Annex

Response to TRAI Consultation Paper on "Overall Spectrum Management and review of license terms and conditions" from Nokia[1] and Nokia Siemens Networks[2] (TRAI Consultation paper No. 6/ 2009, dated 16th October, 2009)

Nokia and Nokia Siemens Networks are pleased to comment as below :

Spectrum requirement and availability

2. Do you agree with the spectrum requirement projected in ¶ 1.7 to ¶1.12? Please give your assessment (service-area wise).

Comments :

There is no need to separate the spectrum demand of 2G, 3G, LTE and BWA. Our view is that IMT covers all these needs and before WRC-07 it was estimated in ITU-R Report M 2078 that the total spectrum demand for IMT would be between 1280 MHz to 1720 MHz for year 2020. Thus the projections made by TRAI would seem to fall short of the national requirements.

3. How can the spectrum required for Telecommunication purposes and currently available with the Government agencies be re-farmed?

Comments :

Re-farming of the spectrum bands is being practiced world wide so as to make available ITU / internationally harmonized frequency bands for commercial mobile services in a time bound manner, with benefits of economies of scale, ease in inter-operability of networks and roaming.

[1] **About Nokia**
Nokia is a world leader in mobile communications, driving the growth and sustainability of the broader mobility industry. Nokia connects people to each other and the information that matters to them with easy-to-use and innovative products like mobile phones, devices and solutions for imaging, games, media and businesses. Nokia provides equipment, solutions and services for network operators and corporations.
About Nokia Siemens Networks
Nokia Siemens Networks is a leading global enabler of communications services. The company provides a complete, well-balanced product portfolio of mobile and fixed network infrastructure solutions and addresses the growing demand for services with 20,000 service professionals worldwide. Nokia Siemens Networks is one of the largest telecommunications infrastructure companies with operations in 150 countries. The company is headquartered in Espoo, Finland. www.nokiasiemensnetworks.com

4. In view of the policy of technology and service neutrality licences, should any restriction be placed on these bands (800,900 and 1800 MHz) for providing a specific service and secondly, after the expiry of present licences, how will the spectrum in the 800/900 MHz band be assigned to the operators?

Comments :

In India these bands are already broadly allocated for CDMA – GSM – GSM respectively.

If the spectrum is efficiently used, evolution of technology should be allowed based on the operators market plans. e.g. CEPT in Europe is in the process of defining "technology neutral" Block Edge Masks (BEMs) that would allow any technology that fulfills the BEM and possible other conditions in the band. The only justified restrictions are those that are necessary for the avoidance of additional interference between users.

5. How and when should spectrum in 700 MHz band be allocated between competitive services?

Comments :

When there is market demand and the harmonized channeling arrangements / band plan (and possible other regulatory conditions) have been agreed. All interested operators could be allowed to participate to licensing process. The band should be utilised for IMT as soon as released by the present users.

6. What is the impact of digital dividend on 3G and BWA?

Comments :

Digital dividend provides a unique possibility to get relatively wide new frequency band for IMT (that includes both 3G and BWA) below 1 GHz facilitating cost-efficient coverage building also in large areas of low population density. The channel arrangement should facilitate at least 2x10 MHz operator blocks and FDD is the preferred operation mode, as it best supports building of coverage. All modern and future standards are supposed to support both FDD and TDD so when FDD (2 x 50 MHz) is selected as the single duplexing method, it will enable technology neutrality as all modern standards support both FDD and TDD access methods. In our opinion, if both FDD and TDD access methods are allowed in the band 698-806MHz, the likelihood of interference problems would be significantly higher. Under such unfavorable frequency management regime, either FDD or TDD access method could be chosen by the various license holders. A license holder's choice of access method would adversely affect the quality of radio services that the neighboring band owner has chosen. Under such frequency management regime, the industry must develop or adapt unique radio communication solutions for each individual license holder.

Therefore, in order to be "technologically neutral", a clear band plan should be decided before a licensing procedure is prescribed and that best would be only consider FDD duplexing method in the band 698-806 MHz.

In any case, a harmonized channeling arrangement / band plan should be used, otherwise the benefits of this attractive new band would largely be lost (due to higher equipment cost / lack of economies of scale).

16. Since the amount of spectrum and the investment required for its utilisation in metro and large cities is higher than in rural areas, can asymmetric pricing of telecom services be a feasible proposition?

Comments :

The pricing, in general, is an operator issue and should be left to the market to decide. In rural areas building up of coverage is more expensive but the needed capacity is less than in city areas. On the other hand, a lot needs to be invested in city areas in order to get capacity but in cities, there should be more users who pay for the service. So, there is no major justification for asymmetric pricing.

Structure for Spectrum Management

57. What is your opinion in the desired structure for the efficient management of spectrum ??

Comments :

Our primarily objective should be to achieve efficient, timely allocation and prompt utilization of spectrum. Towards this goal, the regulatory structure should be strengthened, modernized and equipped with latest tools available worldwide. India would thus be able to achieve timely allocation of adequate spectrum in the ITU recommended globally harmonized frequency bands for various wireless services.