3GPP Document **NP-99110**
Technical Specification Group Core Networks

Meeting #3, Yokohama, 21-23 April 1999

Source: **N3 Chairman**
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Title: Work Items in TSG-N3 / SMG3 WPD

Document for: **Information and Approval**

Attention: **Agenda item 6**

TSG-N3 / SMG3 WPD has the following Work Items for GSM R'99:

- GPRS Interworking with ISDN and PSTN
- Access to ISPs and Intranets in GPRS Phase 2 - Wireless/Remote Access to LANs (R99)

The following Work Item for GSM R'99 is proposed and has to be approved by TSG-N:

- An asynch-to-synch HDLC service for circuit switched data

The following Work Item is proposed for UMTS, the work split has to be defined:

- Service Control (CAMEL) support for GPRS / ISDN interconnect services

The following Work Items are proposed for UMTS, have to be approved:

- Real-time non-transparent facsimile
- Parameters for bearer and teleservices for the provision of the PIAFS service (32 and 64 kbit/s) (proposal, has to be checked whether it can be included in general WI on CC/SM for UMTS)

Other Work Items have to be checked whether TSG-CN3 has to contribute.

A WI is expected after S2 has made decisions on the architecture of circuit switched services in UMTS. CN3 has to contribute according to the work split between TSG-R and TSG-CN.

ETSI SMG3 **Tdoc 99-071**
Sophia Antipolis, France
13th-15th April 1999

Proposed Work Item Description for an Asynchronous to Synchronous HDLC Service in GSM and UMTS

3.x ASHDLC Release 99

3.x.1 SMG Work Area

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

3.x. 2 Linked work items

None.

3.x. 3 Justification

A very common approach used when dialling in to an Internet Service Provider (ISP)from a (fixed) terminal (PC) is to use the Point to Point Protocol (PPP), specified in RFC 1661. When the connection uses a V.42 compatible modem, the interface between the terminal (DTE) and the modem (DCE) is based on an asynchronous HDLC protocol terminated at the remote terminal (at the ISP), which is used as a bearer for the (asynchronous) PPP protocol. The driver for this protocol is usually delivered with the terminal's operating system.

By use of an asynchronous non-transparent (NT) modem service, the same scenario can be applied when the terminal is connected via a mobile entity. There is no further need for development, neither of the standards nor the existing products.

The situation is slightly different when connecting from a (fixed) terminal to an ISP via an ISDN terminal adapter (TA). In this case a *synchronous* PPP over HDLC is used. (V.110 or V.120 can alternatively be used, but HDLC is more widely supported by ISPs). The interface between the terminal and the TA is still asynchronous and the TA converts between asynchronous and synchronous PPP. This conversion is specified in RFC 1662. In order to apply this scenario to the mobile case, an asynchronous access structure between the MS and the IWF can be used, and an asynchronous to synchronous conversion, as specified in RFC 1662, must then be done at the IWF. Alternatively, if a synchronous access structure is to be used, the TAF in the MS must support the synchronous PPP. None of these alternatives are covered by the GSM specifications. Given the advantages of UDI and RDI over modem connections (faster set-up speed, higher bit rates, lower bit error rates), this must be seen as item for improvement of the specifications.

The situation can be amended if the IWF converts between asynchronous and synchronous HDLC. The main difference between the two protocols is how data transparency is handled. In asynchronous HDLC, flags and control characters are escaped, in synchronous HDLC bit stuffing is applied.

The terminal on the mobile side would access this new bearer service in exactly the same way as if a modem connection were used on the fixed network side. In the GSM network, an asynchronous NT bearer is used, and in the ISDN network, X.31 flag stuffing is used on a UDI or RDI connection. The mobile equipment

will have to signal that a UDI/RDI is to be used on the fixed network, which is the only impact on the mobile equipment.

No further standardisation is needed in order to specify the conversion between synchronous or asynchronous HDLC since this follows from the ISO 3309 standard and the PPP RFCs 1661 and 1662. However, the service needs to be signalled, and this needs to be added in the GSM specifications.

3.x.4 Service Aspects

The ASHDLC will be a new service in GSM and UMTS due to the required conversion in the IWF. However, it uses already existing bearers, namely asynchronous NT on the mobile side and X.31 flag stuffing on the fixed network side.

3.x.5 MMI-Aspects

3.x.6 Charging Aspects

None.

3.x.7 Security Aspects

None.

3.x.8 Impacts

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

3.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
02.02				
03.10				
07.01				
09.07				

3.x.10 Work item rapporteurs

Ericsson

3.x.11 Work item leadership

Ericsson

3.x.12 Supporting companies

Alcatel, Ericsson, Vodafone <*others still required*>

Proposed Work Item Description for Service control (CAMEL) support for GPRS PSTN / ISDN interconnect services.

3.x GPRS and CAMEL release 99

3.x.1 SMG Work Area

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

3.x. 2 Linked work items

"Modem and ISDN interworking in phase 2 GPRS"
"Definition of 3G call control model and protocol(s)"
"Multimedia in UMTS"

3.x. 3 Justification

There are a number of work items potentially addressing how GPRS will support "real time" (e.g. voice or video) services via GPRS and the PSTN/ISDN.

If we are to support GPRS interconnect to the PSTN and ISDN, for support of "real-time" services, it is important to provide a call related linkage to the CAMEL server in a compatible way to that currently deployed within the GMSC and VMSC, so that the users can have the same service capability across all access pieces.

Currently, within CAMEL phase 3, one of the requirements is to provide integration between GPRS and CAMEL and specifically this is addressing integration within the SGSN. However these current requirements only address interactions at the transport (PDP activation level). With the addition of "real time services" to GPRS whereby there are additional **call control** and **call related** events being supported, it is essential that CAMEL is further developed to interact with those call related actions. These actions are very compatible with existing developments on the GMSC and VMSC switched network platforms.

This proposed work item addresses the integration of the call control to be applied to GPRS with CAMEL in addition to the basic GPRS services already included in the scope of CAMEL Phase 3.

3.x.4 Service Aspects

With the introduction of call related services to GPRS it is important that services such as pre-paid and forwarding services, etc can be managed from the call control mechanism being introduced. This work item is therefore not a service development but a technology enabler to deliver new and existing services.

3.x.5 MMI-Aspects

3.x.6 Charging Aspects

It shall be possible for the CAMEL server to manipulate and control the charging information being generated as part of the call control mechanism being developed for GPRS.

3.x.7 Security Aspects

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

3.x.8 Impacts

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

3.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

Note: Some GSM specifications might be affected.

3.x.10 Work item rapporteurs

3.x.11 Work item leadership

3.x.12 Supporting companies

BT, Vodafone, Motorola *<others still required>*

3.x.13 Others

A.1 WI description

x Real-time non-transparent FAX (Enhancement of GSM 03.46) in UMTS/IMT-2000

x.1 TSG Project

	Terminal
	Radio
X	Core Network
	System

x.2 Linked Work Items

None

x.3 Justification

According to decision by 3GPP TSG SA WG1, real-time non-transparent FAX should be supported in UMTS/IMT-2000. By real-time we mean that a single end to end session completes the transaction.

x.4 Service Aspects

There are several ways to support real-time non-transparent FAX in UMTS/IMT-2000. Reuse of existing protocol is one way. Considering that services in 2G should be succeeded to ~~these~~ those in 3G without deterioration of service ability, we propose enhancement of GSM 03.46.

x.5 MMI Aspects

Handling of real-time non-transparent FAX (Enhancement of GSM 03.46) in UMTS/IMT-2000 affects to MMI.

x.6 Charging Aspects

~~F.F.S.~~Circuit Switched charging aspects in GSM should be applied.

x.7 Security Aspects

None

x.8 Impacts

Affects:	Terminal	Radio	CN	Others
Yes	X		x	
No		X		x

Don't know				

x.9 Expected Output and Time scales

Approval of WI: TSG CN WG3 #3 in 1999

Start of Report TSG CN WG3 #3 in 1999

Scope and first draft TSG CN WG3 #6 in 1999

Approval of deliverable by TSG TSG CN WG3 #8 in 1999

x.10 Work Item rapporteurs

Junichirou HAGIWARA (hagijyun@wsp.yrp.nttdocomo.co.jp)

x.11 Supporting Companies

NTT Mobile Communications Network Inc. (DoCoMo)

NEC Corporation

More Japanese companies are going to be added.

x.12 Responsible STC(s)

Primary Responsibility TSG CN WG3

Secondary Responsibility TSG T WG2

x.13 Others

Joint SMG3 - 3GPP TSG CN WG3 **Tdoc SMG3 3P99-150**

Sophia Antipolis France

25th-29th February 1999

Title: **Bearer Capability allocation between UMTS/IMT-2000 and other networks**

Source: **TTC SWG6-6-1**

Purpose: **For discussion**

The purpose of this contribution is to identify the necessity of new Bearer Capability allocation between UMTS/IMT-2000 and other networks since the other working group is currently defining requirements for bearer capability to be supported by the IMT-2000 terminal.

x Bearer Capability allocation between PLMN and other network

The allocation of the Bearer Capability between UMTS/IMT-2000 and other networks is needed if new bearer capability is introduced.

x.1 TSG Project

	Terminal
	Radio
X	Core Network
	System

x.2 Linked Work Items

None

x.3 Justification

As the matter of fact, the other working group is currently defining requirements for bearer capability to be supported by the IMT-2000 terminal. Therefore, the TSG-CN WG3 needs to keep a careful watch on the activity of this matter and once new requirement for bearer capability would be defined, start to investigate about the impact to the interworking between the UMTS/IMT-2000 and ISDN or PSTN as the activity of the TSG-CN WG3.

x.4 Service Aspects

None

x.5 MMI Aspects

None

x.6 Charging Aspects

None

x.7 Security Aspects

None

x.8 Impacts

Affects:	Terminal	Radio	CN	Others
Yes		X	X	
No				
Don't know	X			

x.9 Expected Output and Time scales

Approval of WI:	TSG-CN-WG3	(January 99)
Start of Report	TSG-CN-WG3	(February 99)
Scope and first draft	TSG-CN-WG3	(March 99)
Approval of deliverable by TSG	TSG-CN-WG3	(March 99)

x.10 Work Item rapporteurs

x.11 Supporting Companies

x.12 Responsible STC(s)

Primary Responsibility TSG-CN WG3

Secondary Responsibility ??

x.13 Others