V.110 28.8 kbit/s Recommendation X.1 and V.110 38.4 kbit/s Recommendation X.1 and V.110 48.0 kbit/s Recommendation X.1 and V.110(synch) (note 1) 56.0 kbit/s Recommendation X.1 and V.110(synch) /bit transparent 64.0 kbit/s bit transparent 33.6 kbit/s bit transparent (note 2) 32.0 kbit/s Recommendation I.460 31.2 kbit/s User rate unknown 0.3 kbit/s Recommendation X.1 and V.110 1.2 kbit/s Recommendation X.1 and V.110 2.4 kbit/s Recommendation X.1 and V.110 4.8 kbit/s Recommendation X.1 and V.110 9.6 kbit/s Recommendation X.1 and V.110 12.0 kbit/s transparent (non compliance with X.1 and V.110)
References to definitions and descriptions	TBD
References to usage	Fixed Network user rate
DDM Definition	TBD

5.2 CS: Call type

5.2.1 Background information

References	**Definition and description**
MMS TS 23.140	Interface to core network including access point for the core network (e.g. GGSN)

	and required bearer (all information elements are as defined in [55]) - call type: indicates type of call for specific bearer (e.g. analogue for CSD)
USIM TS 31.102	EF_{MMSCP} (MMS Connectivity Parameters) - Interface to Core Network and Bearer Tag '82' Contents: The Interface to Core Network and Bearer may contain the following information to set up the bearer: Bearer, Address, Type of address, Speed, Call type, Authentication type, Authentication id, Authentication password. Coding: The coding is according to the guideline provided in 3GPP TS 23.140 [38].
WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	CALLTYPE (0 or 1 entries) Some bearers may support different types of calls or different protocols to be used for data exchange. The CALLTYPE parameter is used to define this protocol or call type. **Value** ANALOG_MODEM (default) V.120 V.110 X.31 BIT_TRANSPARENT DIRECT_ASYNCHRONOUS_DATA_SERVICE
AT Commands	<speed>: 0 autobauding (automatic selection of the speed; this setting is possible in case of 3.1 kHz modem and non-transparent service) 1 300 bps (V.21) 2 1200 bps (V.22) 3 1200/75 bps (V.23) 4 2400 bps (V.22bis) 5 2400 bps (V.26ter) 6 4800 bps (V.32) 7 9600 bps (V.32) 12 9600 bps (V.34) 14 14400 bps (V.34) 15 19200 bps (V.34) 16 28800 bps (V.34) 17 33600 bps (V.34) 34 1200 bps (V.120) 36 2400 bps (V.120) 38 4800 bps (V.120) 39 9600 bps (V.120) 43 14400 bps (V.120) 47 19200 bps (V.120) 48 28800 bps (V.120) 49 38400 bps (V.120) 50 48000 bps (V.120) 51 56000 bps (V.120) 65 300 bps (V.110) 66 1200 bps (V.110) 68 2400 bps (V.110 or X.31 flag stuffing) 70 4800 bps (V.110 or X.31 flag stuffing) 71 9600 bps (V.110 or X.31 flag stuffing) 75 14400 bps (V.110 or X.31 flag stuffing) 79 19200 bps (V.110 or X.31 flag stuffing) 80 28800 bps (V.110 or X.31 flag stuffing) 81 38400 bps (V.110 or X.31 flag stuffing) 82 48000 bps (V.110 or X.31 flag stuffing) 83 56000 bps (V.110 or X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI

	or RDI service in order to get FTM) 84 64000 bps (X.31 flag stuffing; this setting can be used in conjunction with asynchronous non-transparent UDI service in order to get FTM) 115 56000 bps (bit transparent) 116 64000 bps (bit transparent) 120 32000 bps (PIAFS32k) 121 64000 bps (PIAFS64k) 130 28800 bps (multimedia) 131 32000 bps (multimedia) 132 33600 bps (multimedia) 133 56000 bps (multimedia) 134 64000 bps (multimedia) also all other values below 128 are reserved by the present document.
Core Net Protocol	Table 10.5.112/3GPP TS 24.008: Bearer capability information element **Modem type** Modem type (octet 6c) Bits **5 4 3 2 1** 0 0 0 0 0 none 0 0 0 0 1 V.21 (note 1) 0 0 0 1 0 V.22 (note 1) 0 0 0 1 1 V.22 bis (note 1) 0 0 1 0 0 reserved: was allocated in earlier phases of the protocol 0 0 1 0 1 V.26 ter (note 1) 0 0 1 1 0 V.32 0 0 1 1 1 modem for undefined interface 0 1 0 0 0 autobauding type 1 All other values are reserved. Note 1: In GSM only. **Other modem type** Table 10.5.101j/3GPP TS 24.008: Backup bearer capability information element Other modem type (octet 6d) Bits **7 6** 0 0 no other modem type specified in this field 1 0 V.34 All other values are reserved. **Rate adaptation** Table 10.5.106/3GPP TS 24.008: Bearer capability information element Rate adaption (octet 5) Bits **5 4** 0 0 no rate adaption 0 1 V.110, I.460/X.30 rate adaptation 1 0 ITU-T X.31 flag stuffing 1 1 Other rate adaption (see octet 5a) **Other Rate adaptation** Table 10.5.107/3GPP TS 24.008: Bearer capability information element Other rate adaption (octet 5a) If the value " Other rate adaption" is not signalled in the field "Rate adaption" then the contents of this field shall be ignored. In UMTS, PIAFS shall be considered. In GSM, call shall be rejected if PIAFS requested. Bit **5 4** 0 0 V.120 0 1 H.223 & H.245 1 0 PIAFS All other values are reserved.

5.2.2 Attribute definition

ID	Call_type
Label	Call type
Description	TBD
Default field name	TBD
Name of Datatype	Call type datatype
References to definitions and descriptions	- MMS TS 23.140 - USIM TS 31.102 - WAP Provisioning Content WAP-183-ProvCOnt-20010724-a - AT commands 27.007 - CN Protocol 24.008

5.2.3 Call type: Datatype definition

Datatype name	Call_type_datatype
Label	Call type datatype
Description	Possible values: none V.21 (note 1) V.22 (note 1) V.22 bis (note 1) V.26 ter (note 1) V.32 modem for undefined interface autobauding type 1 V.34 no rate adaption V.110, I.460/X.30 rate adaptation ITU-T X.31 flag stuffing V.120 H.223 & H.245 PIAFS
References to definitions and descriptions	TBD
References to usage	Call type
DDM Definition	TBD

5.3 CS: Connection Element

5.3.1 Background information

References	**Definition and description**
AT Commands 27.007	<ce>: 0 transparent 1 non-transparent 2 both, transparent preferred 3 both, non-transparent preferred
CN Protocol 24.008	Table 10.5.101h/3GPP TS 24.008: Backup bearer capability information element Connection element (octet 6c) Bit **7 6**

	0 0	transparent
	0 1	non transparent (RLP)
	1 0	both, transparent preferred
	1 1	both, non transparent preferred

5.3.2 Attribute definition

ID	Connection_Element
Label	Connection Element
Description	TBD
Default field name	TBD
Name of Datatype	Connection element datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.3.3 connection element: Datatype definition

Datatype name	Connection_element_datatype
Label	Connection element datatype
Description	Possible values: transparent non transparent (RLP) both, transparent preferred both, non transparent preferred
References to definitions and descriptions	TBD
References to usage	Connection Element
DDM Definition	TBD

5.4 CS: Synchronous/asynchronous, tranfer mode and information transfer capability

5.4.1 Background information

References	**Definition and description**
AT Commands 27.007	<name>: 0 data circuit asynchronous (UDI or 3.1 kHz modem) 1 data circuit synchronous (UDI or 3.1 kHz modem) 2 PAD Access (asynchronous) (UDI) 3 Packet Access (synchronous) (UDI) 4 data circuit asynchronous (RDI) 5 data circuit synchronous (RDI) 6 PAD Access (asynchronous) (RDI) 7 Packet Access (synchronous) (RDI) also all other values below 128 are reserved by the present document
CN Protocol 24.008	**Synchronous/asynchronous** Table 10.5.101e/3GPP TS 24.008: Backup bearer capability information element

	Synchronous/asynchronous (octet 6) Bit **1** 0 synchronous 1 asynchronous **Transfer mode** Table 10.5.101a/3GPP TS 24.008: Backup bearer capability information element Transfer mode (octet 3) Bit **4** 0 circuit mode 1 packet mode **Information transfer capabiltity** Table 10.5.102/3GPP TS 24.008: Bearer capability information element Information transfer capability (octet 3) Bits **3 2 1** 0 0 0 speech 0 0 1 unrestricted digital information 0 1 0 3.1 kHz audio, ex PLMN 0 1 1 facsimile group 3 1 0 1 Other ITC (See Octet 5a) 1 1 1 reserved, to be used in the network. The meaning is: alternate speech/facsimile group 3 - starting with speech. All other values are reserved **Other ITC** **Table 10.5.106/3GPP TS 24.008: Bearer capability information element** Other ITC (octet 5a) If the value "Other ITC" is not signalled in the field "ITC" then the contents of this field shall be ignored. Bit **7 6** 0 0 restricted digital information All other values are reserved

5.4.2 Attribute definition

ID	Synchronous/asynchronous
Label	Synchronous/asynchronous
Description	TBD
Default field name	TBD
Name of Datatype	synch_asynch_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.4.3 synch_asynch: Datatype definition

Datatype name	synch_asynch_datatype
Label	Synch asynch datatype
Description	Possible values: synchronous asynchronous
References to definitions and	TBD

descriptions	
References to usage	Synchronous/asynchronous
DDM Definition	TBD

5.4.4 Attribute definition

ID	transfer mode
Label	transfer mode
Description	TBD
Default field name	TBD
Name of Datatype	Transfer_mode_datatype
References to definitions and descriptions	AT Command TS 27.007 CN Protocol 24.008

5.4.5 transfer_mode: Datatype definition

Datatype name	Transfer_mode_datatype
Label	Transfer mode datatype
Description	Possible values: circuit packet
References to definitions and descriptions	TBD
References to usage	transfer mode
DDM Definition	TBD

5.4.6 Attribute definition

ID	Information_transfer_capability
Label	information transfer capability
Description	TBD
Default field name	TBD
Name of Datatype	information_transfer_capability_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.4.7 information transfer capability: Datatype definition

Datatype name	information_transfer_capability_datatype
Label	TBD

Description	Possible values: UDI RDI
References to definitions and descriptions	TBD
References to usage	information transfer capability
DDM Definition	TBD

5.5 CS/HSCSD: wRX

5.5.1 Background information

References	**Definition and description**
AT Commands 27.007	<wRx>: integer type; wanted amount of receive timeslots. Default value 0 indicates that TA shall calculate a proper value from currently selected fixed network user rate (<speed> subparameter from +CBST command) and <codings> [...] <wRx>: integer type; wanted amount of receive timeslots. Default value 0 indicates that TA shall calculate a proper value from currently selected <wAiur> and <codings>. This parameter is not applicable to UTRAN single mode UE.
CN Protocol 24.008	**Maximum number of traffic channels** Table 10.5.113/3GPP TS 24.008: Bearer capability information element Maximum number of traffic channels (octet 6e), MS to network direction: Bits **3 2 1** 0 0 0 1 TCH 0 0 1 2 TCH 0 1 0 3 TCH 0 1 1 4 TCH 1 0 0 5 TCH 1 0 1 6 TCH 1 1 0 7 TCH 1 1 1 8 TCH

5.5.2 Attribute definition

ID	TBD
Label	WRx
Description	TBD
Default field name	TBD
Name of Datatype	WRx_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.5.3 wRx: Datatype definition

Datatype name	WRx_datatype
Label	TBD
Description	Possible values: ???
References to definitions and descriptions	TBD
References to usage	WRx
DDM Definition	TBD

5.6 CS/HSCSD: Coding

5.6.1 Background information

References	Definition and description
AT Commands 27.007	<codings> is a sum of integers each representing a supported channel coding (e.g. value 5 indicates that 4,8k and 9,6k channel codings are supported): 1 4,8k full rate data traffic channel 4 9,6k full rate data traffic channel 8 14,4k full rate data traffic channel 16 28,8k full rate data traffic channel (only possible when 14.4k is supported) 32 32,0k full rate data traffic channel (only possible in a two-timeslot configuration) 64 43,2k full rate data traffic channel (only possible when 14.4k is supported) [...]<codings>: a sum of integers each representing a channel coding that is accepted for transparent HSCSD calls. Default value 0 indicates that all supported codings are accepted (refer +CHSD command for other values) [...]<codings>: a sum of integers each representing a channel coding that is accepted for non-transparent HSCSD calls. Default value 0 indicates that all supported codings are accepted (refer +CHSD command for other values). This parameter is not applicable to UTRAN single mode UE.
CN Protocol 24.008	**Acceptable channel codings** Table 10.5.113/3GPP TS 24.008: Bearer capability information element Acceptable channel codings (octet 6e), mobile station to network direction: Bit **7** 0 TCH/F14.4 not acceptable 1 TCH/F14.4 acceptable Bit **6** 0 Spare Bit **5** 0 TCH/F9.6 not acceptable 1 TCH/F9.6 acceptable Bit **4** 0 TCH/F4.8 not acceptable 1 TCH/F4.8 acceptable **Acceptable channel codings extended** Table 10.5.115a/3GPP TS 24.008: Bearer capability information element Acceptable Channel Codings extended (octet 6g) mobile station to network direction: Bit 7 0 TCH/F28.8 not acceptable 1 TCH/F28.8 acceptable

	Bit 6 0 TCH/F32.0 not acceptable 1 TCH/F32.0 acceptable Bit 5 0 TCH/F43.2 not acceptable 1 TCH/F43.2 acceptable

5.6.2 Attribute definition

ID	TBD
Label	Coding
Description	
Default field name	TBD
Name of Datatype	Channel_coding_datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.6.3 channel_Coding: Datatype definition

Datatype name	Channel_coding_datatype
Label	Channel coding datatype
Description	Possible values TCH/F14.4 not acceptable TCH/F14.4 acceptable TCH/F9.6 not acceptable TCH/F9.6 acceptable TCH/F4.8 not acceptable TCH/F4.8 acceptable TCH/F28.8 not acceptable TCH/F28.8 acceptable TCH/F32.0 not acceptable TCH/F32.0 acceptable TCH/F43.2 not acceptable TCH/F43.2 acceptable
References to definitions and descriptions	TBD
References to usage	Coding
DDM Definition	TBD

5.7 CS/HSCSD: Wanted air interface user rate

5.7.1 Background information

References	Definition and description
AT Commands 27.007	<wAiur>: integer type; wanted air interface user rate. Default value 0 indicates that TA shall calculate a proper value from currently selected fixed network user rate (<speed> subparameter from +CBST command), <codings>, and <wRx> (or <maxRx> from +CHSD command if <wRx>=0). Other values: 1 9600 bps 2 14400 bps 3 19200 bps 4 28800 bps 5 38400 bps 6 43200 bps 7 57600 bps
CN Protocol 24.008	**Wanted air interface user rate** Table 10.5.114/3GPP TS 24.008: Bearer capability information element Wanted air interface user rate (octet 6f), MS to network direction: Bits **4 3 2 1** 0 0 0 0 Air interface user rate not applicable/No meaning associated with this value 0 0 0 1 9.6 kbit/s 0 0 1 0 14.4 kbit/s 0 0 1 1 19.2 kbit/s 0 1 0 1 28.8 kbit/s 0 1 1 0 38.4 kbit/s 0 1 1 1 43.2 kbit/s 1 0 0 0 57.6 kbit/s 1 0 0 1 interpreted by the network as 38.4 kbit/s in this version of the protocol 1 0 1 0 interpreted by the network as 38.4 kbit/s in this version of the protocol 1 0 1 1 interpreted by the network as 38.4 kbit/s in this version of the protocol 1 1 0 0 interpreted by the network as 38.4 kbit/s in this version of the protocol All other values are reserved.

5.7.2 Attribute definition

ID	Wanted_air_interface_user_rate
Label	Wanted air interface user rate
Description	TBD
Default field name	TBD
Name of Datatype	Wanted air interface user rate datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.7.3 Wanted_air_interface_user_rate: Datatype definition

Datatype name	***Wanted_air_interface_user_rate_datatype***
Label	Wanted air interface user rate datatype
Description	Possible values: 9.6 kbit/s 14.4 kbit/s 19.2 kbit/s 28.8 kbit/s 38.4 kbit/s

	43.2 kbit/s 57.6 kbit/s
References to definitions and descriptions	TBD
References to usage	Wanted air interface user rate
DDM Definition	TBD

5.8 CS/HSCSD: Max wRX

5.8.1 Background information

References	**Definition and description**
AT Commands 27.007	<topRx>: integer type; top value for <wRx> that user is going to request during the next established non-transparent HSCSD call. Default value 0 indicates that user is not going to change <wAiur>/<wRx> during the next call. This parameter is not applicable to UTRAN single mode UE.

5.8.2 Attribute definition

ID	TBD
Label	maxwRx
Description	TBD
Default field name	TBD
Name of Datatype	See wRx
References to definitions and descriptions	- AT Command TS 27.007

5.9 CS/HSCSD: Asymmetry configuration

5.8.1 Background information

References	**Definition and description**
AT Commands 27.007	controls the preferred asymmetry bias for non-transparent ECSD calls. Downlink biased asymmetry means that 8-PSK modulation is preferred downlink and GMSK modulation uplink. Uplink based asymmetry means that 8-PSK modulation is preferred uplink and GMSK downlink. Changing of <mode> affects the current call only if <topRx> (refer +CHSN) was non-zero when call was established. <mode>: 0 No preference 1 Downlink biased asymmetry 2 Uplink biased asymmetry
CN Protocol 24.008	**Channel coding Asymmetry Indication** Table 10.5.115a/3GPP TS 24.008: Bearer capability information element Channel Coding Asymmetry Indication Bits 4 3 0 0 Channel coding symmetry preferred 1 0 Downlink biased channel coding asymmetry is preferred

	0 1 Uplink biased channel coding asymmetry is preferred 1 1 Unused, if received it shall be interpreted as "Channel coding symmetry preferred"

5.8.2 Attribute definition

ID	Asymmetry_configuration
Label	Asymmetry configuration
Description	Controls the preferred asymmetry bias for non-transparent ECSD calls. Downlink biased asymmetry means that 8-PSK modulation is preferred downlink and GMSK modulation uplink. Uplink based asymmetry means that 8-PSK modulation is preferred uplink and GMSK downlink
Default field name	TBD
Name of Datatype	Channel Coding Asymmetry datatype
References to definitions and descriptions	- AT Command TS 27.007 - CN Protocol 24.008

5.8.3 Asymmetry configuration: Datatype definition

Datatype name	Channel_Coding_Asymmetry_datatype
Label	Channel Coding Asymmetry datatype
Description	Possible values: Channel coding symmetry preferred Downlink biased channel coding asymmetry preferred Uplink biased channel coding asymmetry preferred
References to definitions and descriptions	TBD
References to usage	Asymmetry configuration
DDM Definition	TBD

6. References

[1] 3GPP TS 24.008 Core Network Protocol

[2] 3GPP TS 23.107 QoS Concept and Architecture

[3] 3GPP TS 23.140 Multimedia Messaging Service; Stage 2

[4] 3GPP TS 32.102 USIM

[5] 3GPP 27.007 AT commands

[6] WAP-183-ProvCont, Provisioning Content

[7] WAP-209-MMSEncapsulation, MMS Encapsulation

Annex B2 Subscription Management

[tbd]

Annex B3 MMS Parameters

Parameter Requirements	Data Description	Generated Documentation	Generated XML Schema

(Ed. Note: Updates 24.241 with T2-020698 instead of T2GUP-02007)

Please note that this file is included here for information only.

Please also note that this is a very early draft and more work must be done by experts on MMS.

Title: Comparison of MMS-DataCom parameters in different specifications

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1. Introduction

The present document shows how the DataCom parameters relevant for MMS are described in different ways in different specifications.

This highlights the need to have a common identifier and a common description for each of them, independent of the used transport format or specification.

The way to solve this is to apply the DDM concept as described in TS 23.241.

Starting from the MMS parameters, the DataCom parameter names and structures defined in different specifications are listed.

The selected specifications are:

- USIM: the USIM contains MMS configuration parameters. (They can be found under the MMS chapter)
- WAP: the current MMS implementation is based on WAP, and many of the configurable needs are WAP related.
- AT commands 27.007: they provide the mean for a TE to configure the Datacom connections of a MT.

- Core Network protocol 24.008: gives very good information about the values that the different Datacom parameters can have. The information elements included in the messages Call setup for CS and Activate PDP context procedure for PS have been considered.

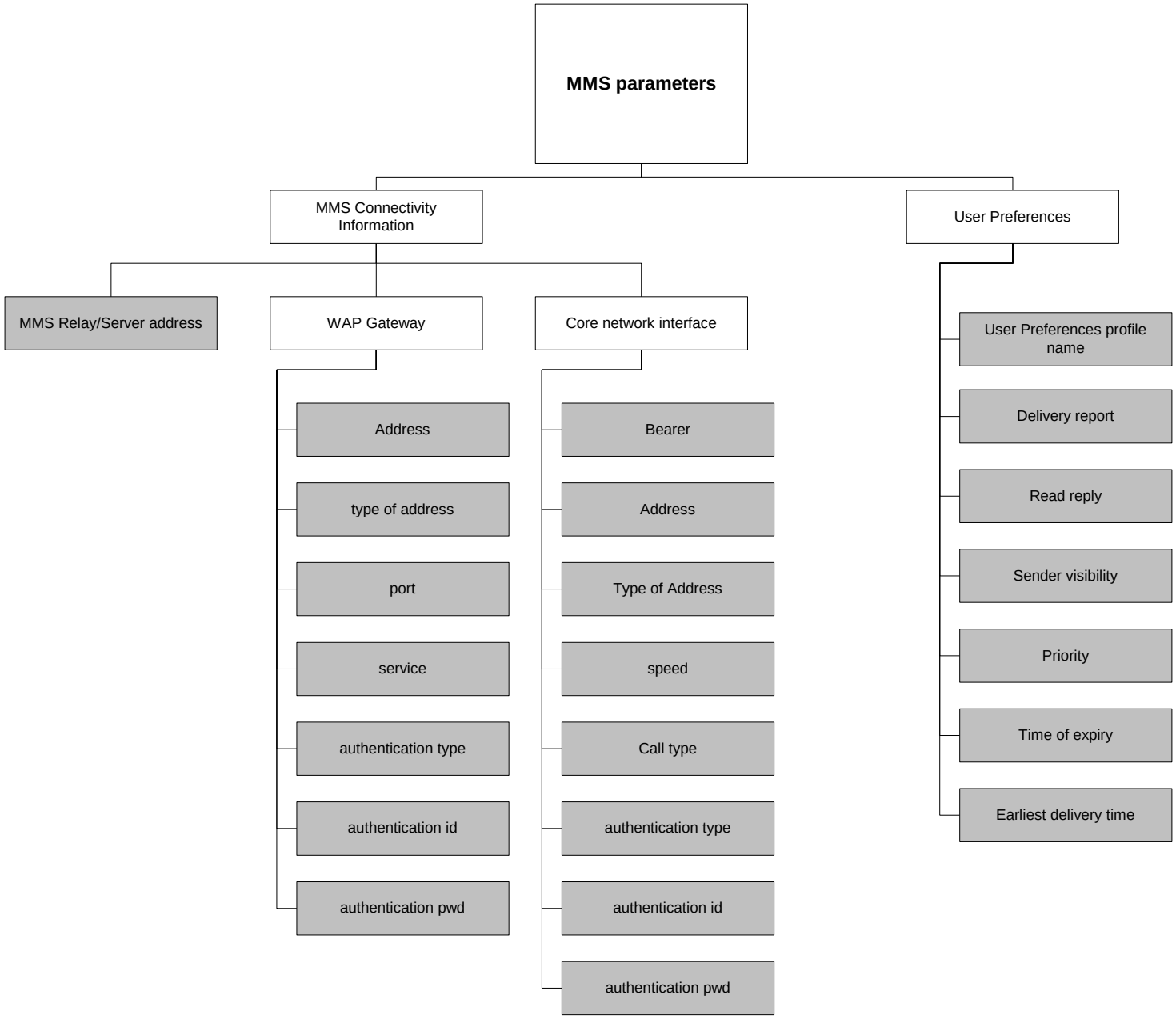
- QoS 23.107: provides a description of the QoS parameters that a PS connection can take.

In chapter 6 a table shows the relation among the parameters from the different specifications.

2. MMS Configuration parameters in the UE

The following diagram contains the structure of the MMS Configurable parameters as it is in Annex F in TS 23.140. In the USIM specification 31.102, the same parameters are included in Elementary Files.

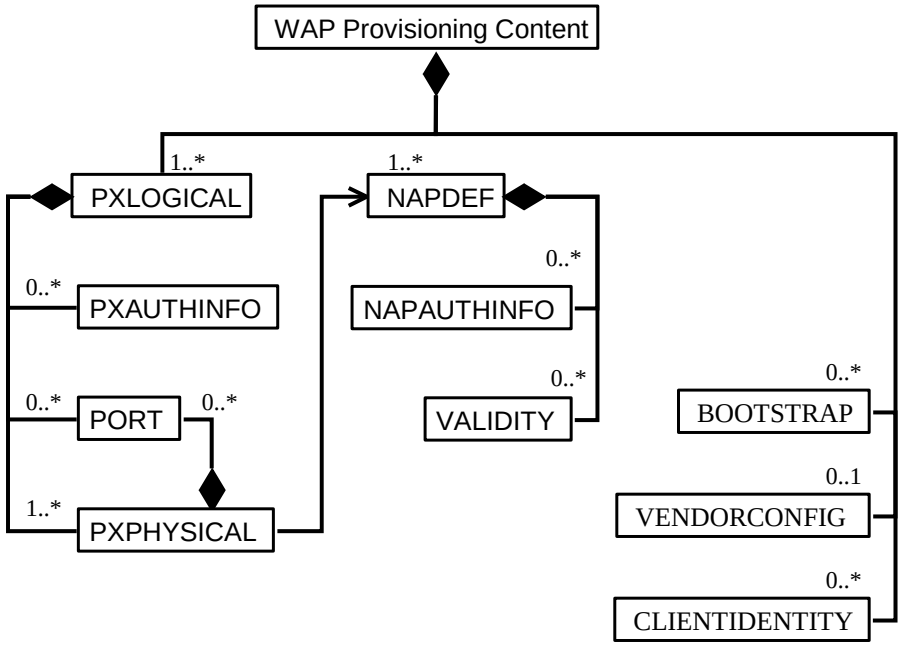
To see the complete description and possible values of the parameters please refer to TS 23.140.


MMS parameters
MMS Connectivity Information
User Preferences
MMS Relay/Server address
WAP Gateway
Core network interface
Address
type of address
port
service
authentication type
authentication id
authentication pwd
Bearer
Address
Type of Address
speed
Call type
authentication type
authentication id
authentication pwd
User Preferences profile name
Delivery report
Read reply
Sender visibility
Priority
Time of expiry
Earliest delivery time

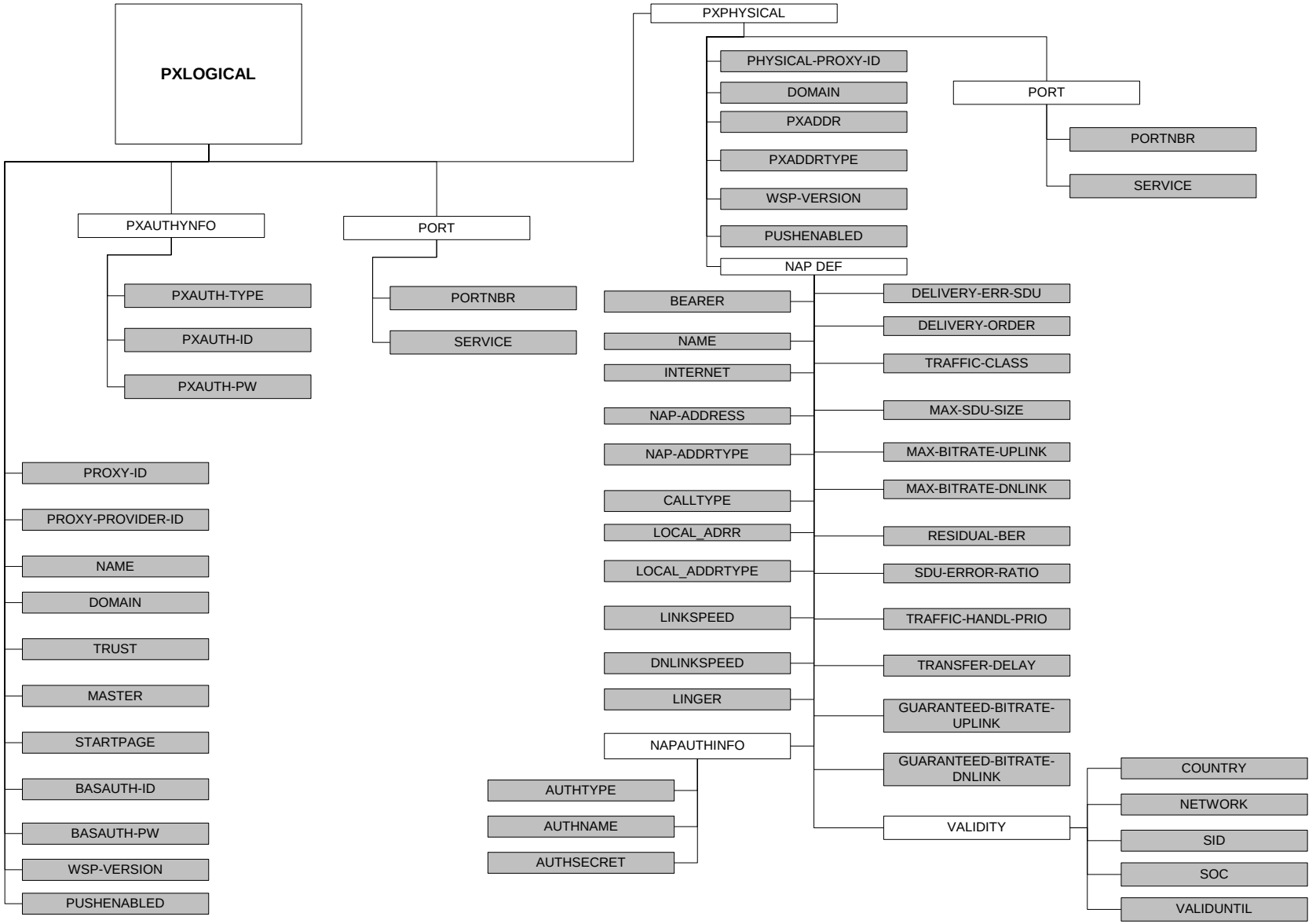
3. WAP Configuration parameters in the UE

The following diagram contains part of the structure of the WAP Provisioning content as it is described in WAP-183-ProvCont, Provisioning Content. (Not all the possible combination are included, but all the parameter names)

To see the complete description and possible values of the parameters please refer to WAP-183-ProvCont, Provisioning Content.



In the next diagram the PXLOGICAL structure is described in more detail.

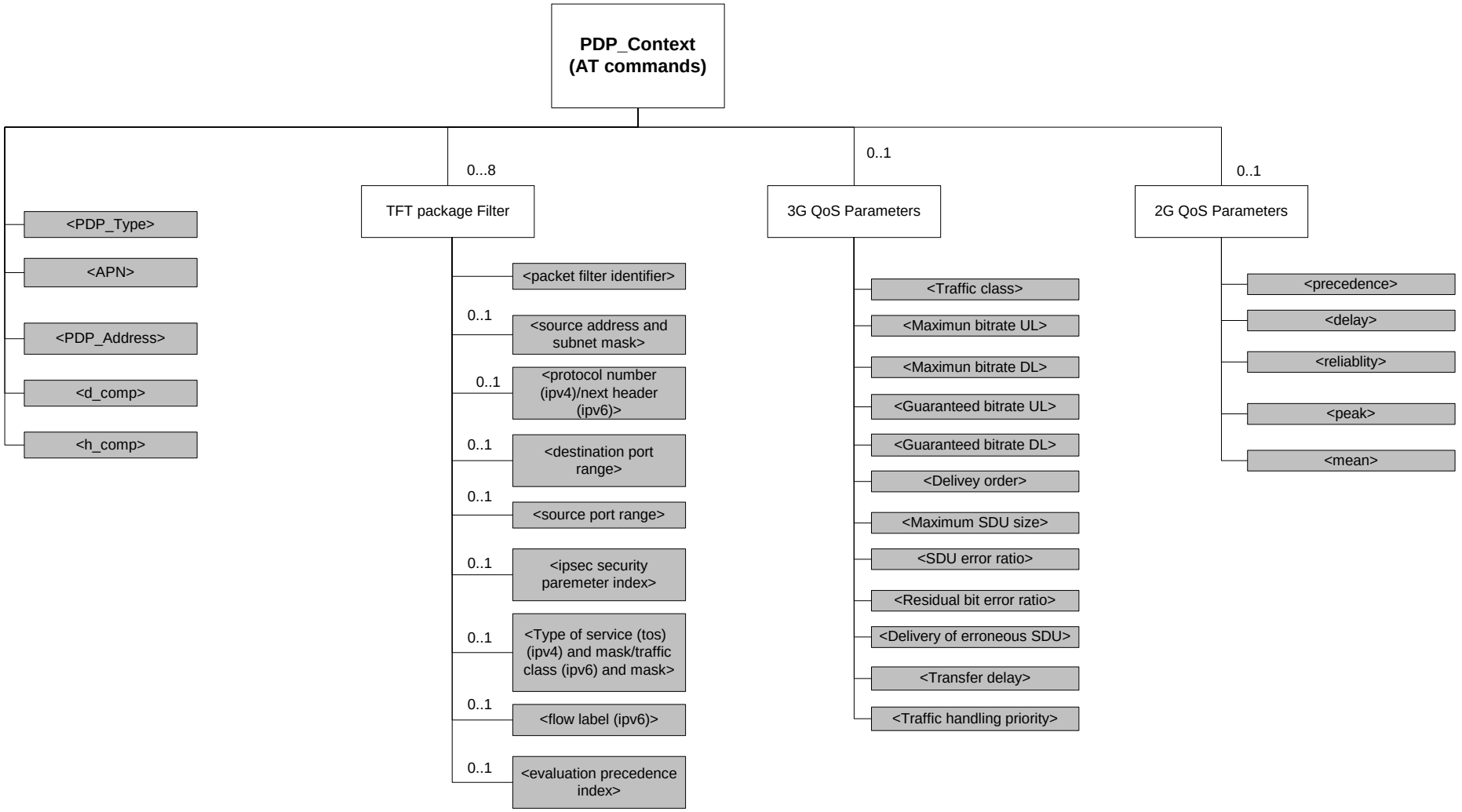

PXLOGICAL
PXPHYSICAL
PHYSICAL-PROXY-ID
DOMAIN
PXADDR
PXADDRTYPE
WSP-VERSION
PUSHENABLED
NAP DEF
PORT
PORTNBR
SERVICE
PXAUTHYNFO
PXAUTH-TYPE
PXAUTH-ID
PXAUTH-PW
PORT
PORTNBR
SERVICE
BEARER
NAME
INTERNET
NAP-ADDRESS
NAP-ADDRTYPE
CALLTYPE
LOCAL_ADRR
LOCAL_ADDRTYPE
LINKSPEED
DNLINKSPEED
LINGER
NAPAUTHINFO
AUTHTYPE
AUTHNAME
AUTHSECRET
DELIVERY-ERR-SDU
DELIVERY-ORDER
TRAFFIC-CLASS
MAX-SDU-SIZE
MAX-BITRATE-UPLINK
MAX-BITRATE-DNLINK
RESIDUAL-BER
SDU-ERROR-RATIO
TRAFFIC-HANDL-PRIO
TRANSFER-DELAY
GUARANTEED-BITRATE-UPLINK
GUARANTEED-BITRATE-DNLINK
VALIDITY
COUNTRY
NETWORK
SID
SOC
VALIDUNTIL
PROXY-ID
PROXY-PROVIDER-ID
NAME
DOMAIN
TRUST
MASTER
STARTPAGE
BASAUTH-ID
BASAUTH-PW
WSP-VERSION
PUSHENABLED

4. AT Commands

4.1 PS DataCom Configuration parameters via AT commands in the UE

The following diagram contains the structure of the PDP Context Configuration parameters as they are in described in TS 27.007

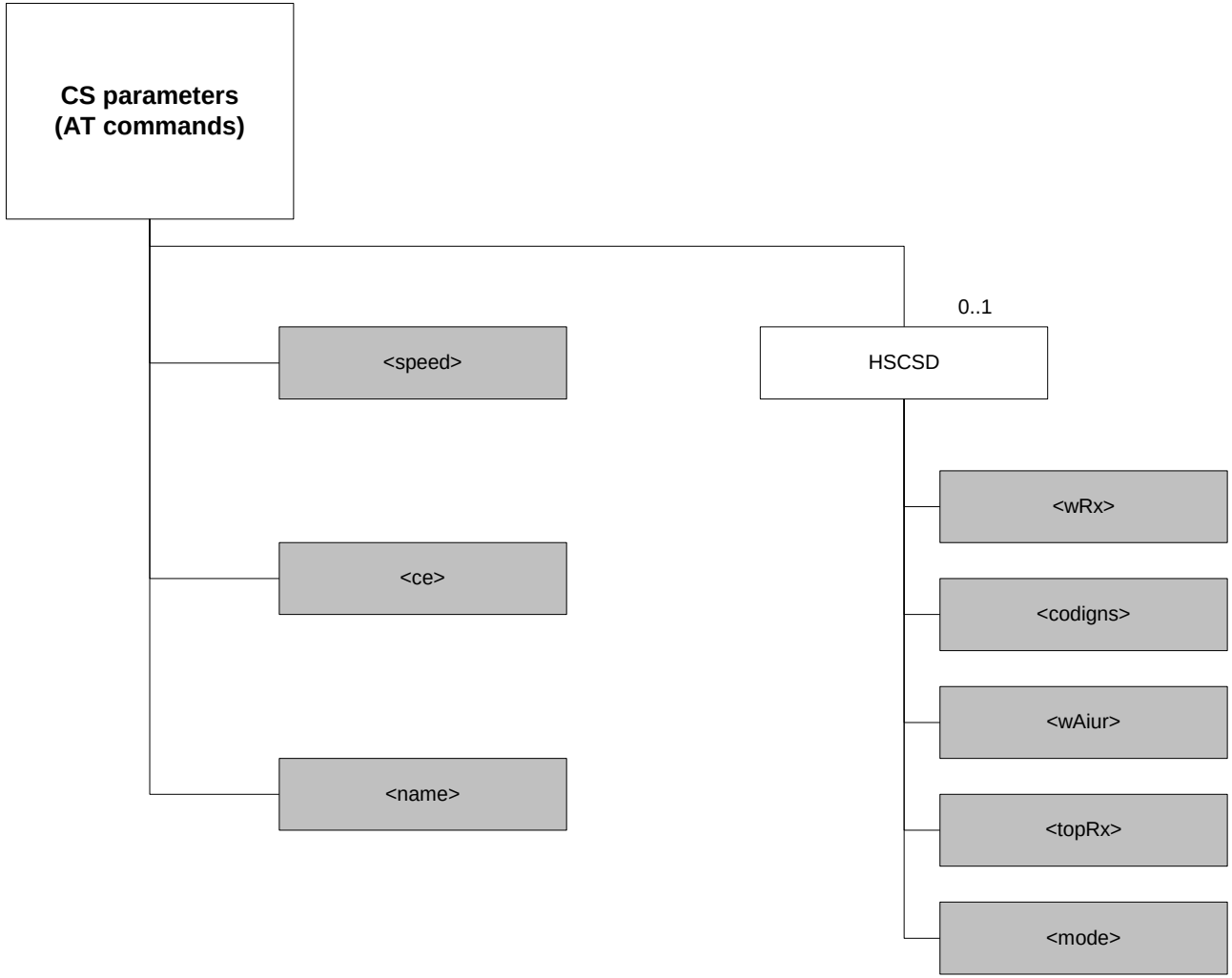
To see the complete description and possible values of the parameters please refer to TS 27.007.


PDP_Context
(AT commands)
<PDP_Type>
<APN>
<PDP_Address>
<d_comp>
<h_comp>
0...8
TFT package Filter
<packet filter identifier>
0..1
<source address and subnet mask>
0..1
<protocol number (ipv4)/next header (ipv6)>
0..1
<destination port range>
0..1
<source port range>
0..1
<ipsec security paremeter index>
0..1
<Type of service (tos) (ipv4) and mask/traffic class (ipv6) and mask>
0..1
<flow label (ipv6)>
0..1
<evaluation precedence index>
0..1
3G QoS Parameters
<Traffic class>
<Maximun bitrate UL>
<Maximun bitrate DL>
<Guaranteed bitrate UL>
<Guaranteed bitrate DL>
<Delivey order>
<Maximum SDU size>
<SDU error ratio>
<Residual bit error ratio>
<Delivery of erroneous SDU>
<Transfer delay>
<Traffic handling priority>
0..1
2G QoS Parameters
<precedence>
<delay>
<reliablity>
<peak>
<mean>

4.2 CS DataCom Configuration parameters via AT commands in the UE

The following diagram contains the structure of the Circuit Switch bearer services Configuration parameters, as they are described in TS 27.007

To see the complete description and possible values of the parameters please refer to TS 27.007.

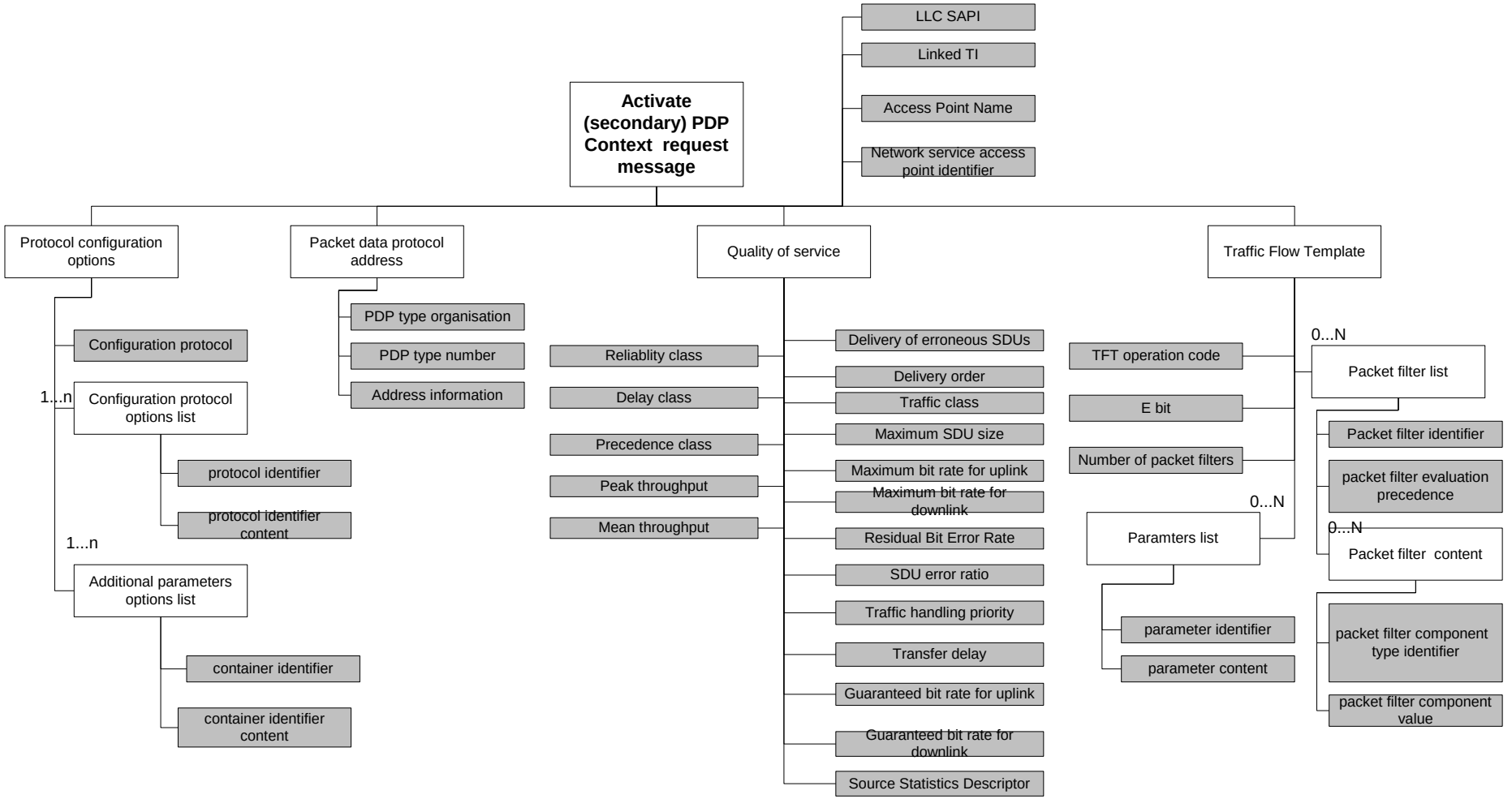

CS parameters
(AT commands)
<speed>
<ce>
<name>
0..1
HSCSD
<wRx>
<codigns>
<wAiur>
<topRx>
<mode>

5. Core Network

5.1 Activate PDP context Request Message Information Elements

The following diagram contains the structure of the Information Elements that composes the Activate (secondary) PDP Context Request Message, as they are described in TS 24.008 (Not all the Information Elements are configurable via AT commands or by the user!)

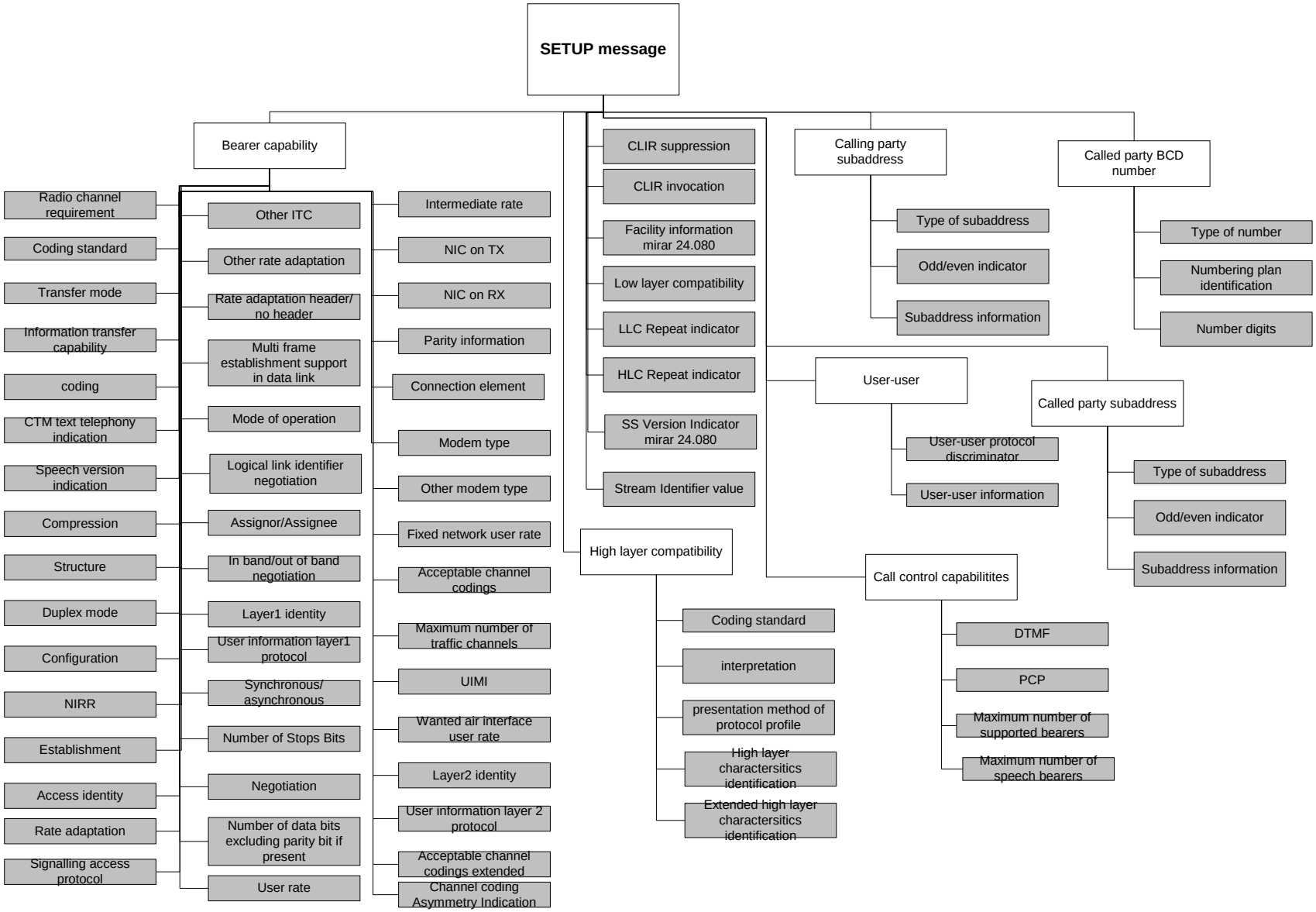
To see the complete description and possible values of the parameters please refer to TS 24.008.


Activate (secondary) PDP Context request message
LLC SAPI
Linked TI
Access Point Name
Network service access point identifier
Protocol configuration options
Packet data protocol address
Quality of service
Traffic Flow Template
Configuration protocol
1...n
Configuration protocol options list
protocol identifier
protocol identifier content
1...n
Additional parameters options list
container identifier
container identifier content
PDP type organisation
PDP type number
Address information
Reliablity class
Delay class
Precedence class
Peak throughput
Mean throughput
Delivery of erroneous SDUs
Delivery order
Traffic class
Maximum SDU size
Maximum bit rate for uplink
Maximum bit rate for downlink
Residual Bit Error Rate
SDU error ratio
Traffic handling priority
Transfer delay
Guaranteed bit rate for uplink
Guaranteed bit rate for downlink
Source Statistics Descriptor
TFT operation code
E bit
Number of packet filters
0...N
Paramters list
parameter identifier
parameter content
0...N
Packet filter list
Packet filter identifier
packet filter evaluation precedence
0...N
Packet filter content
packet filter component type identifier
packet filter component value

5.2 SETUP Message Information Elements

The following diagram contains the structure of the Information Elements that composed the SETUP Message, as they are described in TS 24.008 (Not all the Information Elements are configurable via AT commands or by the user!)

To see the complete description and possible values of the parameters please refer to TS 24.008.


SETUP message
Bearer capability
Radio channel requirement
Coding standard
Transfer mode
Information transfer capability
coding
CTM text telephony indication
Speech version indication
Compression
Structure
Duplex mode
Configuration
NIRR
Establishment
Access identity
Rate adaptation
Signalling access protocol
Other ITC
Other rate adaptation
Rate adaptation header/ no header
Multi frame establishment support in data link
Mode of operation
Logical link identifier negotiation
Assignor/Assignee
In band/out of band negotiation
Layer1 identity
User information layer1 protocol
Synchronous/ asynchronous
Number of Stops Bits
Negotiation
Number of data bits excluding parity bit if present
User rate
Intermediate rate
NIC on TX
NIC on RX
Parity information
Connection element
Modem type
Other modem type
Fixed network user rate
Acceptable channel codings
Maximum number of traffic channels
UIMI
Wanted air interface user rate
Layer2 identity
User information layer 2 protocol
Acceptable channel codings extended
Channel coding Asymmetry Indication
CLIR suppression
CLIR invocation
Facility information mirar 24.080
Low layer compatibility
LLC Repeat indicator
HLC Repeat indicator
SS Version Indicator mirar 24.080
Stream Identifier value
High layer compatibility
Coding standard
interpretation
presentation method of protocol profile
High layer charactersitics identification
Extended high layer charactersitics identification
Calling party subaddress
Type of subaddress
Odd/even indicator
Subaddress information
Called party BCD number
Type of number
Numbering plan identification
Number digits
User-user
User-user protocol discriminator
User-user information
Called party subaddress
Type of subaddress
Odd/even indicator
Subaddress information
Call control capabilitites
DTMF
PCP
Maximum number of supported bearers
Maximum number of speech bearers

6. Summary of MMS-DataCom Configuration parameters in the UE

The following table combines all the previous names. It contains the configurable DataCom parameter names given in the MMS, USIM, WAP, AT commands, Core Network protocol and QoS specifications. (To see the complete description and possible values of the parameters please refer to the corresponding specification shown by the column label)

Each row corresponds to a parameter, which is called and described in different ways, depending on which specifications are referenced. For some of them it is obvious that they are the same, but in other cases only by looking at the possible values and descriptions it is possible to recognize that they refer to the same parameter.

This table highlights the **need to have a common identifier and a common description for each of them, independent of the used transport format or specification**.

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
1.	MMS Relay/Server address	EF_{MMSCP} (MMS Connectivity Parameters) MMS Relay/server Tag '81'	-	-	-	-
	MMS gateway/proxy					
2.	Address	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXPHYSICAL/PXADDR	-	-	-
3.	type of address	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXPHYSICAL/PXADDRTYPE	-	-	-
4.	Port	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXPHYSICAL/PORTNBR or PXLOGICAL/PORTNBR	-	-	-
5.	Service	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXPHYSICAL/SERVICE or PXLOGICAL/SERVICE	-	-	-

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
6.	authentication type	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXAUTHINFO/PXAUTH-TYPE	-	-	-
7.	Authentication id	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXAUTHINFO/PXAUTH-ID	-	-	-
8.	Authentication pw	EF_{MMSCP} (MMS Connectivity Parameters) MMS Gateway Tag '83'	PXAUTHINFO/PXAUTH-PWD	-	-	-
	Core Network Interface					
9.	Bearer	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPDEF/BEARER	-	-	-
10.	Address	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPDEF/NAP-ADDRESS	PS: <APN>	PS: Access Point Name CS: Called party BCD number-Number digits	-
11.	Type of address	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPDEF/NAP-ADDTYPE	-	CS: Called party BCD number-Type of number Called party BCD number-Numbering plan identification	-
12.	Speed	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPDEF/LINKSPEED NAPDEF/DNLINKSPEED	<speed>	CS: Fixed network user rate	-

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
13.	call type	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPDEF/CALLTYPE	<speed>	Modem type Other modem type User rate Rate adaptation Other Rate adaptation	-
14.	authentication type	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPAUTHINFO/AUTHTYPE	-	protocol identifier?	-
15.	authentication id	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPAUTHINFO/AUTHNAME	-	-	-
16.	authentication pw	EF_{MMSCP} (MMS Connectivity Parameters) Interface to Core Network and Bearer Tag '82'	NAPAUTHINFO/AUTHSECRET	-	-	-
17.	-	-	NAPDEF/LOCAL-ADDR	<PDP_address>	Address information	-
18.	-	-	NAPDEF/LOCAL-ADDRTYPE	<PDP_type>	PDP type organization PDP type number	-
19.	-	-	-	<d_comp>	-	-
20.	-	-	-	<h_comp>	-	-
				TFT		
21.	-	-	-	<packet filter identifier>	Packet filter identifier	-

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
22.	-	-	-	<source address and subnet mask>	packet filter component type identifier packet filter component value	-
23.	-	-	-	<protocol number (ipv4)/next header (ipv6)>	packet filter component type identifier packet filter component value	-
24.	-	-	-	<destination port range>	packet filter component type identifier packet filter component value	-
25.	-	-	-	<source port range>	packet filter component type identifier packet filter component value	-
26.	-	-	-	<ipsec security paremeter index>	packet filter component type identifier packet filter component value	-

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
27.	-	-	-	<Type of service (tos) (ipv4) and mask/traffic class (ipv6) and mask>	packet filter component type identifier packet filter component value	-
28.	-	-	-	<flow label (ipv6)>	packet filter component type identifier packet filter component value	-
29.	-	-	-	<evaluation precedence index>	packet filter evaluation precedence	-
				3G QoS		
30.	-	-	NAPDEF/DELIVERY-ERR-SDU	<Delivery of erroneous SDUs>	Delivery of erroneous SDUs	Delivery of erroneous SDUs
31.	-	-	NAPDEF/DELIVERY-ORDER	<Delivery order>	Delivery order	Delivery order
32.	-	-	NAPDEF/TRAFFIC-CLASS	<Traffic class>	Traffic class	Traffic class
33.	-	-	NAPDEF/MAX-SDU-SIZE	<Maximum SDU size>	Maximum SDU size	Maximum SDU size
34.	-	-	MAX-BIT-RATE-UPLINK	<Maximum bitrate UL>	Maximum bit rate for uplink	Maximum bitrate
35.	-	-	MAX-BIT-RATE-DNLINK	<Maximum bitrate DL>	Maximum bit rate for downlink	Maximum bitrate
36.	-	-	RESIDUAL-BER	<Residual bit error ratio>	Residual Bit Error Rate	Residual BER

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
37.	-	-	SDU-ERROR-RATE	<SDU error ratio>	SDU error ratio	SDU error ratio
38.	-	-	TRAFFIC-HANDL-PRIO	<Traffic handling priority>	Traffic handling priority	Traffic handling priority
39.	-	-	TRANSFER-DELAY	<Transfer delay>	Transfer delay	Transfer delay
40.	-	-	GUARANTEED-BITRATE-UPLINK	<Guaranteed bitrate UL>	Guaranteed bit rate for uplink	Guaranteed bit rate
41.	-	-	GUARANTEED-BITRATE-DNLINK	<Guaranteed bitrate DL>	Guaranteed bit rate for downlink	Guaranteed bit rate
42.	-	-	-	-	-	Source statistics descriptor ('speech'/'unknown')
				2G QoS		
43.	-	-	-	<precedence>	Precedence class	Precedence class
44.	-	-	-	<delay>	Delay class	Delay class
45.	-	-	-	<reliability>	Reliablity class	Reliability class
46.	-	-	-	<peak>	Peak throughput	Peak throughput class
47.	-	-	-	<mean>	Mean throughput	Mean throughput class
				CS and HSCSD		
48.	-	-	-	<ce>	Connection element	-
49.	-	-	-	<name>	Synchronous/asynchronous Transfer mode	-

	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
50.	-	-	-	<wRx>	Maximum number of traffic channels	-
51.	-	-	-	<codings>	Acceptable channel codings Acceptable channel codings extended	-
52.	-	-	-	<wAiur>	Wanted air interface user rate	-
53.	-	-	-	<topRx>	Maximum number of traffic channels	-
54.	-	-	-	<mode>	Channel coding Asymmetry Indication	-
	User Preferences/ **Notifications**					
55.	-	EF_{MMSN} (MMS Notification) - MMS Implementation	-	-	-	-
56.	-	EF_{MMSUP} (MMS User Preferences) - MMS User preference profile name Tag '81'	-	-	-	-
57.	Delivery report	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'	-	-	-	-
58.	Read reply	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'	-	-	-	-

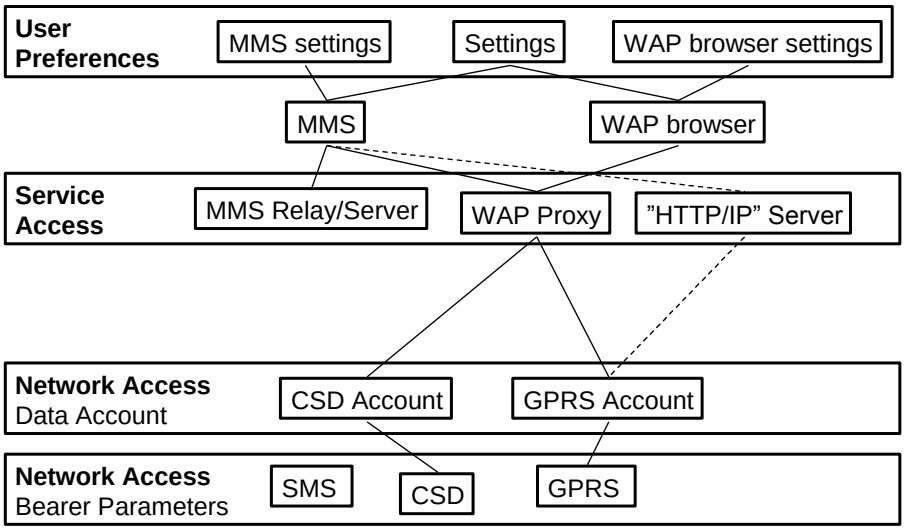
	MMS 23.140	USIM 31.102	WAP Provisioning Content WAP-183-ProvCOnt-20010724-a	AT commands 27.007	CN protocol 24.008	QoS 23.107
59.	Sender visibility	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'	-	-	-	-
60.	Priority	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'		-	-	-
61.	Time of expiry	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'	-	-	-	-
62.	Earliest delivery time	EF_{MMSUP} (MMS User Preferences) MMS User Preference information Tag '82'	-	-	-	-

7. Conclusions

Ed Note - A way forward to ensure correct and consistent handling of the MMS-Datacom parameters in the development of all relevant specifications needs to be discussed.

The previous table indicates that there is a need to:

- Defining a entry point with unique descriptions for the DataCom parameters, that the other specs (MMS, WAP, AT…) can refer to, in order to keep consistency within the specifications.
- Structuring the DataCom parameters in order to re-use the same parts used by different services/applications. The structure could be like this:



The DDM concept, TS 23.241, was developed with requirement as above in mind, and one way to ensure controlled handling of the MMS-Datacom parameters is to apply the DDM by defining common objects.

The next step is to define the attributes and data types for the parameters listed in the previous table.

8. References

[1] 3GPP TS 24.008 Core Network Protocol

[2] 3GPP TS 23.107 QoS Concept and Architecture

[3] 3GPP TS 23.140: "Multimedia Messaging Service; Stage 2". V5.1.0

[4] 3GPP TS 32.102 USIM

[5] 3GPP 27.007 AT commands

[6] WAP-183-ProvCont, Provisioning Content

Annex B4 IMS Parameters

(tbd)

Annex C Change history

Change history							
Date	**TSG #**	**TSG Doc.**	**CR**	**Rev**	**Subject/Comment**	**Old**	**New**
2001-11					Submitted by T2 to TSG-T for preliminary information		0.1.0
2001-12					Added GPRS examples to Annex B	0.1.0	0.2.0
2002-02					After T2GUP#1 Example of work procedure added to chapter 5 In annex B1the files gprsDatatype.xml gprsDatatype.html and gprsDatatype.xsd are replaced by new versions. In annex B3 draft of data requirements added	0.2.0	0.3.0
2002-05					V0.3.1 after T2 SWG2 #17 Editorial and content changes based on T2-020445.	0.3.0	0.3.1
2002-11					V0.3.2 after T2 SWG2 #18 Enhancement of Intro, Scope, Backgnd per T2-020706.	0.3.1	0.3.2
2003-08					v0.4.0 changes per T2-030423	0.3.2	0.4.0
2003-10					v0.4.1 after T2 SWG2_5 Cleaning of the document	0.4.0	0.5.0