

ESOA Contribution BEREC Work Programme 2022 Consultation

November 2021

ESOA, the EMEA Satellite Operator's Association (ESOA), representing the satellite communications sector as part of the space industry, would like to thank the Body of European Regulators for Electronic Communication (BEREC) for the opportunity to provide a contribution to the BEREC Work Programme 2022.

ESOA¹ (the EMEA Satellite Operators Association) is a non-profit organisation established with the objective of providing a platform for collaboration between satellite operators globally and a unified voice for the sector. ESOA is recognised as the representative body for satellite operators by international, regional and national bodies including regulators, policymakers, standards-setting organisations such as 3GPP and international organisations such as the International Telecommunications Union and the World Economic Forum. As the world's only CEO-driven satellite association, ESOA leads the sector's response to global challenges and opportunities. It offers a unified voice for the world's largest operators, important regional operators and other companies that engage in satellite-related activities.

1) Connectivity as a key priority

The COVID-19 pandemic has contributed to the global recognition of how crucial connectivity can be for society and has also underlined the limitations the digital divide brings for those millions of people who were not able to access or even afford connectivity at home during these difficult times. Indeed, with the transfer of many essential services online during the COVID 19 pandemic, many households have seen their lack of internet connectivity passing from simple inconvenience into a true hindrance that may even have cost them their livelihood. The COVID-19 pandemic has revealed the deep disparities in access to affordable and meaningful connectivity.

Even in Europe, many countries still suffer from a digital divide.² The most pressing need in Europe is to ensure that all EU citizens have access to a meaningful connectivity. In order to achieve universal service, we need to accelerate concerted action at all levels: at the 2021 High-Level Digital Debate of the General Assembly on Connectivity and Digital Cooperation held under the auspices of A4AI, ESOA signed a manifesto to develop a people-centered approach to achieve meaningful connectivity, together with several other associations worldwide.³

ESOA therefore welcomes BEREC's decision to maintain "promoting full connectivity" as a key priority in its 2022 Work Programme in line with BEREC's first high-level strategic priority. ESOA firmly believes that the biggest challenge to deploy connectivity everywhere is economic sustainability, as areas without proper coverage are typically remote or hard to reach areas where the low population density makes the business case difficult for telecom operators.

Satellite operators saw a significant increase in the number of new connections to satellite broadband in the EU during the pandemic. As recognised by the European Commission in their recent report on stronger, connected, resilient and prosperous rural areas by 2040, broadband coverage is key for businesses and citizens and *"a combination of terrestrial and space-based connectivity, ensuring high-*

¹ The members, activities, and other details about ESOA can be found at www.esoa.net

² A4AI – see: https://www.itu.int/en/ITU-D/Regional-Presence/Europe/Documents/Events/2021/Meaningful%20Connectivity/01_Sarpong.pdf

³ <https://a4ai.org/leave-no-one-behind-a-people-centered-approach-to-achieve-meaningful-connectivity/>

*speed broadband everywhere for resilient and cost-effective services will help achieve this.*⁴ Indeed, several technological options and especially hybrid solutions (with a mix of technologies involving Satellite, Terrestrial Mobile, WiFi) exist and have proven successful in enabling meaningful/ high speed connectivity, especially in the areas where it might not be cost efficient to deploy Fibre or 5G to everyone.

In order to encourage the use of a combination of technologies to deliver full connectivity, ESOA would like to recall the importance of ensuring that the principle of technology neutrality is well respected and truly implemented in practice. This will motivate Member States to look beyond the most obvious terrestrial solutions, which is urgently required to enable full connectivity.

2) Satellite and VHCN

ESOA notes that BEREC has repeatedly referenced technology-neutrality in the way it interprets Very-High Capacity Networks (“VHCN”). This is in line with the characterization of the “infrastructure of the future” as a “seamless integration of different networks and different technologies,” BEREC highlighted in its Strategy 2021-2025.

ESOA maintains that the European vision for future networks is one that is necessarily based on a network of networks in order to ensure a maximum of citizens can access 5G, VHCN and gigabit connectivity for all. Even though BEREC determined that satellite does not fall within its definition of VHCN, we do consider that this is a topic to be revisited in order to be future proof given that next generation satellite services are already emerging in Europe.

In addition, ESOA still considers that satellite communications can contribute to the VHCN deployments through two scenarios:

- a) Connectivity provided to end-users equipped with a terminal from a satellite gateway that is directly interconnected to Fibre. (Criterion 2)
- b) Connectivity provided to end-users equipped with a terminal from a satellite gateway that is the source of stored content, e.g., from a Cloud or data centre. (Criterion 4)

BEREC, unfortunately did not support ESOA’s comments and recommendations regarding Criterion 2 in its Draft Guidelines on VHCN, namely that criterion 2 should apply to satellite network because satellite gateways could be considered as equivalent to terrestrial base stations. Instead, BEREC chose to consider that satellite networks were very different from terrestrial wireless networks and were not eligible to criterion 2, but only to criterion 4." This is in our opinion still an exclusive approach that gives preference to certain technologies and undermines the benefits of existing and future space-based services at a time when the European Commission is planning its own next generation satellite network to support both 5G and 6G.

ESOA further insists on recommending that when updating criterion 4 of the BEREC Guidelines on VHCN, BEREC does not only based its decision on data collected from mobile network operators on 5G, but also seriously consider the feedback and information provided from a whole industry that while it is smaller than others, it is still key to the successful achievement of the European digital goals.

⁴ EC Communication on A long-term Vision for the EU's Rural Areas, https://ec.europa.eu/info/sites/default/files/strategy/strategy_documents/documents/ltvra-c2021-345_en.pdf, page 18

3) Report on supply-chain diversification and the anticipated pace of innovation and Report on the 5G Value Chain

The role of satellite in the global 5G ecosystem cannot be underestimated. Satellite networks constitute an essential but often invisible overlay for terrestrial networks to help realise the EU Gigabit society in which millions of connections between people, devices and things will require inter-connectivity and stability at unprecedented levels that terrestrial networks alone cannot deliver for citizens of modern societies.

The role of satellite in 5G has been well recognized and explained by the Electronic Communications Committee (ECC) of the CEPT in its report dated 18 May 2018 entitled Satellites in 5G which presents the main use cases of 5G by satellite already made possible with numerous high-throughput satellites (HTS) today in operation.⁵ Satellite operators are also involved in the work of 3GPP, the international body that provides a framework in which 5G standards are being developed, specifically supporting the 2 work items set to emerge as specifications in Release 17 in early 2022 - dedicated to ensuring satellite integration into the 5G ecosystem.⁶

For more information on the exact role of satellite in 5G, ESOA reiterates its invitation to BEREC to review its very comprehensive White Paper on Satellite, an Integral Part of the 5G Ecosystem⁷ and remain at BEREC's disposal for any further discussion on this topic.

4) Report on satellite connectivity for universal service

ESOA welcomes BEREC's intention to draft a report on the potential of satellite communication solutions for ubiquitous broadband connectivity, as well as the fact that it intent to do it in "an objective and technology neutral way."

ESOA again insists on the fact that technology-neutrality and inclusivity for all technology are of outmost importance and a real key to bridge the digital divide. The truth is that closing the digital divide will require more than just accelerating the roll-out of VHCN and that all technology have a role to play. Even in Europe, where increasing investments for high-speed broadband connectivity roll-out have been sunk for years, only 59% of households in rural regions have access to next generation access (NGA) broadband (>30Mbps) today.⁸

Technology neutrality must go beyond semantics and be fully embraced to ensure that future communication solutions are cost effective, affordable, available, flexible, and fit for purpose. To this end, policy makers and regulators should:

- Be open to all communications solutions available in in order to encourage innovation, investment, and competition both now and in the future
- Enable the most appropriate combination of technologies to deliver geographical coverage for both back- and front- haul connectivity in order to secure the most efficient and cost-effective solutions to provide services

It is important to support, enhance and promote a wide range of connectivity options, by avoiding the imposition of artificial technical requirement on parameters such as down- and up-link bandwidth or

⁵ See <https://www.ecodocdb.dk/download/e1f5f839-ba17/ECCRep280.pdf>

⁶ See 3GPP TR 38.811 v0.3.0 *Study on New Radio (NR) to support non terrestrial networks (Release 15)" and 3GPP TR 22.822 "Technical Specification Group Services and System Aspects; Study on using Satellite Access in 5G Stage 1 (Release 16)*

⁷ <https://www.esoa.net/5g>

⁸ Brussels, 30.6.2021, COM (2021) 345 final, COMMUNICATION on A long-term Vision for the EU's Rural Areas

latency that are only required for a limited number of applications and that limit the options for connectivity for many European citizens who could otherwise benefit from health, education, entertainment and many more services. As a result, connectivity solutions should provide meaningful connectivity and be based on actual users' needs; applications' requirements; and geographical situations in order to determine the best technologies to meet the required usage demands and contribute to meet the Universal Service goals.

It is noticeable that globally, mobile network operators routinely provide mobile network services using satellite as a means to connect base stations to the core network (“cellular backhaul”). Geostationary and non-Geostationary satellites can thus enable to cover more than 99% of the world’s population. While this has traditionally been relevant to developing countries, it is now also very relevant to Europe in particular to extend the reach of 5G beyond capital cities and to facilitate the deployment of VHCN to hard-to-reach or isolated areas. ESOA invites BEREC to acknowledge the importance of satellite to extend mobile broadband coverage to more users and things. The fact that the European Commission itself now recognises the potential of satellite communications and has taken first steps towards a European secure, space-based connectivity initiative is a great opportunity for BEREC to better understand the potential of satellite communications and its essential role in enabling 5G applications and services from the extension of their reach to ensuring network resilience and availability for reliable and ultra-reliable services.

Satellite operators have invested massively into new systems, and as a result, the satellite communications sector has been through several major innovation during the last decade: Non-geostationary (NGSO) systems are capable of providing unprecedented connectivity levels, including for very high-gigabit capacity, low-latency applications, whilst Geostationary (GSO) platforms have been also subject to strong capacity enhancements driven by a systematic digitisation of space technologies, the ‘softwarisation’ of satellite operations and other virtual network functions. Combined with the advent of new ground antennas and reliance on steerable spot beams using various frequency bands, these progresses have increased flexibility in geographical coverage and spectrum use.

As representative of 20+ global and regional satellite operators, providing a platform for collaboration between satellite operators globally and a unified voice for the sector, ESOA is looking forward to providing its feedback to the draft report on the potential of satellite communication solutions for ubiquitous broadband connectivity, when it is released.

5) Workshop on the digital divide

ESOA applauds the BEREC initiative to hold an internal workshop in order to exchange views regarding the implementation of the recommendation and best practices on closing the digital divide. ESOA’s vision is to help policymakers improve the state of the world by continuously bridging digital, education, health, social, gender and economic divides across diverse geographies and across mature and developing economies. ESOA is definitely interested to support, participate and speak at this event and will strongly recommend that this workshop embraces a truly inclusive approach.