3GPP - TSG SA #5 **Tdoc SP-99391**
11-13 October, 1999
Kyongju, Korea

Title: 3G TR 30.802 V 1.0.0:
Project plan on Bearer Services and QoS

Date: 1999-10-06

Source: S2

Purpose: For information

Agenda Point: 5.2.3

The attached document contains version 1.0.0 of the Project plan on Bearer Services and QoS.

3G TR 30.802 1.0.0 (1999-10)

Permanent Document

3rd Generation Partnership Project
3GPP work program
Project co-ordination aspects
Project Plan: Bearer Services & QoS
(3G TR 30.802 Bearer & QoS version 1.0.0)

Reference

DTR/TSGS-0230802U

Keywords

Location services (LCS),
Digital cellular telecommunications system,
Universal Mobile Telecommunication System (UMTS),
UTRA, UTRAN, IMT-2000

3GPP

Postal address

3GPP support office address

650 Route des Lucioles - Sophia Antipolis
Valbonne - FRANCE
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Internet

http://www.3gpp.org

Contents

Foreword 4
1 Scope 4
2 References 4
3 Release 99 4
3.1 Work identified to fulfill the requirements for R99 4
3.1.1 Work to be done by TSG SA 4
3.1.1.1 Work to be done by WG S1 4
3.1.1.2 Work to be done by WG S2 5
3.1.1.3 Work to be done by WG S5 5
3.1.2 Work to be done by TSG RAN 5
3.1.2.1 Work to be done by WG R1 5
3.1.2.2 Work to be done by WG R2 5
3.1.2.3 Work to be done by WG R3 6
3.1.3 Work to be done by TSG CN 6
3.1.3.1 Work to be done by WG N1 6
3.1.3.2 Work to be done by WG N2 6
3.1.3.3 Work to be done by WG N3 6
3.1.4 Work to be done by TSG T 6
3.1.4.1 Work to be done by WG T2 6
3.2 List of all the deliverables applicable to the subject 6
3.3 Time plan 9
4 Release 00 11
5 Change history 12
6 Annex A: Scope of the packet and circuit architecture project co-ordination ad-hoc group 13
7 Annex B: Contact person 13

Foreword

[Ed note: to be added by ETSI MCC]

1 Scope

This Permanent document describes the work program for the Bearer Services and Quality of Service architecture for the packet and circuit switched domains in UMTS.

2 References

References may be made to:

a) specific versions of publications (identified by date of publication, edition number, version number, etc.), in which case, subsequent revisions to the referenced document do not apply; or

b) all versions up to and including the identified version (identified by "up to and including" before the version identity); or

c) all versions subsequent to and including the identified version (identified by "onwards" following the version identity); or

d) publications without mention of a specific version, in which case 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.

3 Release 99

3.1 Work identified to fulfill the R99 requirements

3.1.1 Work to be done by TSG SA

3.1.1.1 Work to be done by WG S1

Requirement and definition for UMTS Bearer Services.

Requirement and definition of QoS classes

(Editor´s note: currently there are four QoS classes defined, namely conversational, interactive, streaming, and background).

Requirement and definition of charging-sensitive QoS parameters; the architectural parameters in 23.907 may be used for this purpose..

(Editor´s note: Out of the number of QoS parameters defined for the UMTS architecture, some are specially suited to be charged for, because of their direct implication in resource allocation; e.g., in the radio interface. Some examples are: maximum bitrate, guaranteed bitrate, and delay. An early identification of those parameters is key to involve SA5 in the charging mechanisms required for the architecture).

3.1.1.2 Work to be done by WG S2

Requirements to provide a framework for Quality of Service in UMTS; i.e., the definition of a QoS concept and architecture for both, the circuit switched and packet domains. The architecture shall take the SA1 requirements for Bearer Services and QoS.

Requirements to consider the network services as end-to-end. The requirements for the Bearer Services shall bear in mind the support of a specific QoS requested by the subscriber, the challenge is large because it cannot be assumed that the *applications* (; e.g., IP-based applications) are UMTS-aware. In other words, SA2 shall require that UMTS must support fixed network applications expected to run on a wired internet.

Requirements to specify the QoS characteristics to be supported by defined Bearer Services.

Likewise, requirements for a Bearer Service to include all aspects to enable the provision of a contracted QoS. Some of these aspects include control signalling, user plane transport, and QoS management functionality.

Specifically, requirements to define a set of QoS parameters and their value ranges. These parameters need to have a one-to-one or one-to-many QoS parameter mapping needed by other interfaces under the responsibility of other SA, RAN, Core Network, and Terminal TSGs. For simplicity, it shall also be a requirement to specify a small number of QoS parameters where a one-to-one mapping can be achieved.

Requirement and definition of sub-classes or a *priority mechanism* to encourage a user-friendly handling of the QoS classes defined by SA1.

(Editor´s note: SA2 and SA1 may consider within this topic a reasonable set of sub-classes, where each QoS class might entail, for instance: a Premium, Standard, and Normal (1, 2, 3) sub-classes. However, regardless of the number of sub-classes, the objective of this simplified approach is to facilitate an easy setting of all QoS parameters by the UE and/or the network. In this eyample, the subscriber would only have to choose one of three sub-classes, as opposed to setting values for each of the available QoS parameters visible to him/her or to the UE. Following on the example, on a first classification, a sub-class 1 might be assigned to a dedicated channel, whereas sub-classes 2 and 3 to common channels).

3.1.1.3 Work to be done by WG S5

Specification of charging-sensitive QoS parameters, after SA1 requirements and using the defined parameters in the QoS Concept and Architecture, 23.907.

(Editor´s note: TS 22.115 already states requirements for QoS-sensitive parameter definition. However, the specific parameter are still to be defined).

3.1.2 Work to be done by TSG RAN

3.1.2.1 Work to be done by WG R1

QoS, under study.

(Editor´s note. RAN1´s input is required).

3.1.2.2 Work to be done by WG R2

Requirements of UMTS Radio Access Bearers (RABs), bearer management in Layer 2, and RRC protocols implications to the UMTS system architecture.

QoS requirement implications to Layer 2 and Radio Resource Control (RRC).

3.1.2.3 Work to be done by WG R3

From Bearer Services perspective, requirements of UMTS Radio Access Bearers (RABs) and bearer management in the Iu and Iub interfaces. Requirements for RAB parameters and RANAP RAB assignment.

For QoS, requirement implications to the UTRAN architecture: Iu, Iur, and Iub interfaces. QoS parameter mapping from 23.907 in those three interfaces. Specifically, detailed definition of RAB parameters in the RANAP protocol based on 23.907.

3.1.3 Work to be done by TSG CN

3.1.3.1 Work to be done by WG N1

Bearer Service implication requirements to the Call Control, Mobility Management, and Session Management protocols.

QoS requirements to the Call Control, Mobility Management, and Session Management. QoS parameter mapping in the Iu interface, core network interfaces, and upper layers to transport layers protocols.

3.1.3.2 Work to be done by WG N2

Bearer Service implication requirements to GTP, MAP, and CAP protocols.

QoS requirements to GTP, MAP, and CAP.

3.1.3.3 Work to be done by WG N3

Bearer Services requirements for interworking to external networks.

QoS requirement for interworking to external networks. QoS parameter mapping at the PLMN border.

3.1.4 Work to be done by TSG T

3.1.4.1 Work to be done by WG T2

Bearer Service requirements on the UEs.

QoS requirements on the UEs.

3.2 List of all the deliverables applicable to the subject

List of deliverables					
Del #	**Title**	**Working Group**	**Editor***	**Completion date***	**Comment**
TS 22.105	Services and Service Capabilities	S1	Wayne Ashwell		Current ver. 3.5.0 (5/99)
TS 22.115	Charging and Billing	S1			Current ver. 3.1.0

TS 23.110	UMTS Access Stratum; Services and Functions	S2	Oscar Lopez-Torres	9/99	Current ver. 3.2.1 (9/99)
TR 23.907	QoS Concept and Architecture	S2	Juha Kalliokulju	10/99	Current ver. 2..0.0 (10/99)
TS 23.060	GPRS Stage 2	S2/N2 (?)		11/99	
TR 23.920	Evolution of the GSM platform towards UMTS	S2		6/2000	
TS 25.212	Multiplexing and Channel Coding - FDD	RAN1			
TS 25.222	Multiplexing and Channel Coding – TDD	RAN1			
TS 25.302	Service Provided by the Physical Layer	RAN2		11/99	
TS 25.413		RAN3		12/99	
TS 25.415	UTRAN Iu Interface User Plane Protocols	RAN3		10/99	Current ver.
TS 23.108	Stage 2	N1			23.060 provides Stage 2 for PS. 23.108 could be used for the same purpose on CS side e.g. to give arrow diagrams on BC negotiation and ICM procedures.
TS 24.008	CC Bearer Capability changes	N1			Bearer Capability IE enhanced for R99 with new fields and code points for new codecs and data rates.
TS 24.008	CS service up- and downgrading, In-Call Modification	N1			Bearer Capability negotiation must allow negotiation of flexible data rates (requested and minimum acceptable) ICM should be enhanced to allow flexible change from one service to another.
TS 24.008	PS QoS Bearer Capability changes	N1			Enhancements of the existing QoS IE for R99
09.18					
TS 23.008	Organization of Subscriber Data	N2			
TS 23.016	Subscriber Data Management	N2			
TS 23.078	Camel Stage 2	N2			
TS 29.009	Mobile Application Part (MAP)	N2			
TS 29.060 (?)	GPRS Tunnel Protocol (GTP)	N2			

TS 29.078	Camel Application Part (CAP)	N2			
TS 29.007	General Requirements on Interworking between the PLMN and the ISDN or PSTN	N3		12/99	Current version 3.1.0
TS 29.061	Inter-working between the Public Land Mobile Network (PLMN) supporting GPRS and Packet Data Networks (PDN)	N3			Current version 3.1.0
TS 27.060	Mobile Station supporting GPRS	N3		12/99	Current version 3.1.0

*Information to be provided by the secretary.

Editor´s note: SA5´s and T2´s deliverables are required in this table.

3.3 Time plan

The Format is for further study and should be in line with the format of the meeting schedule maintained by the MCC.

This time plan is a project plan, including the completion date of all the deliverables.

	Calendar week (99), week 30= 26.7. to 1.8.99																	
Document	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
22.105																	S1	
22.115																	S1	
23.110 for QoS					S2													
23.907											S2							
23.060																	S2	
23.920																		->00
25.212											R1							
25.222											R1							
25.302											R2							
25.413																	R3	
25.415											R3							
23.108																		N1
24.108																		N1
09.18																		N1
23.008																		N2
23.016																		N2
23.078																		N2
29.009																		N2
29.060																		N2
29.078																		N2
29.007																N3		
29.061																N3		
27.060																N3		

An underlined entry in the table indicates that the listed document is planned for completion in that meeting.

1999 3GPP MEETING CALENDAR (TSG SA, CN, & RAN)

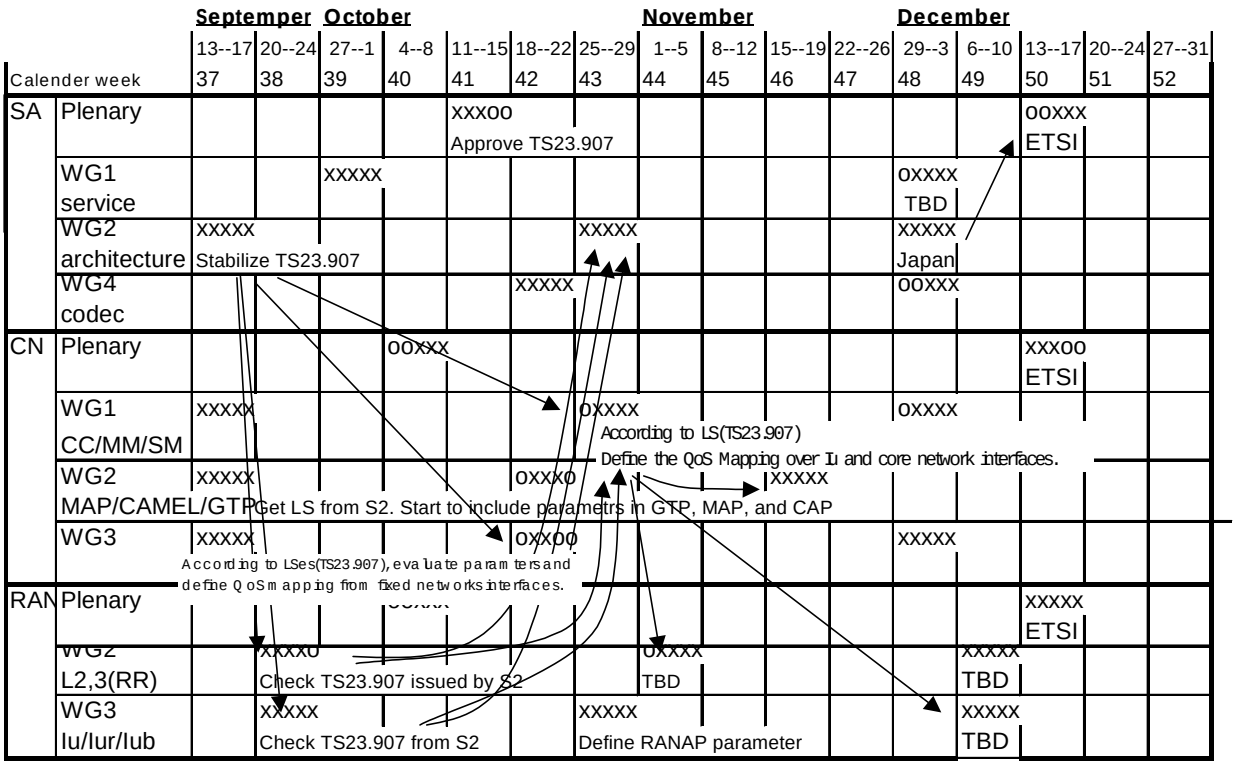

Figure 3.3-1. TS 23.907 QoS Architecture Provisioning to Other STGs to Continue Work on Parameter Mapping.

4 Release 00

Same structure as for R99. Plan TBD.

5 Change history

Change history					
SA2 No.	**TDoc. No.**	**CR. No.**	**Section affected**	**New version**	**Subject/Comments**
#7	S299791		3.1.1.1, 3.1.1.2, 3.1.2.1, 3.1.2.2, 3.1.2.3, 3.1.3.1, 3.1.3.2, 3.1.3.3, 3.1.4.1, 3.2, 3.3, 5, Annex A, and Annex B	0.0.1	TSG work description reflects now more the requirements as opposed to technical issues and solutions.
#8	S299833		3.1.1.1 3.1.1.3 3..1.3.3 3.2 Annex B	0.1.1	- QoS Subclasses discussion between SA2 and SA1 - QoS Charging-sensitive parameters definition - Addition of new subsection to include SA5 work to support QoS charging-sensitive parameter mechanism - Provide CN3 with input for their next meeting. Feedback to SA2 is expected. - Addition of charging and billing deliverable - Addition of N3 deliverables. Due dates are expected from N3 - Addition of QoS contact point at SA1
SA2 Drafting Session for presentation to SA#5			TR Title 3.1.1.1 3.1.1.2 3.2 3.3 Annex B	1.0.0	- Inclusion of New TR number - Updates according to SA1/SA2 meeting - Updates according to SA2 approved contributions - Addition of N2 specifications, deletion of S2/SA1 non-relevant specs - Update of N3 deliverable titles after N3 comments - Update to Time Plan and addition of Figure to show current Architecture Document status for info. To other STGs - Addition of deliverables pertaining to N1, after N1´s comments - Addition of deliverables due dates pertaining to N3, after N3´s comments - Addition of contact persons

6 Annex A: Scope of the Bearer Services and QoS project co-ordination ad-hoc group

Scope of the ad-hoc group (similar, but not identical as to the current Overall Project Plan).

The scope shall be to provide requirements for a consistent definition of the Bearer Services mapping throughout the system: UMTS bearers, bearer management in the control and user planes, for the circuit switched and packet domains.

Regarding QoS, the scope shall provide requirements for a comprehensive QoS model and architecture for parameters at the different interfaces, reference points, and layers (a two-dimensional approach) throughout the system.

7 Annex B: Contact person

Group	Contact person*	Email
S1	Alan Cox Tommi Kokkola	Alan.Cox@vf.vodafone.co.uk Tommi.Kokkola@nokia.com
S2	Oscar Lopez-Torres	oscar.lopez@t-mobil.de
S5	Albert Yuhan	ayuhan@omnipoint-pcs.com
R1	Antti Toskala	Antti.toskala@nokia.com
R2	Denis Fauconnier	dfauconn@nortel.com
R3	Per Willars Atte Länsisalmi Jean-Marie Calmel	Per.willars@era.ericsson.se Atte.lansisalmi@research.nokia.com Calmel@nortelnetworks.com
N1	Hannu Hietalahti	Hannu.hietalahti@nokia.com
N2	Ian Park	ian.park@VF.Vodafone.CO.UK
N3	 Achim Braun Erik Colban	Achim.braun@alcatel.de Erik.a.colban@ericsson.no
T2	 Peter Neumann	kevin.holley@bt.com peter.neumann@mch.siemens.de

*Where no contact person is nominated the chair man of the group is contact person