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Source: **N4 Chairman**

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Title: **DRAFT ITU-T CONTRIBUTION ON INITIATED WORK ON H.248 PACKAGING**

Agenda item: **Please do not forget the AGENDA ITEM**

Document for: **INFORMATION/ APPROVAL**

Summary

This contribution describes the specification activities that are performed by the 3rd Generation Partnership Project (3GPP) for their bearer independent circuit-switched core network. It describes that 3GPP are going to specify mobile specific H.248 packages and would appreciate close co-operation with ITU-T to perform this task.

This contribution has been endorsed by TSG CN, 20-22 September 2000, Oahu, Hawaii (USA).

Introduction

The 3rd Generation Partnership Project (3GPP) is currently actively involved in the specification of an evolved mobile network, which will contain three subsystems/domains:

- IP Multi Media Subsystem;
- Packet Switched Domain
- Circuit-Switched Domain

This contribution focuses on the evolution of the circuit-switched domain, which re-uses a number of ITU-T protocols, i.e. Q.1902 (BICC) and H.248 (GCP). 3GPP has agreed that the Bearer Independent Circuit-Switched Core Network is based on the separation of the call and bearer control functionality. This separation is reflected into the architecture for Release 2000.

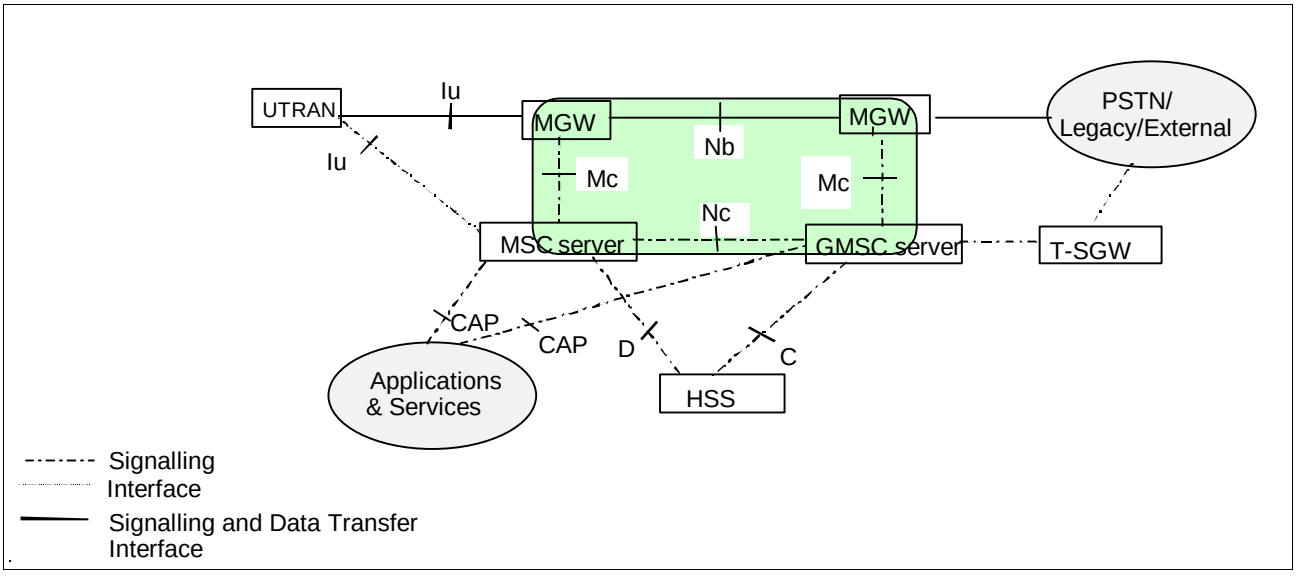

Figure 1 **The call and bearer separated CS architecture**

Media Gateway (MGW):

This component is PSTN/PLMN transport termination point for a defined network and interfaces UTRAN with the core network over Iu.

The functionality defined within MGW should be consistent with existing/ongoing industry protocols/interfaces that will satisfy the requirements.

A MGW may terminate bearer channels from a switched circuit network (i.e., DSOs) and media streams from a packet network (e.g., RTP streams in an IP network). Over Iu MGW may support media conversion, bearer control and payload processing (e.g. codec, echo canceller, conference bridge) for support of different Iu options for CS services: AAL2/ATM based as well as RTP/UDP/IP based.

- Interacts with MGCF, MSC server and GMSC server for resource control.
- Owns and handles resources such as echo cancellers etc.
- May need to have codecs.

The MGW will be provisioned with the necessary resources for supporting UMTS/GSM transport media. Further tailoring (i.e packages) of the H.248 may be required to support additional codecs and framing protocols, etc.

The MGW bearer control and payload processing capabilities will also need to support mobile specific functions such as SRNS relocation/handover and anchoring It is expected that current H.248 standard mechanisms can be applied to enable this.

MSC Server:

MSC server mainly comprises the call control and mobility control parts of a GSM/UMTS MSC.

The MSC Server is responsible for the control of mobile originated and mobile terminated 04.08CC CS Domain calls. It terminates the user-network signalling (04.08+ CC+MM) and translates it into the relevant network – network signalling. The MSC Server also contains a VLR to hold the mobile subscriber's service data and CAMEL related data.

MSC server controls the parts of the call state that pertain to connection control for media channels in a MGW.

GMSC Server:

The GMSC server mainly comprises the call control and mobility control parts of a GMSC

Nc Reference Point (MSC Server – GMSC Server)

Over the Nc reference point the Network-Network based call control is performed. Examples of this are ISUP, an evolvement of ISUP for bearer independent call control (BICC) or SIP-T. In the R'00 architecture different options for signalling transport on Nc shall be possible including IP.

Nb Reference Point (MGW-MGW)

Over the Nb reference point the bearer control and transport are performed. The transport may be RTP/UDP/IP or AAL2 for transport of user data. In the R00 architecture different options for user data transport and bearer control shall be possible on Nb, for example: AAL2/Q.AAL2, STM/none, RTP/H.245.

Mc Reference Point (MGCF – MGW)

The Mc reference point describes the interfaces between the MGCF and MGW, between the MSC Server and MGW, and between the GMSC Server and MGW. It has the following properties:

- full compliance with the H.248 standard, baseline work of which is currently carried out in ITU-T Study Group 16, in conjunction with IETF MEGACO WG.
- flexible connection handling which allows support of different call models and different media processing purposes not restricted to H.323 usage.
- open architecture where extensions/Packages definition work on the interface may be carried out.
- dynamic sharing of MGW physical node resources. A physical MGW can be partitioned into logically separate virtual MGWs/domains consisting of a set of statically allocated Terminations.
- dynamic sharing of transmission resources between the domains as the MGW controls bearers and manage resources according to the H.248 protocols.

The functionality across the Mc reference point will need to support mobile specific functions such as SRNS relocation/handover and anchoring. It is expected that current H.248/IETF Megaco standard mechanisms can be applied to enable this.

3GPP Specification Activities re-using ITU-T Recommendations

3GPP TSG CN has agreed to initiate specification work to specify the mobile specific packages for H.248 to provide the necessary stage 3 specifications for the Bearer Independent CS Core Network. The packages will introduce the handling of the mobile CS resources within the MGW. 3GPP TSG understands that the H.248 expertise is existing within ITU-T and therefore, assistance from the H.248 experts will be highly appreciated.