Réponse de Nokia Siemens Networks à la consultation Arcep- Boucle Local Radio du 23 mai 2011

Question #1.

NSN does not have any specific comment to add.

Question #2.

Wireless local loop networks and devices represent one of the technologies which may complement other technologies such as Fiber, DSL, WiFi or satellite to bring fixed access services to subscribers who live in white or grey zones. Operators such as Axione in France are indeed deploying WiMAX equipment in that context. The density of the population and the geography are the main drivers to define the level of penetration for WiMAX vs the other technologies.

Wireless local loop networks could have indeed provided, at the initial stage of their deployment, a strong interest for getting nomadic services in these zones or even in urban areas. However, the rapid roll-out of broadband wireless services via 3G+ technologies , even in less dense areas, has almost closed the window of opportunity for WiMAX nomadic services in most geographies.

The situation faced in France is similar to the one faced in most of the other european countries, where the rapid development of 3G+ wireless services has overwhelmed the window of opportunity for WiMAX.

BWA/IMT/LTE (or WIMAX) would have a better chance to succeed as a complementary part of the whole offering of 3G/4G services. The existing usage could be modified so that spectrum could be used as a capacity addition to existing mobile users.

Question #3.

While the products availability (networks & CPEs), their costs and their performance are already a reality in terms of commercial service, NSN sees quite limited evolutions due to the fact WiMAX will remain a niche market vs other technologies such as 3G+ and LTE. In order to improve their business case, the operators need to get full benefit of any technology evolution and any costs decrease, enabled by the larger volumes brought by mainstream technologies such as 3G+ and LTE.

It is also seen that 3.5 GHz band is not the best possible band for networks coverage and we believe that 3.5GHz is not needed for BWA/IMT access in all geographical areas. We still believe that operators should have the right to use the 3.5 GHz band e.g. for BWA/IMT backhaul in areas, where the spectrum is not needed for BWA/IMT access. This is already allowed in the current EC framework.

Regarding the use of the existing 3.5GHz spectrum, NSN sees 2 major evolutions which are possible:

- already available: deliver mobile backhaul services within this spectrum

This application corresponds to the major challenge faced by the mobile operators with the introduction of smartphones, in terms of backhauling the data traffic from the access (base stations) to the core network. As it is well known, this data traffic has been consistently increasing in the past 2/3 years, and will continue to rapidly increase in the coming years. The mobile operators need to invest in more efficient capabilities to backhaul this traffic, and more spectrum is required.

NSN already delivers mobile backhaul equipment in 3.5GHz band.

- starting in 2013/ 2014: deliver broadband access services based upon LTE technology

This application corresponds to the continued and dramatic ramp-up of mobile data services. Despite the progress performed on spectrum afficiency in the existing bands, and despite the new bands (800MHz

and 2.6GHz) to be awarded soon, it is foreseen that the mobile operators will need more spectrum to cope with these data traffic requirements.

LTE standardization is already well advanced and NSN plans to further introduce the corresponding equipment. However, the exact timing for the availability of the equipment depends upon the timing of the ecosystem in this band, which is not well defined yet.

Question #4

a- NSN is not aware of any such project if it is about providing fixed and nomadic services. However, when it comes to mobile backhauling, there may be a market request for mobile operators.

b- Should the licensing of 3.5 Ghz band be rearranged by Arcep, everybody (existing 3.5 GHz license holders and the other operators) should be treated in an equal manner, in order to guarantee the best use of this spectrum.