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Nasjonal Kommunikasjonsmyndighet

Postboks 93, 4791 Lillesand

Eutelsat response to NKOM consultation on “Frequency needs towards 2030” / Innspill til høring om “Frekvensbehov mot 2030” - Eutelsat

Eutelsat S.A., one of the world’s leading satellite operators, with 36 satellites in orbit including 18 over Norway, would like to thank the Norwegian Communications Authority (NKOM) for sharing its considerations on management of spectrum resources. Eutelsat welcomes the opportunity to present its views on NKOM’s consultation on frequency needs towards 2030.

We concur with NKOM assessment that towards 2030, there will be major changes in particular in the area of satellite communications. These changes have even already started in recent years, with new generation of satellite networks such as very high throughput geostationary orbit (GSO) satellites to obtain more capacity and more flexibility, and the deployment of non-geostationary orbit (NGSO) constellations to enable new uses thanks to low latency and global coverage. The rise of demand for satellite based IoT solutions to transmit data everywhere, and the expected convergence of terrestrial and satellite networks are also key trends to be followed.

For instance, in 2020, Eutelsat launched its innovative EUTELSAT KONNECT satellite in Ka-band, a high throughput satellite capable of providing high quality broadband services over Europe and Africa. This latest-generation satellite service enables all types of users, from consumers to businesses, schools, hospitals, and governments to enjoy the social and economic opportunities that internet connectivity entails, whether they are in urban, rural or the remotest locations at affordable prices. Launched in 2022, Eutelsat will soon operate another Ka-band satellite over Europe and the Middle East, named EUTELSAT KONNECT VHTS (for Very High Throughput Satellite). This satellite will provide very high-speed Internet access throughout Europe, particularly in currently underserved areas, with a service comparable to that of a fibre-optic network in terms of performance and cost.

By delivering 500 Gbps instantaneously across Europe, EUTELSAT KONNECT VHTS will make a significant contribution to bridging the digital divide in the region.

This generation of new satellites is expected to further develop in the next decade, carrying more throughput and supporting new applications, as well as the stronger use of higher frequency bands such as the Q/V band (37.5-42.5 GHz downlink, 42.5-43.5, 47.2-50.2 and 50.4-52.4 GHz uplink). The 71-76/81-86 GHz band is being considered by the satellite industry in a longer term.

Eutelsat is developing a new constellation of nanosatellites in Low Earth Orbit (LEO), dedicated to the Internet of Things. Called ELO (Eutelsat LEO for Objects), their global IoT coverage will enable objects to transmit data irrespective of their location, demonstrating the fundamental complementarity between terrestrial networks and satellite technology.

Eutelsat expects in the next decade the convergence of terrestrial and satellite technologies. This complementary use of ground and space networks will provide high levels of coverage, resilience, and capacity. Work is currently ongoing at 3GPP to define the standards of satellite-based 5G communications.

All these trends will lead to new usages and new needs for spectrum, which might require updates to the current regulation.

Eutelsat welcomes NKOM recognition that satellite based services are critical or socially important, and in connection with social development and climate change. Therefore, before considering introducing new types of systems in the frequency bands allocated to satellite services, and that would disrupt the existing and delicate balance of coexistence, we would recommend NKOM to deeply analyze, with the support of stakeholders, the sharing conditions between these new systems and satellite systems.

Considering the significant financial investments in satellite networks, visibility and durability of conditions of operations of such systems is essential. Introduction of new systems in the same frequency bands should not bring some additional constraints on operations of existing satellite networks, nor on their future evolutions. This includes satellites, but also earth stations on the ground, either major hubs or end-user terminals.

Receivers can by nature only be victims of interference, and it should be noted that out of band emissions of adjacent spectrum users, that falls within earth stations receiving frequencies, are also the cause of interference. They can even seriously disrupt the received satellite signal and cannot be mitigated through band-pass filters at the earth station level. Recent experience in C-band with introduction of mobile networks had significant effects on satellite networks required to empty part of the spectrum and be constrained in the remaining adjacent part of spectrum with geographic deployment limitations and/or expenses with installation of specific filters to minimize interference from these mobile networks.

In “general trend” section, NKOM suggests that mobile communications would require even more spectrum than currently identified. We would kindly remind to NKOM that as a conclusion to ITU 2019 World Radiocommunications Conference, more than 17GHz have been further identified for IMT networks, on top of the

around 2GHz already identified during previous WRCs. Therefore, we would encourage NKOM to explore firstly means to develop usage of currently identified spectrum before considering identification of more spectrum, especially if this would be at the expense of satellite systems. We would for instance refer to recent example of Ofcom in United Kingdom, considering that “new spectrum is not the only way for network operators to increase capacity”, and suggesting alternatives such as upgrade to newest technologies and densification¹.

With this in mind, Eutelsat invites NKOM to balance the needs of all spectrum users and to take into account in their work and studies the protection and the development of existing and future satellite services.

Respectfully submitted,

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¹ See §5.1 and after in https://www.ofcom.org.uk/_data/assets/pdf_file/0017/232082/mobile-spectrum-demand-discussion-paper.pdf