

## **" WiMAX Wireless Networks in rural area "**

This presentation will develop the fact that WiMAX Wireless networks offer a good compromise to provide universal communication and services solution suitable for rural areas.

This thesis is illustrated by two closely inter-related discussion threads

- First, we show how a WiMAX based fixed & PLMN infrastructure can provide a good alternative for the supply of telephony and broadband services in the rural areas and gradually evolve in order to offer new service capabilities for end-users to the operator's benefits. We show as well how the WiMAX infrastructure can be used in existing fixed/mobile networks as extensions to bring a seamless service introduction for wire line and wireless subscribers. We illustrate how WiMAX can be used in the evolution from 2.5G Mobile Infrastructure to 3G IMT-2000 networks and allow the introduction of new services and educate customers for further broadband advanced services.

- Second, we show how WiMAX infrastructure allows developing countries to improve the universal access to telecom infrastructure in a cost effective manner. This was helped largely due to the ubiquity of the 2G installed infrastructure (more subscribers base compare to the fixed installed base worldwide) that allowed economies of scale and provided developing countries with a competitive solution for universal access. It also shows that WiMAX in mobile or fixed networks can be used as an effective wireless local loop technology without resorting to the full mobility feature if priority is given to improve accessibility in areas where any type of telecom infrastructure (fixed or mobile) is lacking. It must also be noted that a WiMAX infrastructure can be used as a backbone network.

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 offer data services (digital bridge) as well as the basic voice telephony service. It is our belief, and we bring concrete elements of proof with this presentation, that WiMAX technology, its use in 3G IMT-2000 networks and the fixed capability of current MSC/LE/ Packet Data Networks are the universal technologies suitable both for developed and developing economies.