RADIO SPECTRUM POLICY GROUP
STRATEGIC ROADMAP TOWARDS 5G FOR EUROPE
DRAFT RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G)

Hughes Network Systems Europe, Ltd. and EchoStar Mobile Limited Comments

Overview

Hughes Network Systems Europe, Ltd. ("Hughes") and EchoStar Mobile Limited ("EML") (collectively, "EchoStar") welcome the opportunity to provide comments to the RSPG on the DRAFT RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G).

Hughes has been offering satellite and terrestrial broadband solutions in Europe since 1996. Hughes provides services to a wide variety of customers including Internet Service Providers, system integrators, private enterprises, and telecommunications service providers as well as government agencies. Hughes integrates managed products, services and solutions to provide customers with fast and reliable data, voice, video and multimedia services. Hughes' parent company, Hughes Network Systems, LLC ("HughesNet"), is the world's leading provider of broadband satellite network solutions for business and customers and pioneered the development of high-speed satellite Internet access services. Currently, over one million HughesNet customers in North America benefit from broadband satellite connectivity via high throughput satellites using Ka-band spectrum. Hughes is planning to expand this coverage and bring broadband satellite connectivity to European customers, also as part of the 5G ecosystem.

EML is a licensed operator of 2 GHz mobile satellite services (MSS) in all 28 EU countries and one of two operators of pan-European MSS with a complementary ground component (CGC). By the end of 2016 EML will provide wholesale customers with access to satellite and terrestrial network infrastructure that will support enhanced mobile communications across Europe. As part of this service offering EML is planning to deploy 5G technology under the 2 GHz license regime to provide voice and data services across all EU member states.

Consequently, EchoStar has a direct interest in this draft RSPG Opinion on spectrum related aspects of 5G systems, which could affect its ability to provide service in the future to customers in the EU. In general, we support the overall views expressed in the draft RSPG Opinion. However, EchoStar would like to provide the following comments below regarding proposals for the spectrum bands above 24 GHz.

5G Spectrum Bands above 24 GHz

EchoStar agrees with the RSPG that consideration of bands above 24 GHz should be limited to the bands identified for the WRC-19 agenda item 1.13. EchoStar does not see the need and benefit to explore other bands outside that list. RSPG mentions three bands in its draft Opinion that should be prioritized for use by 5G service providers: the 24.5-27.5 GHz, 31.8-33.4 GHz and 40.5-43.5 GHz bands. Although EchoStar has concerns regarding the use of any of these bands for 5G services, in particular we would caution against designating the 40.5-43.5 GHz spectrum band for 5G service providers. Any consideration of future 5G deployment in these bands must take into account the need to protect fixed satellite service ("FSS") operations, which provide important connectivity services to a wide variety of customers.

The 40.5-43.5 GHz spectrum band has a primary FSS allocation in Europe and is a very important band for FSS deployment. Hughes is planning to use this band for its broadband satellite systems covering Europe. The next generation of high-throughput satellites, already under development, will have a capacity of up to 1000 GBit/s to satisfy future capacity demand. High throughput satellites will offer significant service advantages to consumers, but these satellites will need to operate on several FSS spectrum bands to provide expanded capacity; the spectrum currently used for FSS deployment will not be sufficient. Although all spectrum above 24 GHz is well-suited to support FSS operations, the 40.5-43.5 GHz band will be an especially important and indispensable spectrum band for future high-throughput satellites. The high number of applications for orbital slots with the Radiocommunication Bureau of the International Telecommunication Union (ITU) for this spectrum band show that there is intense interest from the international satellite industry in this band.

The RSPG must take into account the needs of the satellite industry for expanded access to spectrum above 24 GHz, and in particular the 40.5-43.5 GHz band. While EchoStar recognizes the importance of 5G services, it urges the RSPG to take into account the need to protect FSS operations in this band as it considers its potential for 5G deployment.

Moreover, the development of standards for 5G technologies is still in a very early stage. Through EchoStar's engagement in the ITU and also the 3GPP standardization body, we are aware that it will take several years before 5G technologies are completely defined. Because of the long lead time before 5G services will be standardized and ready for development, EchoStar recommends that RSPG acts deliberately and takes the ITU and 3GPP developments into account when defining a timeline for implementation of 5G in bands above 24 GHz.

Lastly, we also want to mention that sharing with incumbent users need to be taken into account as well. Not only for the timeline, but also for the feasibility of 5G deployment in spectrum bands above 24 GHz. Incumbents also have spectrum requirements and the need for future growth.

Recommendations

EchoStar supports the overall objective of the draft RSPG Opinion on spectrum related aspects for next-generation wireless systems (5G). However, EchoStar urges the RSPG to exercise caution when prioritizing the 40.5-43.5 GHz spectrum band. This band is a very important spectrum band for the satellite industry for the deployment of high-throughput FSS satellites to provide satellite broadband connectivity to European customers. EchoStar also recommends that the RSPG takes the progress of 5G development and standardization into account when defining a timeline for implementing 5G in Europe. It is important that sharing analysis are done in a proper way, which requires detailed knowledge about all technical and deployment parameters, in order to protect incumbent services and also allow those services to prosper and grow.

Respectfully submitted,

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