Nokia response to the RSPG draft opinion on “A Spectrum Roadmap for IoT”

Nokia welcomes the opportunity to give its views on the RSPG consultation on “A Spectrum Roadmap for IoT”.

In general, Nokia believes in the huge growth in the area of Internet-of-Things (IoT) and welcomes the RSPG activity in this area. While many of the IoT needs can be covered by 5G and the earlier generations of public mobile networks (Electronic Communications Services – ECS) there will be areas that cannot be covered using traditional operator networks. As listed in the Annex of the consultation document, the different IoT applications requirements vary from low bit rate local coverage to very high capacity, ubiquitous coverage with very low latency. Keeping this in mind, Nokia agrees with the approach of providing IoT in different frequency bands targeted to different type of usage (e.g. Short Range Devices and Public Mobile Networks).

Nokia has the following comments on the RSPG Opinion on IoT:

Opinion 1.

> Agree. Although many of the planned usages can be offered using the existing SRD and ECS technologies and spectrum, there will be use cases that will not fit in those categories. Those use cases may require a specific spectrum solution. Harmonized spectrum solution (meaning that spectrum need not be harmonized for IoT itself but for a usage that allows certain types of IoT that cannot go to SRD or ECS spectrum) is desired to avoid a high fragmentation in spectrum usage and to assure that sufficient economies of scale (and scope) can be achieved.

Opinion 2.

> It is true that currently spectrum availability is not constraining the growth of IoT but the reason is mostly that the IoT opportunity is still in the beginning phase and it is not yet clear where and how much IoT will be used. It is foreseen that new type of applications like local area ultra-reliable private networks will set new spectrum demands, as the traditional operators will likely be unable to provide the required service, at least at an affordable cost. Examples of such services include hospitals and smart factories, where the requirements vary from monitoring simple data to video transmission. In order to get full benefit from the economies of scale, the spectrum for such specific usages should be harmonized.

Opinion 3.

> In addition, spectrum solution for IoT in local area private networks is needed.

Opinion 4.

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Some foreseen IoT usage cannot be fulfilled with SRD and ECS spectrum and new spectrum solution(s) is likely to be required. Nokia supports further discussion on a roadmap for IoT spectrum access in Europe. In addition to the possible solution for further IoT spectrum, the discussion is likely to improve the general understanding of IoT use cases and spectrum needs.

Opinion 5.

Agree.

Opinion 6.

Agree. The 5G networks will have the advantage of national coverage, providing as such, for some of the IoT applications the spread and the penetration that is required/desired. This can be relevant in some IoT business where time to market and availability are essential.

Opinion 7.

Nokia supports the use of IoT in public mobile networks as part of the services that public operators offer to their customers. The ECS regulation is technology neutral in most of the current ECS bands and it is preferable that IoT technologies are specified in a way that they fit in the ECS bands' regulation (not that the ECS regulation should ensure that IoT fits in). In practice, this should not be a major issue.

Opinion 8.

No comment.

As a conclusion, Nokia views are very much in line with the draft RSPG opinion. Nokia supports more discussions on IoT use cases in order to improve the understanding of the IoT spectrum requirements. Especially, Nokia sees a need for a spectrum solution for 'PMR type' local area IoT networks e.g. in hospital and smart factory types of environments.

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