3GPP TSG RAN#10 **RP-00-0683**
December 6-8, 2000, Bangkok, Thailand

Agenda Item: 9

Source: Nokia

Introduction.

This contribution contains the proposed WI sheet for the proposed new work item "IP based UTRAN Architecture". A separate contribution is provided on the proposed way to initiate the work on this WI.

Work Item Description

Title

IP based UTRAN architecture

1 3GPP Work Area

X	Radio Access
	Core Network
	Services

2 Linked work items

None

3 Justification

Release 4 is expected to contain IP transport layer solution as an option in addition to the ATM based connection. The next step in the utilisation of IP technology in UTRAN is to create IP based UTRAN architecture option in addition to the current architecture for Release 5.

The foreseen benefits of the introduction of IP based UTRAN architecture for Release 5 are:

- To enable a more scalable architecture within the UTRAN (e.g. separately scaleable control and user planes).
- To ensure more effective use of bandwidth within the UTRAN (e.g. capacity sharing between packet and circuit switched traffic when moving away from the fixed pipe approach to dynamic allocation of bandwidth.)
- To achieve the cost benefits of using widely deployed IP Technology as part of UTRAN (e.g. allowing increased use of generic IT platforms)
- Optimised radio performance through locating time critical radio functions closer to the air interface (e.g. packet scheduling in the BS to allow improved packet networking efficiency).
- To optimise the architecture for the possible requirements from the Release 4 High Speed Downlink Packet Access (HSDPA) study item.
- To support more efficiently multi-radio (both GERAN & UTRAN) resource optimisation.

The more detailed requirements, expected benefits and possible migration paths will be documented in the Technical Report."

4 Objective

The purpose of this new work task is to enable the usage of IP based UTRAN architecture for the transport of signalling and user data between Node B and Iu and other elements in UTRAN. The work is expected to include possible new UTRAN internal interfaces for various functional entities inside UTRAN for the control and user plane protocols.

The new IP based UTRAN architecture is expected be compatible with the current Iu interface to allow UTRAN evolution by maintaining the compatibility with the existing core network solution

Also during the work for the new interfaces, the existing protocols for user and control plane information transfer over Iur and Iub are to be utilised in terms of using the same information elements, value ranges, ASN.1 coding etc. which allows to have possibility for new specifications for new interfaces but retains the benefits of doing the further evolution of the protocols for both architecture options by in most cases by changing one specification only.

5 Service Aspects

None

6 MMI-Aspects

None

7 Charging Aspects

None

8 Security Aspects

Security aspects linked with the use of IP as UTRAN technology.

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
New TR	UTRAN IP based Architecture	WG3		RAN #11	RAN #12	

Affected existing specifications				
Spec No.	CR	Subject	Approved at plenary#	Comments
TS 25.401		UTRAN Overall Description	RAN #14	Other specifications impacted/created to be identified based on the TR.

11 Work item rapporteurs

Antti Toskala, Nokia

12 Work item leadership

TSG-RAN WG3

13 Supporting Companies

(In alphabetical order) Mannesmann, Nokia, Omnitel, Sonera, Vodafone,

14 Classification of the WI (if known)

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

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

(list of Work Items identified as building blocks)
A more complete work plan including the identified building blocks and work tasks will be part of teh new Technical Report.

14b The WI is a Building Block: parent Feature

(one Work Item identified as a feature)

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