TSG RAN#10 December 6-8, 2000 **Tdoc RP-00-0712**
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Source: Nokia

IP based UTRAN Architecture

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References: Tdoc RP-00-0683 (WI sheet), Tdoc RP-00-0691

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Introduction

- The purpose of this new WI 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
  - WI foreseen to include separation of the control and user plane due to different requirements in UTRAN.

Why IP based RAN Architecture? (1)

- 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)
- To achieve the cost benefits of using widely deployed IP Technology as part of UTRAN

Why IP based RAN Architecture? (2)

- Optimised radio performance through locating time critical radio functions closer to the air interface (e.g. functionality raised in connection with HSDPA in Node B).
- 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.

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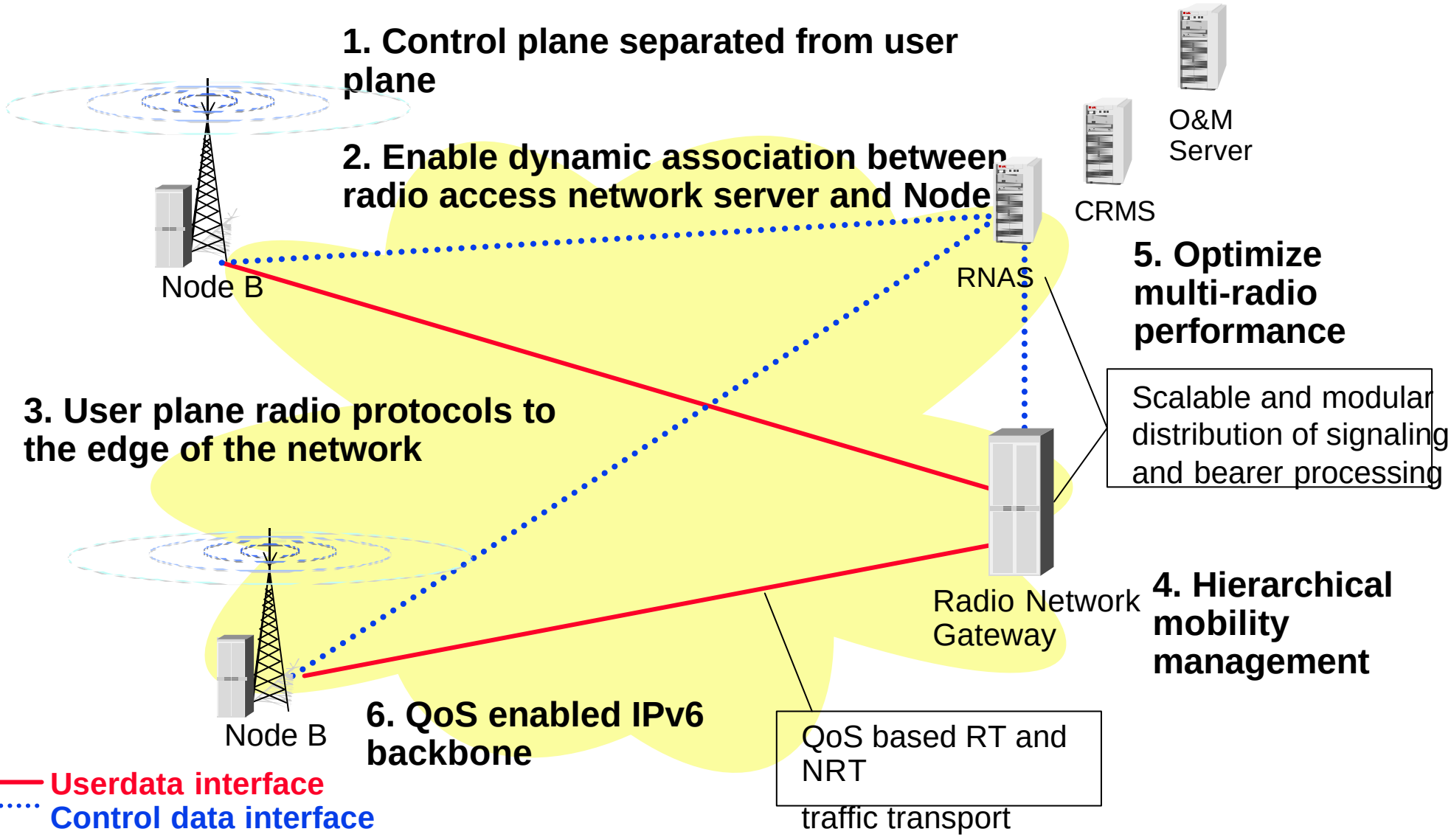
IP based UTRAN Concept Methodology



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IP UTRAN Architecture Concept Methodology

1. **Control plane separated from user plane**
2. **Enable dynamic association between radio network access server and Node B - scalable and modular distribution of signaling and user data processing**
3. **User plane radio protocols to the edge of the network - improving radio performance and transport resource utilization.**
4. **Hierarchical mobility management to hide RAN mobility from the core network**
5. **Common resource manager for optimised multiradio performance**
6. **QoS enabled IPv6 backbone**

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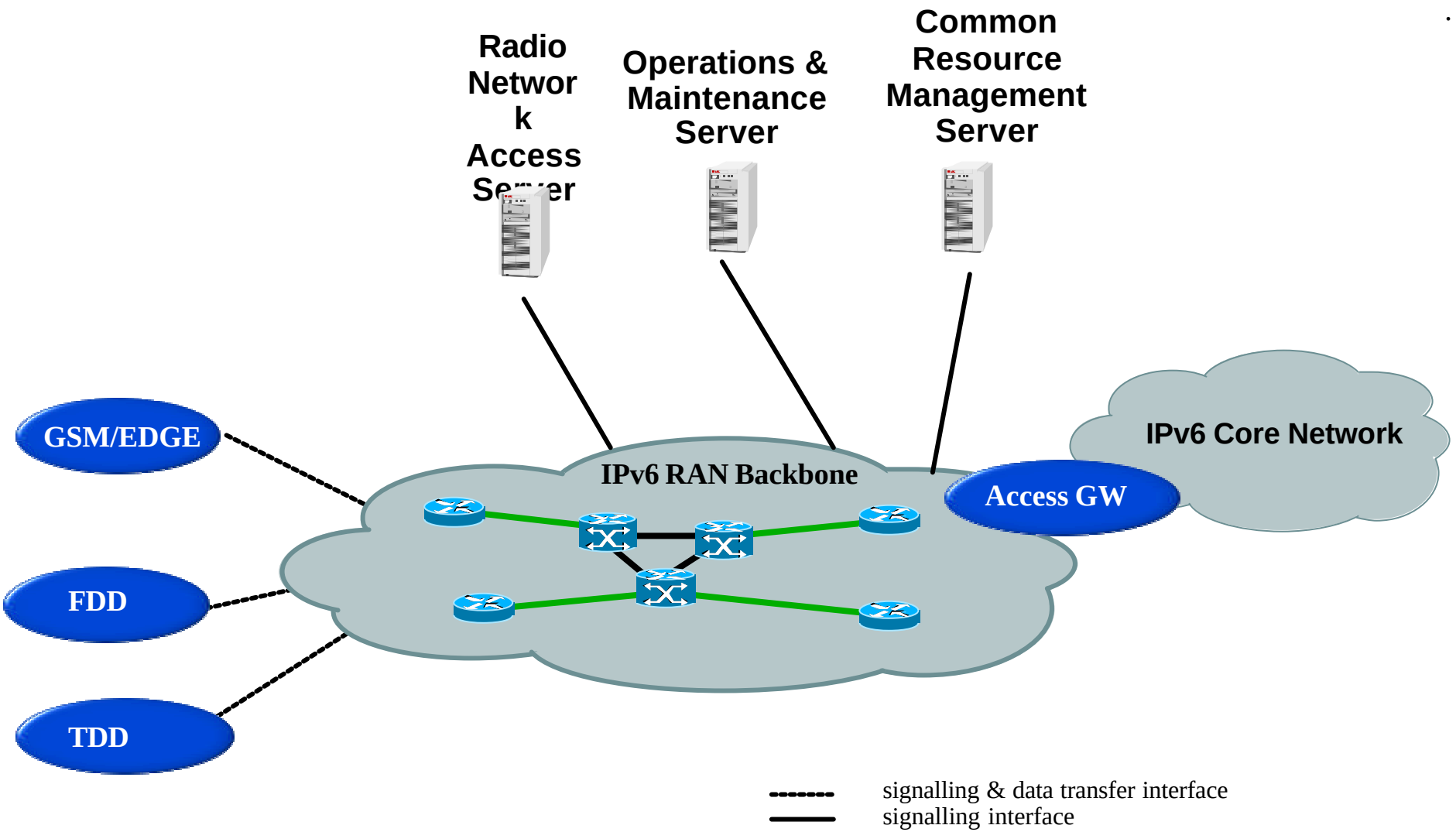
Multiradio IP UTRAN Architecture



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Proposed Way Forward

- RAN organises an Ad Hoc on the topic
- GERAN delegates should be invited as well.
- This Ad Hoc should take place before TSG RAN#11, e.g. 02/01 with suitable date for TSG RAN, especially for TSG RAN3 delegates and for TSG GERAN

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