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Title: Draft UMTS 30.00
Universal Mobile Telecommunications System;
SMG Work Programme for UMTS

Document for: Information

Agenda item: 10

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Draft UMTS 30.00 v3.7.06.1 (1999-024)

Technical Specification

**Universal Mobile Telecommunications System;
SMG Work Programme for UMTS
(UMTS 30.00 draft version 3.7.06.1 - To be Approved by E-mail
after SMG#287)**

UMTS

Universal Mobile
Telecommunications System



Reference

REPORT 02 JUNE 20 JUNE 1997

Keywords

Universal Mobile Telecommunications System (UMTS), Global Multimedia Mobility (GMM), Third Generation Global System for Mobile Communications

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3 UMTS work items

Editorial note: Responsibilities of projects and STCs especially SMG3 and SMG12 should be revised.

Work on UMTS is organised in a work item oriented way: Introduction of features, prepared by feasibility studies, accompanied by reports describing applications, typically on demand of customers. One work item will often touch several specifications. Also, the work item oriented working style helps concentrating on the necessary amount of specifications.

All details of the WI Work Item descriptions are to be provided by responsible STC and given in Annex A.

4.1 General documents, responsibility of Project GSM - UMTS

Antun Samukic is responsible within PT SMG for these documents.

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2nd resp. group in SMG | Rapporteur | Actual status For yet not approved document | Approval status: planned or approved |
|--------------------------------|--|--|--|------------------------------|---------------|---|---|
| 30.00 report | | SMG - UMTS Work programme | | SMG | Antun Samukic | | app. v.3.7.0 after SMG#287 ¹⁾ |
| 30.01 position paper | | UMTS Baseline document: Collection of the SMG's positions on the UMTS | | SMG | Antun Samukic | | app. v.3.6.0, after SMG#286 ¹⁾ |
| 30.02 report | | Experience from GSM standardisation to be applied at UMTS standardisation | | SMG | NN | | plan. v.3.0.0 when needed |
| 30.05 report | | UMTS terminology | | SMG | NN | | plan. v.3.0.0 when needed |
| 30.20 report | | Technical characteristics, capabilities and limitations of mobile satellite systems applicable to the UMTS | | SMG | Juha Rapeli | | app. v.3.1.0 SMG#24 |

1) Typically updated at each plenary

4.2 UMTS services, responsibility of Project GSM UMTS

Roger Tarazi is responsible within PT SMG for these documents.

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|--------------------------------|--|--|--|------------------------------|--|---|--------------------------------------|
| 22.01 specification | | UMTS Service principles | | SMG1 | Paul Dwyer | | appr. v. 3.4.0 SMG#287 |
| 22.05 specification | | Services and service capabilities | | SMG1 | Emmanuel Puga Pereira | | app. v.3.2+0 SMG#286 |
| 22.07 report | | UMTS Terminal and Smart Card Concepts | | SMG1 [SMG2 ,SMG9] | Tom Leskinen | | app. v.3.1.10-0 SMG#275 |
| 22.10 specification | | Service aspects of UMTS terminals and IC cards | | SMG1 [SMG9] | Tom Leskinen | | On Hold |
| 22.15 specification | | Service aspects: Charging and Billing | | SMG1, [SMG10, SMG6] | <u>Emanuele Montegross</u> <u>o, TIM</u> <u>David Chambers</u> | v.1.2.2, SMG#25 | app. 3.0.0 SMG#28 |
| 22.20 specification | | Service management | | SMG1, [SMG3, SMG6] | Paul Dwyer | v.0.0.3 | on hold |
| <u>22.21</u> specification | | <u>Virtual Home Environment</u> | | <u>SMG1</u> | | <u>v 0.4.0</u> | |
| 22.24 report | | Charging and Accounting Mechanism | | SMG1, [SMG6] | David Chambers | | app. V.3.10.0 SMG#285 |
| 22.25 report | | Quality of service and network performance | | SMG1, [SMG6] | Seppo Tianen | | app. V.3.1.0 SMG#25 |
| <u>22.29</u> specification | | <u>Handover requirements between UMTS and GSM or Other Radio Systems</u> | | <u>SMG1</u> | <u>David Cooper,</u> <u>NEC</u> | <u>v 1.0.0</u> | |
| 22.60 report | | Mobile multimedia services including mobile Intranet and Internet services | | SMG1, [SMG3] | Thomas Ahnberg | | app. V.3.0.0 SMG#25 |
| 22.70 report | | Virtual Home Environment | | SMG1 | Jumoke Ogunbekun | | app. V. 3.0.0 SMG#25 |
| 22.71 report | | Automatic establishment of roaming relations | | SMG1, [SMG3] | David Chambers | | app. V3.1.00+ SMG#287 |
| <u>22.72</u> report | | <u>Multimedia</u> | | <u>SMG1/SMG4/SMG12</u> | | | |
| 22.75 report | | Advanced addressing | | SMG1, [SMG3] | Stephan Kleier | | app. V.3.0.0 SMG#27 |
| 22.80 report | | UMTS relationship with other standards | | SMG1 [SMG] | Bo Axerud | v.2.0.1 SMG#24 | On hold |
| 22.77 report | | UMTS Service scenarios | | SMG1, [SMG] | Jumoke Ogunbekun | | plan. V.1.0.0 SMG#25 |

| | | | | | | | |
|----------------------------|--|---------------------------|--|------|---|-------------------|--------------------------------|
| 22.00 specifica tion | | UMTS phase 1 capabilities | | SMG1 | David Verrier France Telecom Emmanuel Puga Perreira | v 1.0.0 SMG#27 | app. Plan v.3.0.0 SMG#28 |
|----------------------------|--|---------------------------|--|------|---|-------------------|--------------------------------|

NOTE: The services specifications should be elaborated as “pilots”

| | Document | Editor | Version |
|---------------|--|----------------------------|----------------|
| | Work Plan, SMG2 UMTS-ARC | Chairman | |
| <u>ZZ.01</u> | UTRAN Architecture Description | Nortel / Jean-Marie Calmel | <u>v 1.0.0</u> |
| <u>ZZ.02</u> | UTRAN Functions: Examples on Signalling Procedures | CSELT / Flavio Piolini | <u>v 1.0.0</u> |
| | Requirements Relevant for UTRAN Architecture | Ericsson / Björn Ehrstedt | |
| | Manifestations of Handover and Streamlining | BT / Richard Townend | |
| <u>ZZ..11</u> | Description of Iu interface | Nokia / Atte Länsisalmi | <u>v 1.0.0</u> |
| <u>ZZ.12</u> | Description of Iur interface | Ericsson / Björn Ehrstedt | <u>v 1.0.0</u> |
| <u>ZZ.13</u> | Description of Iub interface | Lucent / Urs Bernhard | <u>v 1.0.0</u> |

4.4 UMTS network aspects, responsibility of Project GSM-UMTS

Antun Samukic is responsible within PT SMG for these documents.

Editorial note: Responsibilities of SMG12 and SMG3 should be clarified.

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2 nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|--------------------------------|--------|---|--|--|-------------------------------|---|---|
| 23.01 specification | | General UMTS architecture | | SMG12 | Magnus Ohlsson | v 1.0.0 at SMG#27 | to be app. 3.0.0 approved at SMG#28 |
| 23.05 specification | | UMTS Network principles | | SMG12 | in Alain Sultan | 0.10.0 1997-09 | On hold |
| 23.10 specification | | UMTS Access Stratum - services and functions | | SMG12 [SMG2] | Oscar Lopez - Torres, T-Mobil | v 1.0.0 at SMG#27 | app. 3.0.0 at SMG#28 completion for 12/98 |
| 23.20 report | | Evolution of the GSM platform towards UMTS | | SMG12 [SMG1] | André Jarvis | v 1.50.0 at SMG#287 | completion for 12/98 may be further enhanced after SMG#28 |
| 23.30 report | | Principles for the Iu Interface | | SMG12 | Bo Axerud | v1-0.0 0.4.0 at SMG#28 98-11 | To be approved v.3.0.0, SMG#28 may be further enhanced after SMG#28 |
| 23.60 report | | Framework of network functions to support multimedia services in UMTS | | SMG12 [SMG4, SMG1] | Axel Gabe | | on hold |
| 23.xx specification | | GSM/UMTS Core Network Architecture | | SMG12 | | 0.0.0 1997-09 | To be started after UMTS 23.20 approval |
| 27.00 report | report | Principles for handling of data services in the UMTS | | SMG12 [SMG4] | Axel Gabe | | on hold |

4.5 UMTS network management aspects, responsibility of Project GSM-UMTS

Michael Sanders is responsible within PT SMG for these documents.

Editorial note: Should UMTS 32.01 be part of this Work programme?

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2 nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|--------------------------------|--|--|--|--|---------------|---|---|
| 21.06 report | | O&M requirements for the UMTS | | SMG6 | Bill Szelazek | | appr. v.3.0.0 SMG#25 |
| 32.01 report | | Overall principles of the OAM for the UMTS | | TC TMN | NN | | transferred to TC TMN, published as <u>ES 201385, 99-01</u> |

4.6 UMTS security aspects, responsibility of Project GSM-UMTS

Peter van de Arendt is responsible within PT SMG for these documents.

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2 nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|--------------------------------|--|-------------------------------------|--|--|--|---|---|
| 33.20 report | | Security principles for the UMTS | | SMG10 | Colin Blanchard | | app. V 3.1.0 SMG#27 |
| 33.21 specification | | Security Requirements Specification | | SMG10 | Peter Howard, <u>Vodafone</u> | v 1.0.0 at SMG#27 | app. V 3.0.0 at SMG#28 to be approved. SMG#28 version 1.0.0 at SMG10, July 98 |
| 33.22 specification | | UMTS Security features | | SMG10 | <u>Bart Vinck</u> <u>Siemens</u> <u>ATEA</u> <u>Stefan Peutz</u> <u>Michael Walker</u> | v 1.0.0 at SMG#28 | to be appr. at SMG#30 |
| 33.23 specification | | UMTS Security Mechanism | | SMG10 | Bart Vinck Siemens ATEA | | to be appr. at SMG#30 |

4.7 UMTS Satellite aspects

Subcontracting agreement between SMG and EP SES is under preparation.

Note: TR 30.20 related to satellite is approved (see chapter 4.1)

4.8 UMTS card aspects, responsibility of Project GSM -UMTS

Michael Sanders is responsible within PT SMG for these documents.

| Identity and type (UMTS xx.xx) | | TITLE | | Prime/2 nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|--------------------------------|---------------|--|--|--|------------------|---|--------------------------------------|
| 21.11 report | | UICC and USI Requirements | | SMG9 [SMG1] | Guenter Maringer | v. 1.2.0 at 99-02 0.2.0 at 98-10 | plan-V.1.0.0 SMG#28 |
| 31.01 specification | | UICC/ME interface specification; Physical and electrical layer | | SMG9 | Guenter Maringer | | plan v1.0.0 SMG#29 |
| 31.02 xx.xx specification | specification | UICCUSIM/ME interface specification; Application layer | | SMG9 | Guenter Maringer | | plan v1.0.0 SMG#29 |

4.9 UMTS Data services, responsibility of Project GSM -UMTS

Friedhel Rodermund is responsible within PT SMG for these documents.

| Identity (UMTS xx.xx) | Type | TITLE | | Prime/2 nd resp. group in SMG | Rapporteur | Actual status for yet not approved document | Approval status: planned or approved |
|-----------------------|--------|---|--|--|------------------------------|---|--------------------------------------|
| 21.04 <u>report</u> | report | Requirements for the Support of Data Services in UMTS | | SMG4 [SMG1] | Kevin Holley | <u>v 1.0.0</u> | plan-V.1.0.0 SMG#267 |
| 22.45 <u>report</u> | | <u>Study on provision of facsimile services in GSM and UMTS</u> | | <u>SMG4</u> | <u>Eric Colban, Ericsson</u> | <u>v 0.1.0</u> | |

Annex A: Work Item descriptions

A.1 [Deleted]

A.2 Service Continuity and Provision of VHE via GSM/UMTS

Editorial note: The structure of WI description should be revised and eventually modified by STC SMG12.

A.2.1 Service Continuity and Provision of VHE via GSM/UMTS

A.2.1.1 SMG project - one and only one cross is requested

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| x | GSM-UMTS Core Network |
| | UMTS Services |

A.2.1.2 Linked work items

CAMEL Phase 3, Mobile Station Execution Environment, UMTS

A.2.1.3 Justification

SMG#22 agreed that handover between UMTS and GSM (in both directions) should be supported since UMTS cells are expected to be smaller than those of GSM. This implies continuous/seamless service provision via GSM and UMTS with the end user being aware only of slower response times in certain environments (e.g. due to lower bit rates being available via the GSM environment). It also implies that the Virtual Home Environment, which aims to provide the user with the same services in the same way wherever he/she roams, should be provided via GSM as well as UMTS. It is expected that work will progress via a feasibility study followed by appropriate changes to GSM specifications and the introduction of a number of new requirements into UMTS specifications.

A.2.2 Service Aspects

The following is a preliminary list of key issues that should be studied -

What services could or should be subject to handover between GSM and UMTS?

Should GSM services be supported via UMTS and in what form? Does everything in GSM have to be supported by UMTS? Is it possible to identify areas that need not be supported by UMTS? Should we develop features in GSM that might not be relevant in UMTS?

What services could adapt to differing bit rates provided via GSM and UMTS possibilities of inter operator handover (GSM and UMTS provided via different operators)

What are the handover criteria [service aspects?]

Would we handover for capacity reasons (e.g. service can be supported on UMTS cell and GSM cell becoming congested)

To what extent should the service capabilities of UMTS be limited by evolution from GSM

A.2.3 Network Aspects

Should the UMTS requirements be stated totally disregarding GSM evolution issues? This might imply a large set of services/features that might not be supported on an evolved GSM air interface?

What are the possibilities for having a shared subscriber/user data base (common data base?)

What are the possibilities for shared service creation and service management

What are the possibilities for shared PSTN/ISDN and Internet interworking functions

What are the possibilities for VHE in GSM

The elimination of unnecessary signalling due to handover attempts with respect to services that can't be supported on the "handed over to" environment should be studied.

A.2.5 Automatic Establishment of Roaming Agreements

Should the standard cover automatic establishment of roaming agreements between GSM service providers?

Should the standard cover automatic establishment of roaming agreements between GSM service providers and UMTS service providers (private and public)?

A.2.6 MMI-Aspects

To what extent can the same look and feel to service provision be maintained in the context of smart card roaming (i.e. when the user takes his/her smart card out of one terminal and inserts it into another)?

To what extent can the service provider customise the MMI and have it maintained across GSM and UMTS?

A.2.7 Charging Aspects

The exchange of call records to facilitate billing should be studied.

A.2.8 Security Aspects

what are the security implications of the VHE and supporting automatic roaming relationships, handover etc. across GSM and UMTS?

A.2.9 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | x | x | x | |
| No | | | | |
| Don't know | | | | |

A.2.10 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|--------|----------------------|--------------------------|---|---------------------|---|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | Report | SMG1 | SMG3 | SMG#27 | SMG#29 | other reports/specifications will follow |
| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

It is expected that the work item could have far reaching implications on the development of UMTS and the future evolution of GSM. A possible course of action would be to plan for future work items to be applicable to both GSM and UMTS and to plan for SMG to develop a common core to support both GSM and UMTS air interfaces and to support UMTS features via the GSM air interface.

GSM and UMTS specifications will be affected.

A.2.11 Work item rapporteurs

Derek Richards, Lucent Technologies (SMG1 UMTS chairman)

A.2.12 Supporting Companies

It is assumed that all GSM operators and manufacturers will support this new work item since it is consistent with the decisions of TC SMG (i.e. SMG#22).

A.2.13 Responsible STC(s)

SMG1 in close co-operation with SMG3. Joint activities involving SMG1 and SMG3 SA will be needed.

x Advanced Addressing

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

Internet/Intranet Access - related but independent

x.3 Justification

Today's GSM primarily uses the traditional ISDN numbering approach for addressing call destinations. In the third generation, with its increased interest in email, Internet etc., a more flexible approach to addressing is required.

x.4 Service Aspects

In addition to present numbering schemes, addressing may be based on an alpha-numeric basis, either in place of a traditional number (as with CNAP) or in the style of the Internet. This may also be extended so as not to exclude other approaches, based on database checking, and also for terminal as well as user/subscriber addressing. This Work item is applicable to both GSM and UMTS.

x.5 MMI-Aspects

Numbering and addressing is an MMI topic.

x.6 Charging Aspects

None identified.

x.7 Security Aspects

No security aspects identified, although there may be Privacy issues to be considered.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | X | X | X | |
| No | | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

Output to be part of Release 99 for GSM and UMTS

[This section either consists in a reference to another TC-TR, or it has the following contents:]

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | | | | | | |
| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

< optional supplementary text, e.g. other documents to be produced >

Note: Even some GSM specifications might be affected.

x.10 Work item rapporteurs

< list of one or more persons/companies > -- mandatory

x.11 Supporting companies

< SMG members supporting the work item > -- mandatory

x.12 Responsible STC(s)

Prime responsibility **SMG1**

Secondarily responsible STCs and their responsibilities, **SMG3 and 9**

x.13 Others

None identified

x Automatic Establishment of Roaming Relations

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

none identified

x.3 Justification

Today, roaming between GSM network operators is established by bilateral agreement, although generally in accordance with technical and commercial guidelines agreed by the GSM MoU. With the increasing number of GSM operators, this has become a cumbersome arrangement and indeed roaming is no possible through clearing houses, although this has no impact on the GSM standard.

In UMTS, the Role Model identifies the Service Provider as being responsible for establishing roaming relations with the serving network, although with the inclusion of fixed and cordless as well as cellular and satellite networks, the number of possible relationships becomes extremely large. An alternative approach is required.

x.4 Service Aspects

In addition to the roaming relationships available today and described above, the possibility for networks to establish a roaming relationship, including on a per session basis, needs to be developed. This is expected to be via the services of a third party, eg a clearing house, but might allow the decision on whether to proceed to be based not only on security and ability to pay, but possibly also on other factors such as the class of serving network and its ability to support the requested services. This Work item is applicable to both GSM and UMTS.

x.5 MMI-Aspects

None identified except to notify the user of the status and possibly to have the opportunity to accept or reject the terms and conditions of an automatic agreement.

x.6 Charging Aspects

Charging principles and accounting when roaming are important issues relating to the work item, but are expected to be primarily the responsibility of the GSM MoU. Advice of Charge may need to be offered.

x.7 Security Aspects

This feature must be applied in a secure manner, possibly with impact on authentication.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | | X | |
| No | X | X | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

Output to be part of Release 99 for GSM and UMTS

[This section either consists in a reference to another TC-TR, or it has the following contents:]

x ETE UMTS QoS Management

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| x | UMTS Services |

x.2 Linked work items

Bearer Service Negotiation and Teleservice

UTRAN Bearer Capabilities

QoS Support in GPRS for UMTS phase 1

x.3 Justification

UMTS TS 22.05 « Services and Service Capabilities » identifies the service capabilities provided by UMTS which allow the creation of new and innovative applications. These building blocks are the teleservices, the bearer services and the service features. There already exist work items to define the set up of both UTRAN and UMTS Core Network (UCN) bearer communication paths to meet this requirement. However, there is currently no work item to address the service control for both circuit switched and packet switched services within an operator network and the external PDN or PSTN/ISDN in order to provide End to End (ETE) QoS. What is required is a QoS mechanism or set of QoS mechanisms between the end users engaging the UMTS core and UTRAN networks for communication.

Currently established work items propose to define an API and control protocols that will provide connection set-up, negotiation and re-negotiation of tele and bearer services. This work item proposes that controls for the provision of ETE QoS for UMTS be developed within the UMTS core network which can interwork with the API and control protocols to be developed for bearer services in UMTS.

This work item is a UMTS phase 1 work item.

x.4 Service Aspects

This work item proposes the creation of UMTS core network controls and protocols(where necessary) for the provision of ETE QoS for UMTS. The controls and protocols will operate across both circuit and packet oriented transports and meet QoS profile definitions ranging from best effort messaging to real time applications. The controls and protocols shall be compatible with whatever the UTRAN supports in terms of MM features (handover) for each release. The work should include:

- definition of the principles of operation of QoS controls and protocols for UMTS*
- definition of the required controls, protocols and interworking with existing QoS and bearer schemes where necessary*
- support of or interworking with established QoS schemes in the networks that UMTS connects with*
- minimal impact on existing GSM and GPRS standards*
- definition of any dedicated signalling channels for the purposes of UMTS QoS support*

x.5 MMI-Aspects

None identified.

x.6 Charging Aspects

The charging aspects are covered in the UMTS Charging & Billing work item.

x.7 Security Aspects

All the authentication procedures must have been followed before the mobile can request and negotiate a tele or bearer service for the support of QoS control signalling or the resulting user service. It is assumed that Network Elements supporting any type of QoS control have been authenticated.

Where a mobile has subscribed for a limited set of service capabilities (QoS, bearer) the UMTS core network must ensure that the mobile is authenticated to use the requested resources before service is granted.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | x | x | |
| No | x | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

For release 1999:

The work item proposes the output deliverable of a formal ETR on the treatment of ETE QoS for UMTS.

The report should include:

- a definition of common terms to be used
- a definition of the principles
- a description of the QoS architecture framework to be used for specification of UMTS ETE QoS issues
- a definition of the parameters and classes to be considered across the architecture
- a definition of the controls required
- a definition of the functions to be provided across the architecture

It is assumed that this work item will be progressed in close association with the work item 'QoS support for GPRS in UMTS' in order to satisfy the ETE QoS principles specified for UMTS, whilst building on the principles of GPRS QoS controls and protocols, where possible.

x.10 Work item rapporteurs

Proposed: Lucent Technologies

x.11 Supporting companies

Lucent, Iridium, Fujitsu, FT

x.12 Responsible STC(s)

Prime: SMG12 & SMG3

Secondary: SMG1, SMG2, SMG4

x.13 Others

Ax IP-in-IP tunneling in GPRS backbone for UMTS phase 1

This work item will prepare a technical report studying the feasibility of using IP-in-IP tunneling instead of GTP in the GPRS backbone. The report will include issues on performance, security, etc. as well as suggestions for changes to the Gn interface.

Ax.1 SMG Work Area- one and only one cross is requested

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| X | GSM-UMTS Core Network |
| | UMTS Services |

Ax.2 Linked work items

GPRS Mobile IP Interworking (R98) (related in the sense that it improves performance of IP services)

Ax.3 Justification

The UMTS core network has been identified to evolve from the GSM core network. A working assumption within SMG12 is that the GPRS CN should evolve to provide the support needed for UMTS packet data services.

In the GPRS backbone, user data packets are transported between GSN's by GTP, which, in turn, is transported on top of UDP/TCP and an IP layer. Also signaling data is transported by GTP.

IP services are expected to be the most common type of packet data services, which is a reason to look into more optimal solutions for transporting these packets through the GPRS backbone.

By eliminating the GTP and UDP layers, i.e. to use standard IETF IP-in-IP tunneling, the overhead could be decreased. In addition, such a solution has the potential to decrease the time-to-market for new types of IP services, since standard IP solutions can be used without a separate standardization procedure for GPRS/UMTS.

It is assumed that GTP will still be used for transporting X.25 user data.

This work item addresses the changes needed at the Gn interface in order to enable the user IP datagrams and signaling messages to be transported directly on the underlying IP layer in the GPRS backbone.

Ax.4 Service Aspects

One aim is to optimize the transport of user IP datagrams, which should improve performance for IP based services.

Ax.5 MMI-Aspects

None

Ax.6 Charging Aspects

To be identified.

Ax.7 Security Aspects

An initial assumption is that IP-in-IP tunneling offers the same level of security as the GTP protocol.

Ax.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | | X | |
| No | | | | |
| Don't know | | | | |

Ax.9 Expected Output and Timescales (to be updated at each plenary) -- best possible information requested

Timescale:

Approval of the WI: SMG#27, October 1998
 Start of Work: Immediately (August 1998)
 Scope: September 1998
 First draft: November 1998
 Approval of the deliverable by STC: early 1999
 Approval of the deliverables by the TC: early 1999

Output:

An ETSI Technical Report as stated in section Ax.

[This section either consists in a reference to another TC-TR, or it has the following contents:]

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | | | | | | |
| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

< optional supplementary text, e.g. other documents to be produced >

Note: Some GSM specifications might be affected.

Ax.10 Work item rapporteurs

Andrea Calvi(~~Error! Bookmark not defined.~~) and Antonella Napolitano(Antonella.Napolitano@cselt.it), CSELT

Ax.11 Work item leadership

SMG12

Ax.12 Supporting companies

CSELT, KPN, Lucent, Nortel, Swisscom, Telia

Ax.13 Others

Ax Combined GSM and MobileIP Handling in UMTS IP CN, phase 1 and 2

This WI will prepare a technical report studying the feasibility of evolving the GPRS backbone for UMTS to use more standard IP solutions. An initial assumption is a scenario with a combination of GSM/GPRS mobility management and Mobile IP .

The output of this study will contain

- *Identification of the requirements for supporting IP services and network interconnect in UMTS.*
- *A UMTS CN architecture based on components from GSM/GPRS as well as IP and Mobile IP (IPv4 and IPv6).*
- *A comparison of such an architecture with the current GPRS backbone architecture regarding performance, security, alignment with fixed IP networks and services etc.*
- *An analysis of the dependence of the development in IETF.*

A discussion on the compatibility with earlier phases of GPRS

Ax.1 SMG Work Area- one and only one cross is requested

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| X | GSM-UMTS Core Network |
| | UMTS Services |

Ax. 2 Linked work items

GPRS Mobile IP Interworking (R98), UMTS Mobility Management

Ax. 3 Justification

The UMTS core network has been identified to evolve from the GSM core network. Further it is envisaged that the basis for mobility handling in a UMTS network will rely on the mobility services already provided by GSM2+ and on possible expansions of these. For providing IP services, an evolved GPRS architecture could be deployed. However, due to recent increased popularity in IP technology, there is some concern that the current GPRS structure might not be the optimal one for UMTS. Therefore it is of importance to study how UMTS could be better aligned with future development of IP networks, while reusing as much as possible of the already existing GSM infrastructure..

In order to provide roaming, and possibly handover, between radio access networks, the use of Mobile IP as a complement to GSM/GPRS mobility handling should be investigated. In a combination scenario, where an IP network is used in the core network, Mobile IP could be used to handle discrete mobility between access networks, i.e. roaming(and perhaps handover) between radio access networks (UTRANs), while GSM/GPRS could be used for handling subscriber data, charging mechanisms, security issues, etc., The GPRS SGSN node - enhanced with some IP functionality - could be used for mechanisms such as authorization and handling of encryption keys.

This work item addresses a study on the enhancements needed to enable combined use of mobility handling systems, i.e. adoptions in terms of interfaces and functionality needed in the mobile terminal and in GSNs, as well as the combined use of home agents (HA) and HLRs.

Ax.4 Service Aspects

This work item aims at studying roaming, including handover, between UTRANs and to provide and facilitate direct Internet and intranet access from the mobile terminal.

Ax.5 MMI-Aspects

To be identified

Ax.6 Charging Aspects

The use of GPRS charging mechanisms in an IP environment will be addressed.

Ax.7 Security Aspects

. Security issues related to the use of IPsec will be included in the study.

Ax.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | X | X | |
| No | | | | |
| Don't know | X | | | |

Support for Mobile-IP required also in mobile entity.

Ax.9 Expected Output and Timescales (to be updated at each plenary) -- best possible information requested

Timescale:

Approval of the WI: SMG#27, October 1998

Start of Work: Immediately (August 1998)

Scope: September 1998

First draft. November 1998

(end point to be aligned with the time scale for evaluating the different evolution scenarios in 23.20)

Approval of the deliverable by STC: early 1999

Approval of the deliverable by TC: early 1999

Output:

An ETSI Technical Report as stated in section Ax.

[This section either consists in a reference to another TC-TR, or it has the following contents:]

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | | | | | | |
| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

< optional supplementary text, e.g. other documents to be produced >

Note: Some GSM specifications might be affected.

Ax.10 Work item rapporteurs

Elisabeth Hubbard (Elisabeth.a.Hubbard@telia.se), Telia

Ax.11 Work item leadership

SMG12

Ax.12 Supporting companies

CSELT, Lucent, Nortel, Telia

Ax.13 Others

Ax.4 Service Aspects

The UMTS Core Network will provide a basis for extending the service capabilities of the existing core networks.

Ax.5 MMI-Aspects

Not relevant

Ax.6 Charging Aspects

Potential liaison on ATM Charging aspects with the ATM Forum.

Ax.7 Security Aspects

Not relevant

Ax.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | | X | |
| No | X | X | | |
| Don't know | | | | |

Ax.9 Expected Output and Timescales (to be updated at each plenary)

- Approval of the WI; Sept 1998 (STC), October (SMG#27)
- Start of work; Sept 1998
- Scope and first draft; Jan 1999 (SMG#28)
- Approval of the deliverables by STC; August 1999
- Approval of the deliverables by TC; October 1999 (SMG#30)

| New specifications | | | | | | |
|----------------------------------|---|---------------------------------|--------------------|-----------------------------------|------------------|------------------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | Investigation of a UMTS CN Based on ATM | SMG12 | SMG2 | SMG#27 | SMG#30 | Technical Report |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| 23.30 | | lu Principles (to be clarified) | | | | |

Ax.10 Work item rapporteurs

Mick Wilson, Adel Rouz -Fujitsu

Ax.11 Work item leadership

SMG12

Ax.12 Supporting companies

Fujitsu, Lucent, NEC, NTT DoCoMo, Vodafone, KPN, T-Mobil, Alcatel, TIM, Telecom Modus, CSELT

Ax.13 Others

x UMTS Open Service Architecture

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| x | GSM-UMTS Core Network |
| x | UMTS Services |

x.2 Linked work items

- 1) CAMEL Phase 3 (no. 213)
- 2) SIM Application Toolkit (no. 85 and possible evolutions).
- 3) MS Application Execution Environment (MExE) (no. 198).
- 4) Service Continuity and Provision of VHE via GSM/UMTS (no. 210).

x.3 Justification

In 3rd generation mobile systems like UMTS the intention is not to standardize any new services (except for existing GSM services up to phase 2+). Instead services and applications will be built up using so called **service capabilities**.

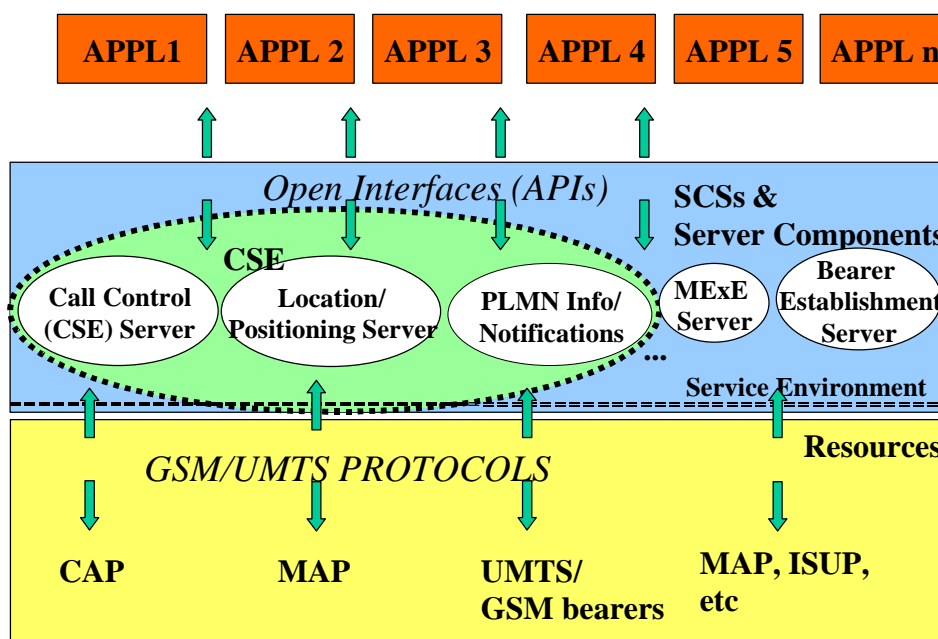
In order to achieve the above an **open service architecture** is vital.

For this purpose, open interfaces (APIs), based on distributed object techniques like CORBA should be used, with PLMN specific protocols hidden for the service/application designers.

Service Providers (SPs), Value-Added Service Providers (VASPs) or 3rd party developers on behalf of SPs or VASPs can use the open interfaces for service/application design.

The right to access and use service capabilities is reckoned to be a driver for boosting application development for 3rd generation systems.

UMTS standardised Service Capabilities



The Service Capability Servers reflect the service capabilities in UMTS phase1, i.e. access to bearers, CAMEL, MExE and SIM-Toolkit. The functionality of these can further be subdivided into server components dedicated to specific tasks.

A service capability server consists of one or several server components. Taking CAMEL Services as an example, the server components could be Call Control, Location/Positioning, PLMN Information & Notifications. Each of these server components offers its services via defined open interfaces, and implements these by using GSM/UMTS protocols. Note that it is not foreseen to change the GSM/UMTS protocols, but in isolated cases it might be needed to do so.

This work item is a UMTS phase 1 work item.

x.4 Service Aspects

This work item proposes to define:

- 1) Definition of Service Capability Server Components.
- 2) The Functionality provided by the Service Capability Server Components.
- 3) The open interfaces to the Service Capability Server Components.
- 4) System Management for the Application to Service Capability Server Components interworking.
- 5) Security related issues.

x.5 MMI-Aspects

None identified.

x.6 Charging Aspects

The charging aspects are covered in the UMTS Charging & Billing work item.

x.7 Security Aspects

Authentication of applications connected to service capability server components is required.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|---|
| Yes | | | | The Home Environment of the Service Provider. |
| No | | | | |
| Don't know | x | x | x | |

x.9 Expected Output and Timescales (to be updated at each plenary)

x.9.1 Expected Output

- Stage1 description
- Stage2 description
- Stage3 description

13.1 WI on Support of non-realtime Multimedia Messaging Service

Title: WI on Support of non-realtime Multimedia Messaging Service

x Support of non-realtime Multimedia Messaging Service

x.1 SMG Project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

WI on Multimedia in UMTS and on Numbering and Addressing

x.3 Justification

SMS has been very successful and popular in the GSM era. Noting this messaging type of service, evolving from the existing SMS to non-realtime Multimedia Messaging Service, has been identified as being important for UMTS. Multimedia messaging is understood to mean non-realtime transfer of images, audio/video clips and other binary information in a store-and-forward fashion. The message could be delivered to the recipient immediately if the user is attached to the network, otherwise delivered by the network to the user when available.

x.4 Service Aspects

Multimedia Messaging service should not be a new bearer service, but a new messaging feature which uses the generic bearer services of the UMTS.

It should be possible to use different addressing formats to identify the recipient (UMTS 22.05 Address Translation Feature).

The Multimedia Messaging service should allow different generic UMTS bearer services.

The Multimedia Messaging service should be able to support a notification mechanism to the MS.

The Multimedia Messaging service should be able to be automatically informed when the MS becomes reachable.

x.5 MMI-Aspects

No applicable MMI aspects.

x.6 Charging Aspects

The Multimedia Messaging service needs a standardized charging mechanism, so that it shall be possible to charge for the usage of the service.

x.7 Security Aspects

Nothing identified.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | X | X | |
| No | X | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | Presented for information at SMG# | Approved at SMG# | Comments |
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| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

x.10 Work item rapporteurs

x.11 Supporting companies

Nokia, Ericsson, Motorola, Bosch

x.12 Responsible STC(s)

Prime: SMG 4

Secondary: SMG 1, SMG11, SMG12

x.13 Others

13.2 WI on Multimedia in UMTS

x Multimedia in UMTS

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

WI on Multimedia Messaging and on Numbering and Addressing

x.3 Justification

To realize the SMG1 requirement for multimedia services in UMTS (Ref 22.60). An objective is to enable/stimulate the mass market for multimedia. This WI will examine the issues related to the support of multimedia in UMTS. This WI will examine how existing multimedia standards (such as H.323, H.324, H.324M, and others) can be supported in UMTS.

The aim of this WI is to identify

1. the extent of standardization required for multimedia in UMTS,
2. the functional distribution in the UMTS network and associated applications
3. impact of the functional distribution on user terminals (for instance, hand-held, phone with a PC, and others)
4. impact of the functional distribution on Core and Access network.

The issues that need study relate to one or more of the following:

1. Signalling for multimedia (call control, bearer control, and others)
2. Bearers characteristics for supporting multimedia applications
3. Routing aspects (can different component media streams be routed differently)
4. Numbering and Addressing schemes
5. Source coding (do we need a default codec?)
6. Relationship between source and channel coding
7. Applicability of generic bearers for multimedia

x.4 Service Aspects

x.5 MMI-Aspects

None.

x.6 Charging Aspects

Multimedia will have impact on charging in UMTS.

x.7 Security Aspects

None.

13.3 WI on Study on provision of facsimile services in GSM and UMTS

x Study on provision of facsimile services in GSM and UMTS

x.1 SMG Project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

None identified

x.3 Justification

SMG4 and SMG1 have jointly arrived at the conclusion that end-to-end support of the ITU-T fax protocol T.30 should not be provided in UMTS. As an alternative, a store and forward fax service is envisaged where the fax message is transferred as a file to a fax box. Another alternative would be to use the ITU-T T.38 protocol, to transfer the faxes over IP via a fax gateway. The advantages of such an approach would be that no additional standardisation in GSM/UMTS would be required.

x.4 Service Aspects

The same fax transmission method could be provided in GSM and UMTS thus allowing seamless roaming and handover between a UMTS and a GSM network. The facsimile transmission would not be a new service in GSM/UMTS, but would use bearer services provided in GSM/UMTS.

x.5 MMI-Aspects

MMI would be defined by T.38 client software.

x.6 Charging Aspects

To be studied.

x.7 Security Aspects

Nothing identified.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | | | |
| No | X | X | X | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | Presented for information at SMG# | Approved at SMG# | Comments |
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| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

x.10 Work item rapporteurs

Erik Colban, Ericsson

x.11 Supporting companies

Ericsson, Motorola, Bosch, Siemens

x.12 Responsible STC(s)

Prime: SMG 4

Secondary: SMG 1

x.13 Others

13.4 Work Item Description for MExE Release 99

x MExE Release 99

x.1 SMG Work Area-

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

MExE Release 98 and Virtual Home Environment, (VHE).

x.3 Justification

MExE Release 98 has been defined to provide an extensible and future proofed execution environment in the MS by identifying the need for MExE protocols to support the introduction of new bearers.

The aim of this work item description is to define a set of core requirements for an enhanced MExE for Release 99 including the support of additional bearers identified in the UMTS Phase 1 work plan.

The following additional requirements associated with the support of the virtual home environment in UMTS, (defined in UMTS 22.70) shall also be supported: -

Allow the user to maintain the same “look & feel” to services when she changes terminal by putting her smart card into another terminal

Allow the network to differentiate on services and “look & feel” and enable the same service and “look & feel” to be provided when the user roams between networks.

MExE Release 99 should, in particular note the recommendations for a “toolkit” approach to service creation and service portability in the UMTS Phase1 VHE architectural model. In this model, an open service architecture is achieved by the use of standardised service capability servers and standardised APIs to transfer data and service programs distributed across the home and serving network aswell as the MS.

The following should be defined for MExE Release 99: -

1. Functionality of a secure and standardised execution environment in the network to complement the mobile station
2. Include negotiation mechanisms to support change in QoS
3. Investigate mechanisms to run remote status checks and terminal diagnostics.
4. Mechanisms to manage multiple MExE service profiles per USIM
5. Impact on the MS and application to support a generic mechanism to download codecs, (e.g. speech, video into the MS).

x.4 Service Aspects

The UMTS phase 1 capabilities are the same as those of GSM Phase 2+ plus the support of additional UMTS requirements. The fundamental characteristic of UMTS being the support of high bit rate bearer services with negotiated traffic and QoS.

Service execution in a GSM/UMTS environment should therefore also allow for re-negotiation of application parameters to allow user-initiated in-call modification and to allow the network to notify the user a degradation of the QoS.

The concept of standardised service capabilities is a fundamental feature for the support of the virtual home environment, (VHE) in UMTS. VHE is considered to consist of a set of tools that allows flexible service creation and differentiation.

To complement these execution environments in the MS, an enhanced MExE should specify those additional functions required in the network (apart from security, charging, billing and addressing) to provide a secure and flexible execution environment in the network. For example to establish calls to participants of a teleconference according to instructions (service data) specified by the user, or to download service data to the MExE application when triggered by events of a service program.

An enhanced MExE for Release 99 will be required to provide a mechanism to support the above requirements plus the mechanisms necessary to provide improved customer care and support associated with downloaded applications.

x.5 MMI-Aspects

x.6 Charging Aspects

It shall be possible to charge for additional services in MExE Release 99.

x.7 Security Aspects

The integrity of existing GSM security mechanisms shall not be weakened with the introduction of new MExE Release 99 services.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | X | X | X | |
| No | | | | |
| Don't know | | | | |

<supplementary text> -- optional

x.9 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|-------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| | | | | | | |
| | | | | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | | Comments |
| 02.57 | | MExE Stage 1 | | | | |
| 03.57 | | MExE Stage 2 | | SMG#31 | | |

< optional supplementary text, e.g. other documents to be produced >

Note: Some GSM specifications might be affected.

x.10 Work item rapporteurs

x.11 Work item leadership

x.12 Supporting companies

Motorola, TIM, France Telecom, Lucent

x.13 Others

<text> -- optional

13.5 WI on provision of text telephony service in GSM and UMTS

x Provision of text telephony service in GSM and UMTS

x.1 SMG Project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | GSM-UMTS Services |

x.2 Linked work items

Work Item on Multimedia in UMTS.

x.3 Justification

Many hearing-impaired people would like to use GSM data devices to communicate with textphone users but GSM networks do not presently provide an appropriate service. V.18 defines a universal textphone modem which can communicate with the many different types of textphone used by the hearing-impaired around the world. Such support for V.18 modems in the GSM specifications would make life much easier for hearing-impaired people by allowing them to communicate easily by using the GSM networks.

x.4 Service Aspects

An appropriately constructed mobile station would be able to communicate with the many different types of fixed-network textphones used by the hearing-impaired around the world, as well as with other such mobile stations. The service could, for example, be based on the existing non-transparent asynchronous data service.

x.5 MMI-Aspects

ITU-T T.140 describes a text conversation protocol and also gives general guidance on aspects of the MMI. T.140 is intended for real time text conversation in multimedia services and in text telephony. It is based on ISO 10646 Universal Character Set and features character by character transmission and a limited set of presentation controls.

x.6 Charging Aspects

To be studied.

x.7 Security Aspects

Nothing identified.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | X | X | |
| No | X | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|-------------------------|-------------------|--------------------------|---|---------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | Presented for information at SMG# | Approved at SMG# | Comments |
| | Text telephony, stage 1 | SMG4 | SMG1 | | | |
| | Text telephony, stage 2 | SMG4 | SMG1 | | | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | | | | | |
| | | | | | | |

x.10 Work item rapporteurs

Possibly to be provided by Hayes Microcomputer Products

x.11 Supporting companies

Hayes Microcomputer Products, Nokia,

x.12 Responsible STC(s)

Prime: SMG 4

Secondary: SMG 1

x.13 Others

x Virtual Home Environment

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| x | UMTS Services |

x.2 Linked work items

Service Management, CAMEL phase 3, MExE, SIM Toolkit

x.3 Justification

UMTS TS 22.05 « Services and Service Capabilities » identifies the service capabilities provided by UMTS which allow the creation of new and innovative applications. These building blocks are the teleservices, the bearer services and the service features.

Service features are toolkits which allow service providers to create and provide new services on any UMTS network and any UMTS mobile station, subject to the limitations of the UMTS network and mobile station. The concept of providing the same services in the same way whatever UMTS network and UMTS mobile station is called Virtual Home Environment. This work item addresses the control aspects of VHE. Service management aspects of VHE are covered in a separate work item.

This work item is a phase 1 work item.

x.4 Service Aspects

The technologies which could be used to provide Virtual Home Environment are CAMEL phase 3, MExE and the SIM Toolkit.

x.5 MMI-Aspects

None.

x.6 Charging Aspects

None identified.

x.7 Security Aspects

None.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|-------------------|-------------|-----------|-----------|---------------|
| Yes | X | x | x | |
| No | | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

This work item is for release 1999.

x.10 Work item rapporteurs

Erwin Postmann

x.11 Supporting companies

Motorola, FT, Ericsson, MMO, Siemens, T-Mobil, Fujitsu, Lucent.

x.12 Responsible STC(s)

Prime : SMG1

Secondary : SMG12, SMG4, SMG9, SMG3

x.13 Others

x UMTS Numbering, Addressing and Identities

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

VHE

x.3 Justification

UMTS is a telecommunications system which allows person to person and machine to machine interactions. Addressing schemes allow users (people or machines) to indicate to the system the target of a particular communications session. Traditionally, this has involved a user dialling a telephone number to indicate the destination of a telephone call.

This WI shall elaborate the desirable features of the UMTS advanced schemes requirements for numbering, addressing and Identities for UMTS and translation mechanisms which could be used to enhance the service to the customer.

The requirements developed in this WI are to be used within ETSI NA2 to develop a proposal for numbering, addressing and identities applying existing schemes or developing new ones. Other ETSI groups will be involved in the development of addressing of applications and network elements.

This work item is a phase 1 work item.

x.4 Service Aspects

In addition to present numbering schemes, connection set up may be based on an alpha-numeric basis, either in place of a traditional number or in the style of the Internet. This may also be extended so as not to exclude other approaches, based on database checking, and also for terminal as well as user/subscriber numbering. This Work item is applicable to both GSM and UMTS.

The need for UMTS users to be able to interwork with users on legacy schemes. These would encompass telephony, data and multimedia. Unique identification of various entities in an UMTS environment is required.

For UMTS phase 1 the requirements are the following:

- The phase 1 UMTS core network shall support interworking with PSTN, N-ISDN, GSM, X.25 and IP networks with their respective numbering schemes (E.164, X.121, IP v4/6).

Different UMTS internal identities (e.g. location areas, cell IDs) have to be considered

x.5 MMI-Aspects

Numbering is an MMI topic.

x.6 Charging Aspects

Is charging still based on the dialled number?

x.7 Security Aspects

None identified.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | X | X | X | |
| No | | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

This work item is for release 1999.

| New specifications | | | | | | |
|----------------------------------|---------------------|-------------------------|--------------------------|---|---------------------|----------------------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | approved at SMG# | Comments |
| TR22.75 | Advanced Addressing | SMG1 | | 24 | | Revised after SMG#25 |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| 22.01 | | UMTS Service Principles | | | | |

Existing GSM specifications might be effected.

x.10 Work item rapporteurs

Stephan Kleier / Mannesmann Mobilfunk

x.11 Supporting companies

Motorola, FT, Ericsson, MMO, Siemens, T-Mobil, Fujitsu, Lucent

x.12 Responsible STC(s)

Prime : SMG1

Secondary : SMG3

x.13 Others

None identified

x UMTS Charging and Billing

x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

None identified

x.3 Justification

UMTS Charging and Billing requirements cover a range of voice and data services which are not yet available in GSM. Whilst GPRS billing features will cover many aspects of packet data, it does not yet address the QoS aspects required for multimedia and other packet-data oriented services. There is also a requirement for online billing and for external 3rd parties (Value Added Service Providers) to be able to offer services and receive payment. These requirements are covered in SMG1 Service Requirement specification 22.15.

A work item is therefore required to address these requirements, and develop a solution for UMTS Charging and Billing.

This work item is a phase 1 work item.

x.4 Service Aspects

The UMTS phase 1 requirements are the following :

- 1. The phase 1 UMTS core network shall support the generation of standardised charging records based among other parameters on duration, traffic (volume, bit rate) and performance provided to the user.*
- 2. The phase 1 UMTS core network shall support on-line billing. Billing of 3rd party value added services with the concept of one-stop-billing shall be supported by the phase 1 UMTS core network through standardised procedures.*

x.5 MMI-Aspects

None.

x.6 Charging Aspects

This work item addresses all charging aspects of UMTS.

x.7 Security Aspects

None.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|-------------------|-------------|-----------|-----------|---------------|
| Yes | X | x | x | |
| No | | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

This work item is for release 1999.

x.10 Work item rapporteurs

David Chambers.

x.11 Supporting companies

Motorola, FT, Ericsson, MMO, Siemens, T-Mobil, Fujitsu, Lucent.

x.12 Responsible STC(s)

Prime : SMG1

Secondary : SMG6

x.13 Others

x.9 Expected Output and Timescales (to be updated at each plenary)

Release 1998

| New specifications | | | | | | |
|----------------------------------|---------------------------|--------------------------|---------------------------------|-----------------------------------|------------------|-------------|
| Spec No. | Title | Prime rsp. STC | 2 nd ary rsp. STC(s) | Presented for information at SMG# | Approved at SMG# | Comments |
| 10.17 | GPRS Charging and Billing | SMG6 | | 25 | Expected at 26 | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | | Comments |
| 02.60 | | GPRS Stage 1 Description | | 21 | | STC SMG1 |
| 03.60 | | GPRS Stage 2 Description | | 22 | | STC SMG3/12 |

x.10 Work item rapporteurs

x.11 Supporting companies

Agreed in SMG1 GPRS ad-hoc (Norrtajle, Sweden 27-28/05/1998) as a phase 2 requirement

x.12 Responsible STC(s)

SMG6

x.13 Others

SMG1 for Stage 1 description

SMG3/12 for Stage 2 description.

GSM-UMTS WORK ITEM DESCRIPTION SHEET

x **WID: Point-To-Multipoint Services (R99)**

x.1 SMG project

| | |
|---|-----------------------|
| X | UMTS Radio Access |
| X | GSM Radio Access |
| X | GSM-UMTS Core Network |
| X | UMTS Services |

x.2 Linked work items

UMTS

x.3 Justification

Point-To-Multipoint (PTM) has been agreed to be a GPRS phase 2 service. The service description in GSM 02.60 details three services (PTM-M, PTM-G & IP-Multicast). Presently a stage 2 draft (GSM 03.61) for PTM-M exists, but nothing for the other two. Continued work in PTM services should be directed to the interworking of GPRS PTM-M and PTM-G services with IP-Multicast services.

This service should be easily reused in UMTS when supported by UMTS radio.

x.4 Service Aspects

The following is the services that should be studied -

- PTM-M, i.e. broadcast services for a specific geographical area.
- PTM-G, i.e. a service limited to a specified group of subscribers.

x.5 MMI-Aspects

None identified.

x.6 Charging Aspects

Defined in 02.60.

x.7 Security Aspects

Aspects of group identification, authorization and privacy should be defined.

x.8 Impacts

| Affects: | USIM | ME | NW | Others |
|------------|------|----|----|--------|
| Yes | | x | x | |
| No | x | | | |
| Don't know | | | | |

x.9 Expected Output and Timescales (to be updated at each plenary)

| New specifications | | | | | | |
|----------------------------------|-------|----------------|--------------------|-----------------------------------|------------------|----------|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | presented for information at SMG# | Approved at SMG# | Comments |
| 03.61 | PTM-M | SMG12 | | SMG#29 | SMG#31 | |
| 03.62 | PTM-G | SMG12 | | SMG#29 | SMG#31 | |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | Approved at SMG# | | Comments | |
| | | | | | | |
| | | | | | | |

x.10 Work item rapporteurs

To be defined

x.11 Supporting Companies

Nokia, Ericsson, Telia, Lucent.

x.12 Responsible STC(s)

SMG12

x.13 Others

Editorial note: The structure of WI description should be revised and eventually modified by STC SMG12.

3.x New Access Network to Core Network (BSS-NSS) interface

3.x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| X | GSM-UMTS Core Network |
| | UMTS Services |

3.x.2 Linked work items

3.x.1 Justification

A new radio access interface will be developed for UMTS/IMT-2000 (the UTRA). A complete new radio access network will be developed around this interface (UTRAN). These features are covered by the UMTS Radio Project.

The split between a radio access network (BSS) and a Core Network (NSS) determines reference point Iu. The existing interface specifications for GSM (A and Gb interfaces) are not sufficient for the needs of UTRA (e.g., high bit rates).

The purpose of this work item is to develop for the Iu reference point interface specifications suitable, at least, both for the interconnection of the future UMTS Radio Access Network and the GSM-UMTS Core Network and for the interconnection of the GSM Radio Access Network (GSM BSS) with the GSM-UMTS Core Network.

A secondary aim of these interface specifications is to cover, as far as requirements are provided by sources external to the project, needs for inter-connecting the UTRAN to other Core Networks, and needs for inter-connecting other Access Networks (examples of potential cases are BRAN, satellite networks, ...) to the GSM-UMTS Core Network.

These interface specifications shall cover the physical, link and network layers for signaling and user packets, the Access network protocol implementing the primitives as described in UMTS 23.10, and the protocols for other user data transport as needed.

The goal is that these interface specifications will be published by ETSI as mandatory for the interconnection between UTRAN and the GSM-UMTS Core Network.

3.X.2 Service Aspects

These interface specifications shall cover all the requirements set by providing services to the users through the UTRAN and the GSM-UMTS Core Network, or through the GSM Radio Access Network and the GSM-UMTS Core Network.

3.X.3 MMI Aspects

Not applicable.

3.x.4 Charging Aspects

Not applicable.

3.x.5 Security Aspects

None.

3.x.6 Impacts

| Affects | SIM | ME | NW | Other |
|-----------|-----|----|----|-------|
| Yes | | | X | |
| No | X | X | | |
| Not known | | | | |

3.x.7 Expected output and Timescales (to be updated at each plenary)

The first phase of the Work Item shall consist in a study, finalized by a Report, which shall address the choice between developing a new set of specifications or to extend the set included in the GSM 08 series, and the choice, if applicable, of the basic transmission technique (e.g., PCM or ATM, IP, SS7, ...).

The second phase of the Work Item shall consist in the development of the interface specifications.

| Document | Yes or No | Date for TC approval | Comments, list of specifications, list of CRs, etc. |
|--------------------------------|-----------|----------------------|--|
| Report | X | SGM#26 | Principles for the Iu Interface |
| New specifications | | SMG#28 | Interface specifications |
| CRs to existing specifications | | SMG#28 | The impact on the existing GSM specifications (08 series, 09 series, ...) has to be assessed |
| Others | | | |

| |
|--|
| <p>New specifications:</p> <p>23.30 Principles for the Iu Interface</p> <p>? Interface specifications</p> |
|--|

| Affected existing specifications | | | | |
|----------------------------------|----|---------|------------------|----------|
| GSM No. | CR | Subject | Approved at SMG# | Comments |
| | | | | |
| | | | | |
| | | | | |

3.x.8 Rapporteur(s)

Overall Item : (Proposed) Michel Mouly, Nortel, SMG3/SA Chairman

23.30 Lauri Söderbacka, Nokia

Others TBD

3.x.9 Others

The main responsibility for the Work Item will be SMG3/SA, as part of the GSM-UMTS Core Network projects, with liaison with SMG2 (for UTRAN and GSM BSS) and with other bodies developing other Access Networks and/or other Core networks, and committed to use the Iu interface for these networks.

Editorial note: The structure of WI description should be revised and eventually modified by STC SMG12.

3.x Architecture overview of the GSM-UMTS System

3.x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| | GSM-UMTS Core Network |
| X | UMTS Services |

3.x.2 Linked work items

3.x.1 Justification

The aim of this Work Item is to provide an architectural framework for the development of the UMTS specifications. This framework will consist in a set of documents which will describe the high-level architecture of UMTS, both for the Infrastructure side and the User Equipment side.

The description shall be sufficient for organizing the work between the Radio Access projects (UMTS Radio Access and GSM Radio Access projects) and the GSM-UMTS Core Network project. The description shall identify major reference points, the major modules of the system and the major functional planes. The description shall not go into details which can be addressed in the Radio Access project or in the GSM-UMTS Core network projects.

3.X.2 Service Aspects

The general architecture shall be in line with the requirements expressed in UMTS 22.01.

3.X.3 MMI Aspects

Not applicable.

3.x.4 Charging Aspects

Not applicable.

3.x.5 Security Aspects

Not applicable.

3.x.6 Impacts

| Affects | SIM | ME | NW | Other |
|-----------|-----|----|----|-------|
| Yes | X | X | X | |
| No | | | | |
| Not known | | | | |

3.x.7 Expected output and Timescales (to be updated at each plenary)

The two main expected outputs are a document providing a high-level description of UMTS, and a document describing in details the functional split between the parts of the system which will be respectively developed under the UMTS Radio Access project and the GSM-UMTS Core Network project.

| Document | Yes or No | Date for TC approval | Comments, list of specifications, list of CRs, etc. |
|--------------------------------|-----------|----------------------|---|
| Report | | | |
| New specifications | | ? | General architecture description Access Stratum |
| CRs to existing specifications | | ? | The impact on the existing GSM specifications (03.02, 03.09, 09 series, ...) has to be assessed |
| Others | | | |

| |
|--|
| <p>New specifications:</p> <p>23.01 General UMTS Architecture</p> <p>23.10 Services provided by the UMTS Radio Access Stratum</p> |
|--|

| Affected existing specifications | | | | |
|----------------------------------|----|---------|------------------|----------|
| GSM No. | CR | Subject | Approved at SMG# | Comments |
| TBD | | | | |
| | | | | |
| | | | | |

3.x.8 Rapporteur(s)

Overall Item : (Proposed) Michel Mouly, Nortel, SMG3/SA Chairman

23.01 Roland Bodin, Ericsson

23.10 Michael Schönborn, T-Mobil

Others TBD

3.x.9 Others

The main responsibility for the Work Item will be SMG3/SA.

Editorial note: The structure of WI description should be revised and eventually modified by STC SMG12.

3.x Architecture the GSM-UMTS Platform

3.x.1 SMG project

| | |
|---|-----------------------|
| | UMTS Radio Access |
| | GSM Radio Access |
| X | GSM-UMTS Core Network |
| | UMTS Services |

3.x.2 Linked work items

3.x.1 Justification

The aim of this Work Item is to provide an architectural framework for the development of the specifications of the GSM-UMTS Platform, as defined by UMTS 23.01 and 23.10. This framework will consist in a set of documents which will describe the architecture of UMTS, both for the Infrastructure side and the User Equipment side.

The description shall be sufficient for organizing the work within the GSM-UMTS Core Network project. This description shall identify all reference points and all functional entities inside the platform and relevant for the UMTS specifications issued by the project, including those linked to Operation and Maintenance. This description shall identify all protocols which are specified within the UMTS specifications issued by the project. This description shall also cover the major system features on which are built the services and features addressed by other Work Items. This includes such aspects as backbone transport networks, Operation and Maintenance support networks, mobility aspects, call and session concepts.

3.X.2 Service Aspects

The general architecture shall be in line with the requirements expressed in UMTS 22.01.

3.X.3 MMI Aspects

Not applicable.

3.x.4 Charging Aspects

Not applicable.

3.x.5 Security Aspects

Not applicable.

3.x.6 Impacts

| Affects | SIM | ME | NW | Other |
|-----------|-----|----|----|-------|
| Yes | X | X | X | |
| No | | | | |
| Not known | | | | |

1 Work item description structure

For each work item a separate sub-clause with the following structure should be developed:

Ax Support for real time services in the Packet domain for GSM/GPRS/UMTS R99

Ax.1 SMG Work Area

| | |
|----------|------------------------------|
| | <u>UMTS Radio Access</u> |
| | <u>GSM Radio Access</u> |
| <u>X</u> | <u>GSM-UMTS Core Network</u> |
| | <u>UMTS Services</u> |

Ax.2 Linked work items

ETE UMTS QoS, UTRAN architecture, Iu interface, Architecture for the GSM-UMTS Platform, Multimedia in UMTS.

GSM/GPRS Work Items on IP, QoS and multi-media are also linked.

Ax.3 Justification

The current mechanisms used within GSM/GPRS may not fully support the QoS requirements of GSM/GPRS/UMTS. To cater for this developments may be needed to the packet domain for R99, for example RA update and inter SGSN RA update may need revision to support QoS requirements and allow the evolution possibilities regarding Mobility Management for GSM/GPRS/UMTS R99 and future releases. The main focus of the study is the Core Network architecture issues. This work item proposes to study the options available within R99 to satisfy these requirements via enhancements of currently defined mechanisms. ETR 23.20, Td 137, Td199 should be included as starting points for study. The developments of ongoing GPRS QoS will also be incorporated and considered.

Ax.4 Service Aspects

Ensure Service continuity within GSM/GPRS/UMTS for inter-SGSN RA Update and study the relationship and impacts of SGSN transfer with SRNS-Relocation.

Ax.5 MMI-Aspects

No impact upon MMI is expected (if the requirements are satisfied).

Ax.6 Charging Aspects

No impacts expected.

Ax.7 Security Aspects

The current security mechanisms for GSM, GPRS and UMTS may be different, the impacts of inter-SGSN RA update to this will be considered.

Ax.8 Impacts

| <u>Affects:</u> | <u>USIM</u> | <u>ME</u> | <u>NW</u> | <u>Others</u> |
|--------------------------|--------------------|------------------|------------------|----------------------|
| <u>Yes</u> | | <u>X</u> | <u>X</u> | |
| <u>No</u> | <u>X</u> | | | |
| <u>Don't know</u> | | | | |

Ax.9 Expected Output and Timescales (to be updated at each plenary) –

An ETR discussing the issues and a proposed solution. Changes to developing GSM/GPRS/UMTS R99 standards may result depending upon the output of the study.

Approval of WI: SMG #28 (February 99)

Start of Report February 99

Approval of deliverable by STC May 99

Approval of deliverable by SMG SMG #29 (June 99)

| New specifications | | | | | | |
|---|---|-------------------|--------------------------|---|---------------------|--|
| Spec No. | Title | Prime rsp. STC | 2ndary rsp. STC(s) | Presented for information at SMG# | approved at SMG# | Comments |
| XX | Support for real time services in the Packet domain for GSM/GPRS/UMTS R99 | SMG 12 | SMG3, SMG2 | | SMG29 (June 99) | Linkage with 3GPP for UMTS is required |
| Affected existing specifications | | | | | | |
| Spec No. | CR | Subject | | Approved at SMG# | Comments | |
| | | To be determined | | | | |

Note: Some GSM specifications might be affected.

Ax.10 Work item rapporteurs

Modus

Ax.11 Work item leadership

SMG12 in conjunction with the relevant SMG2 and 3 experts plus 3GPP TSG SA2, SA3 (CN). It should be noted that participation may change as the development of GSM/GPRS/UMTS R99 within SMG and 3GPP progresses.

Ax.12 Supporting companies

BT, NEC UK, Modus, Lucent, Fujitsu Europe, Nokia

Ax.13 Others

History

| Document history | | |
|----------------------|--------------------|--|
| Date | Status | Comment |
| March 97 | 3.0.0 | Approved by correspondence |
| June 1997 | 3.1.0 | Approved by SMG#22 |
| October 1997 | 3.2.0 | Approved by SMG#23 |
| December 1997 | 3.3.0 | Approved by SMG#24 |
| March 1998 | 3.4.0 | Approved by SMG#25 |
| June 1998 | 3.5.0 | approved by SMG#26 |
| January 1999 | 3.6.0 | approved after SMG#27 by correspondence by E-mail, approval date is 10 January 1999 The document contains changes as agreed by SMG27 in Praha |
| January 1999 | 3.6.1 | (Includes minor editorial corrections). |
| <u>February 1999</u> | <u>draft 3.7.0</u> | <u>to be approved by E-mail after SMG#28</u> |