3GPP TSG CN Plenary, Meeting #11
Palm Springs, USA. 14th - 16th March 2001

Tdoc NP-010034

Source:	**TSG_CN WG3**
Title:	**Updated Term of Reference for TSG_CN WG3**
Agenda item:	10.2
Document for:	APPROVAL

1. Terms of Reference

The TSG-CN has decided to structure the work into five Working Groups:
- WG1: MM/CC/SM.
- WG2: CAMEL
- WG3: Interworking with external networks
- WG4: MAP/GTP/BCH/SS
- WG5: OSA

Generally, TSG-CN WG3 (CN3) is responsible for the specification of bearer capabilities for circuit and packet switched (data) services, and the necessary interworking functions towards both, the UE (user equipment) in the PLMN and the TE (terminal equipment) in the external network. This work is related to the 3rd Generation of PLMNs in the scope of 3GPP as well as to the maintenance and development of the concerning GSM specifications (2nd Generation)

Specifically, this work includes the following responsibilities:
- CS domain (towards the UE)
    - layer 1 transport protocols (mainly rate adaptation in GSM or requirements on layer 1 in 3G)
    - layer 2 transport protocols (mainly RLP)
    - signalling issues (i.e., negotiation and mapping of bearer capabilities and QoS information in the sense of specifying parameters, parameter values and combinations of them, needed to specify services and to enable the 3G-MSC/IWF to select appropriate services towards the fixed network)
- CS domain (towards the fixed network)
    - mapping of signalling information
    - mapping of user data, status & control information
    - mapping and negotiation of QoS
    - evolution of bearers at the interworking point with other types of networks
- CS domain (within the PLMN)
    - user plane protocols between MGWs (Nb)
    - control of the user plane protocols (Nb), together with TSG-CN WG4
    - defining of parameters and parameter values for the control of Media Gateways (Mc), together with TSG-CN WG4

- PS domain
    - Gi interface
    - R reference point (TE – MT) related to the PDP context de/activation (scope of TS 27.060)
    - network interface data to be transported by the GTP
    - the GTP (29.060)
    - packet data protocols (PDPs) (e.g. IP, PPP)
    - services that use PDPs (e.g. Mobile IP, DHCP)
    - study and proposal of QoS negotiation and reservation mechanisms
    - definition of external and 3G internal QoS mechanisms
    - mapping of QoS parameters
    - Services (e.g. multimedia) interworking with other protocols
    - Study of security interworking with external networks (a big topic with corporate customers)

- IM CN subsystem of the PS domain
    - Interworking between different Multimedia-protocols

- contribute to the Interface between CSCF and UE (Gm) related to interworking to external networks
- contribute to the Interface between CSCF and Internet (Mm) related to interworking to external networks
- QoS protocols (such as DiffServ or RSVP),
- RTP for real-time applications

- Data Services
  - end-to-end interworking for packet and circuit switched data services
  - CS facsimile (service provision)
  - Multimedia (transport and interworking aspects as well as inband signalling)
  - Text telephony (transport and interworking aspects (V.18))

Interworking with the following external networks or domains has to be considered:
- PSTN
- ISDN
- IP networks
- IM CN subsystem of the PS domain

Interworking between the UTMS core network and other core networks of the IMT-2000 family is out of the scope of TSG-CN WG3.

2. Dependencies with other groups

2.1 TSG internal dependencies

TSG-CN WG3 sees dependencies with the following groups:
- TSG-CN WG1: Whereas WG1 is responsible for the radio interface layer 3 procedures and protocols, WG3 see their responsibility in defining parameters and combinations of parameter values needed to specify services and to enable the IWF to select an appropriate service towards the fixed network.
- TSG-CN WG4: Whereas WG4 is responsible for specifying core network internal MM/CC/SM procedures and operations, WG3 have the responsibility for defining information elements that require to be transferred by means of the needed procedures. There are also dependencies related to the work on GTP.
- TSG-R WG3: This WG provides transmissions means via the Iu reference point, TSG-N WG3 see their responsibility in providing layer 1 (rate adaptation) and layer 2 protocols for data transmission between the UE and the core network.
- TSG-SA WG2: This WG provides an overall architecture of the UMTS system. TSG-N WG3 is responsible for providing details on interworking with external networks based on the concepts provided by TSG-S WG2. TSG-S WG2 give guidance in questions related to the architecture.
- TSG-SA WG1: This WG provides requirements on services. Solutions provided by TSG-N WG3 have to fulfil these requirements. TSG-S WG1 give guidance in questions related to the service requirements.
- TSG-T WG2: This WG is responsible for the specification of terminal services and applications. The close co-operation is needed when protocols between UE and the Core Network are specified. Applications designed by TSG-T WG2 may have impact on network architecture or interworking with external networks.

2.2 External dependencies

External dependencies exist with ITU-T and IETF. TSG-N WG3 will not directly liase with these organisations. A liaison shall only take place via the individual members.

3. Specifications

TSG-CN WG3 is responsible for the following GSM and 3G technical specifications and reports:

3.1 Packet switched
TS 09.60 GPRS Tunnelling Protocol
TS 29.060 GPRS Tunnelling Protocol
TS 09.61 Interworking between the PLMN and PDNs
TS 29.061 Interworking between the PLMN and PDNs
TS 07.60 MS Supporting GPRS
TS 27.060 MS Supporting GPRS

3.2 Circuit switched
TS 03.10 GSM PLMN Interconnection Types
TS 43.010 GSM PLMN Interconnection Types
TR 23.910 GSM Circuit Switched Data Bearer Services in UMTS
TS 03.45 Transparent Fax
TS 03.46 NonTransparent Fax
TS 23.146 Real Time NonTransparent Fax in UMTS
TS 03.54 Shared Interworking Function
TS 23.054 Shared Interworking Function
TS 03.70 Routing of calls to/from Public Data Networks
TS 04.21 Rate Adaptation on the MS-BSS Interface
TS 44.021 Rate Adaptation on the MS-BSS Interface
TS 04.22 Radio Link Protocol
TS 24.022 Radio Link Protocol
TS 07.01 General Terminal Adaptation Functions
TS 27.001 General Terminal Adaptation Functions
TS 07.02 Asynchronous Terminal Adaptation Functions
TS 27.002 Asynchronous Terminal Adaptation Functions
TS 07.03 Synchronous Terminal Adaptation Functions
TS 27.003 Synchronous Terminal Adaptation Functions
TS 08.20 Rate Adaptation on the BSS-MSC Interface
TS 48.020 Rate Adaptation on the BSS-MSC Interface
TS 09.03 Signalling Requirements on Interworking between ISDN/PSTN and the PLMN
TS 09.04 Interworking between the PLMN and CSPDN
TS 09.05 Interworking between the PLMN and PSPDN (PAD Access)
TS 09.06 Interworking between the PLMN and ISDN/PSPDN (Packet Access)
TS 09.07 Interworking between the PLMN and ISDN/PSTN
TS 29.007 Interworking between the PLMN and ISDN/PSTN
TS 29.414 CN Nb Data Transport and Transport Signalling
TS 29.415 CN Nb Interface User Plane Protocols

3.3 IM CN Subsystem of the PS Domain

TS 29.162 Interworking between IM CN Subsystem with IP Networks
TS 29.163 Interworking between IM CN Subsystem with CS Networks