

## **"Mobile Networks Evolution to NGN"**

This presentation will develop a thesis that current Mobile Networks can migrate to a NGN solution to optimize the network cost both for developed as well as developing countries. This thesis is illustrated by two closely inter-related discussion threads:

- First, we show how a 2G/2.5G based PLMN infrastructure can smoothly and gradually evolve in order to offer new service capabilities for end-users to the operator's benefits. We show how evolution steps of a 2G/2.5G network like GSM/GPRS/EDGE or CDMA2000 1x RTT already allow the introduction of new services and educate customers for further advanced services based on the network evolution to UMTS or to CDMA2000 EVDO/EVDV and then to NGN type of solution. We also illustrate that with a proper choice of advanced technologies this evolution can be realized in a cost effective manner that preserves investments made in current 2G/2.5G infrastructure.

- Second, we illustrate why NGN is a good solution in contributing to additional Operator's CAPEX and OPEX reductions using packet type of backbone. NGN concept means split of the network into different layers: an Access Layer, a Transport Layer with Media Gateways, a Control Layer (eg Call Servers, Home Location Register, etc.), and a Service Layer (eg Application Servers). This NGN concept applied to the Mobile environment results in the split of the MSC functionality in two distinct entities: the MSC Server responsible for the call control and Media Gateway control, and the Media Gateway in charge of user plane traffic (voice and circuit data) handling. It does not impact the Packet Core Network (PCN). With NGN, voice is transmitted over a packet network instead of a TDM network allowing a merge of data and voice transport backbones into a single transport network with optimal resource use and significant OPEX reduction. In addition, NGN concept also brings ALL2 switching with Tandem Free Operation (TFO) which save bandwidth in the backbone (Voice stays transcoded in the backbone) and transcoders are only used at the edge of the network (for the connection to other networks). The use of NGN allow operators to install Media Gateways close to the access network and switch locally the calls instead of switching at the big town where the Call Server is.

Developed economies operators need solutions allowing them to introduce new services – and derive new revenues - at the best cost and preserve the existing investments made in current networks. Developing economies need before anything cost effective solutions to improve access to the network and the OPEX cost. NGN can be a good solution using a single packet backbone for circuit and packet Core Network. It is our belief, and we bring concrete elements of proof with this presentation, that NGN technology is a technology suitable both for developed and developing economies.