Technical Specification Group Services and System Aspects ***TSGS#8(00)0293***
Meeting #8, Düsseldorf, Germany, 26-28 June 2000

Source: **TSG SA WG2**
Title: **WI on** Feasibility study for transport and control separation in the PS CN domain
Agenda Item: **6.2.3**

Work Item Description

Title: Feasibility study for transport and control separation in the PS CN domain

1 3GPP Work Area

	Radio Access
X	Core Network
	Services

2 Linked work items

None identified

3 Justification

A number of architecture principles have been identified in TR 23.821. This work item addresses the following principles:

- Decomposition of network functions:
  in particular, it shall be possible to separate transport from signalling and control
- Separate functions that are likely to evolve independently

It is well understood, as identified by these principles, that a separation of the control functions from the transport functions allows for an independent growth of signalling and data traffic. In particular, this translates to an independent scalability of the number of subscribers on the one hand, and the end-user traffic on the other hand. Further to this, the separation allows for optimisations on the user-plane transport.

In the current architecture the general principle of transport and control separation is basically applied in the CS CN domain only. This work item addresses the case of the PS CN domain.

4 Objective

The objective of this work item is to study how to introduce a clear separation of transport and control functions in the PS CN domain, with minimum impacts on the reference architecture for R'00.

With this end in view, functional elements of the PS CN domain that provide both significant control and transport functions may be decomposed into two separate functional entities: a server entity taking care of the control traffic and a media gateway handling the payload traffic. An exact distribution of the functions currently supported by a single functional element between the servers and other network entities will be defined as the result of this work item, if necessary.

The control protocol used between servers and media gateways, if applicable, may be H.248. Consequently, extensions to H.248 or any other protocol which may be chosen for this task would have

to be defined and standardised within 3GPP. This work item will identify and define these extensions, and extensions to other interfaces if applicable.

More generally, the aim of this work item is to identify and strive to solve all issues introduced by such evolution of the PS CN domain. At the end of the feasibility study, the remaining open issues will be reported and their importance will be assessed. An analysis of the benefits and drawbacks of separating the control and transport functions in the PS CN domain will also be performed.

5 Service Aspects

The resulting architecture should not affect existing services (e.g. pre-paid, hot billing, etc).

6 MMI-Aspects

None.

7 Charging Aspects

Distribution of charging functions, as well as transfer of charging information between servers and media gateways need to be addressed.
No network charging aspects identified.

8 Security Aspects

Proper intra network security, according to the type of information transferred (e.g. charging, lawful interception, etc), would have to be enforced on the interface between servers and media gateways if applicable.

9 Impacts

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

10 Expected Output and Time scale (to be updated at each plenary)

New specifications						
Spec No.	Title	Prime rsp. WG	2ndary rsp. WG(s)	Presented for information at plenary#	Approved at plenary#	Comments
TR 23.xxx	Feasibility study for transport and control separation in the PS CN domain	S2		SA#9	SA#10	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments

11 Work item raporteurs

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12 Work item leadership

S2

13 Supporting Companies

Ericsson, Motorola, Orange, Samsung, Telia, Tellabs, Vodafone, 3Com, T-mobil.

14 Classification of the WI (if known)

	Feature (go to 14a)
	Building Block (go to 14b)
X	Work Task (go to 14c)

14a The WI is a Feature: List of building blocks under this feature

N/A

14b The WI is a Building Block: parent Feature

N/A

14c The WI is a Work Task: parent Building Block

Evolution of the Transport in the CN