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Dynamic Spectrum Alliance’s input to BEREC’s call for input on its Outline BEREC Work Programme 2024

The Dynamic Spectrum Alliance (“DSA”) welcomes the opportunity to contribute to the BEREC’s call for input on its Outline Work Programme 2024 (“WP 2024”). We especially appreciate this early call for inputs on the WP 2024 given the importance of developing a long-term view on connectivity, electronic communications and digital markets.

The DSA is a global, cross-industry, not for profit organization advocating for laws, regulations, and economic best practices that will lead to more efficient utilization of spectrum, fostering innovation and affordable connectivity for all. We advocate for policies that promote unlicensed and dynamic access to spectrum to unleash economic growth and innovation. Additionally, we advocate for a variety of technologies that allow spectrum sharing enhancing broadband access.¹

Whereas we appreciate that BEREC has limited competences in relation to spectrum regulation, and that this might also be the case of its individual members at national level, we are happy to contribute with specific proposals within BEREC’s area of expertise and competence, in particular on how to promote full connectivity in the EU and how to empower European end-users (strategic priority 1 and 3 of the outline WP 2024).

Strategic priority 1: Promoting full connectivity

DSA supports BEREC’s proposal to continue putting the promotion of full connectivity at the heart of its work programme for the next year.

The Digital Decade Policy Programme 2030 (“DDPP”)² has set ambitious connectivity targets for the EU, including all end-users being covered by gigabit connectivity up to the network termination point and all populated areas covered by a wireless network equivalent in performance to 5G.

¹ Our membership spans multinationals, small-and medium-sized enterprises, as well as academic, research and other organizations from around the world. A full list of DSA members is available on the DSA’s website at www.dynamicspectrumalliance.org/members

² DECISION (EU) 2022/2481 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 14 December 2022 establishing the Digital Decade Policy Programme 2030. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32022D2481&from=EN>

DSA strongly believes that the achievement of these connectivity goals will require policymakers at EU and national level to take into account the following considerations:

- It is essential that the principle of technological neutrality, as reflected in Recital 14 of the DDPP, is implemented in an effective way.

Recital (14) DDPP. “Technological neutrality, which is provided for by Directive (EU) 2018/1972 of the European Parliament and of the Council, is a principle that should guide Union and national policies for digital connectivity infrastructure of the highest performance, resilience, security and sustainability, in order to benefit from prosperity. All technologies and transmission systems able to contribute to the achievement of the gigabit connectivity, including the current and upcoming advancements of fibre, satellite, 5G or any other future ecosystem and next generation Wi-Fi should therefore be treated equally, where they have equivalent network performance.” (underlined text included by DSA)

In the context of this strategic priority, technological neutrality serves a decisive purpose, as full connectivity will not be achieved without the contribution of a combination of different players and technological solutions. An efficient and effective combination means that each connectivity need (whether it being indoor, on the move, to serve dense or rural areas, etc.) should be fulfilled by the most appropriate technology in terms of cost, energy efficiency, as well as affordability and quality of service for the end-users.

For BEREC, ensuring the principle of technological neutrality could be done by ensuring that any work item dealing with connectivity duly considers all the technologies able to contribute to the DDPP connectivity targets. This would mean looking beyond fibre and 5G, traditionally seen as the main priority by the national broadband plans, to include e.g., gigabit Wi-Fi. As explained further below, gigabit Wi-Fi is an essential technology to enable end users to access fibre. Indoor connectivity can only be achieved through a combination of Wi-Fi and fibre.

The DSA kindly recommends BEREC to reflect the principle of technological neutrality in the final BEREC WP 2024 and duly consider such a principle in the work items stemming thereof which include a connectivity angle.

- It is also crucial that BEREC works to identify outstanding and new connectivity bottlenecks and informs the Commission and national regulatory authorities so they can be addressed in time ahead of the 2030 deadline for the DDPP targets.

In this regard, DSA would like to bring BEREC's attention to the fact that the DDPP has set targets for fixed gigabit connectivity just up to the network termination point. This means that what happens after the network termination point and up to the end-user devices is not addressed by the DDPP. This might have very negative consequences for a truly and effective digital transformation of EU society. If connectivity at the last meter (within the building) is not at par with the planned gigabit targets (up to the building), we can expect that the take-up levels of gigabit connectivity will continue to lag behind coverage in the decades to come. Indeed, users would be hardly willing to sign up to gigabit fixed networks if the distribution network within the premises can only support megabit connectivity.

In conclusion, the DSA believes that the gigabit connectivity targets as set out in the DDPP (and the investments that are needed to achieve them) make no sense if the last meter (from the network termination point to the end-user device) is of lower quality than that delivered by the fixed network, this last meter emerging as a new connectivity bottleneck. The consideration of this last-meter bottleneck is essential to realise the strategic priority 1, as the promotion of "full" connectivity would imply looking at end-to-end connectivity instead of limiting the regulatory and policy interest at the network termination point.

Considering that 85% of EU internet traffic terminates over Wi-Fi, letting Wi-Fi fall behind triggers real risks to EU digital ambitions. Given that Wi-Fi is the primary way end-users use to connect to their fixed networks, attention should be paid to the performance of the Wi-Fi segment, in particular its ability to distribute the gigabit connectivity signal within the premises.

Wi-Fi connectivity also allows mobile operators to offload a significant proportion of their traffic onto Wi-Fi networks, thereby alleviating the deployment costs of mobile operators, and contributing to networks that are not only more efficient, but also more sustainable. As reported by ARCEP³ "Per Gb of traffic, mobile networks have close to three times the footprint of fixed networks for all the environmental indicators studied". Also, considering the growing presence of insulated buildings, indoor coverage will be provided in a much more energy-efficient way from inside, via Wi-Fi connectivity, than from outside via 5G connectivity.

Wi-Fi is a technology solution that complements both fibre and 5G networks in providing gigabit connectivity and it does so in an environmentally friendly manner. DSA invites BEREC to contribute to the DDPP 2030 targets by starting to assess in 2024 the situation of the last-meter in-building connectivity segment.

³ ARCEP, "Consommation énergétique des réseaux mobiles", 14 January 2022, <https://www.arcep.fr/la-regulation/grands-dossiers-thematiques-transverses/lempreinte-environnementale-du-numerique/consommation-energetique-reseaux-mobiles-etude-comparee.html>

The DSA strongly encourages BEREC to take stock of the in-building connectivity status (with the aim at identifying possible connectivity bottlenecks) through a specific work item in 2024 or by encouraging national regulatory authorities to do measurements of the quality of the in-building network through the BEREC Guidelines on QoS.

Strategy priority 3: Empowering end-users

The presence of a connectivity bottleneck in the form of low-quality Wi-Fi connectivity will not only undermine the efforts made by telecom providers in pursuing gigabit connectivity coverage but will also be significantly detrimental to end-users, as they would pay for a gigabit broadband subscription they cannot actually fully use as its performance would be capped to the lower performance of the Wi-Fi segment.

Gigabit Wi-Fi is beneficial for users as it is the most cost-effective technological solution to distribute gigabit connectivity within the premises, as it allows connecting a high number of devices on the basis of the same broadband subscription, thereby increasing affordability. Enabling both gigabit fibre “to the premises” and gigabit Wi-Fi “within the premises” is key to supporting European connectivity objectives in an affordable and sustainable way, for the benefit of European end-users.

DSA appreciates that the resolution of the in-building bottleneck (at least in the immediate future) might not be in BEREC hands, as in-building gigabit Wi-Fi connectivity depends on the allocation of spectrum resources in the upper 6 GHz band (6425-7125 MHz) for WAS/RLAN, and such a decision is being taken in other fora where BEREC is not involved. Nevertheless, BEREC can play a very important role by bringing transparency to the market and to end-users with regard to the actual performance of in-building connectivity, in particular to how it enables (or limits) the network signal delivered at the network termination point.

European end-users (individuals or business) should be empowered via strong transparency about the performance of their broadband subscription within the premises and, in case of low performance, about what is causing any reduction of speeds or quality, e.g., low quality Wi-Fi equipment.

The DSA would like to remind BEREC that gigabit Wi-Fi (Wi-Fi 7 standard and beyond) is able to deliver gigabit capacity and very low latency, but requires the upper 6 GHz band (6425-7125 MHz) to unlock its full potential. Gigabit Wi-Fi will be required to support the applications of the future decade such as augmented reality and virtual reality (“AR/VR”). As much of the virtual worlds will be experienced in an indoor environment (at least in the foreseeable future), the extent to which European end-users will be able to be part of this future will depend on the features and quality of the Wi-Fi segment.

As recommended above, the DSA strongly encourages BEREC to empower end-users by taking stock of the in-building connectivity status through a specific work item in 2024 or by encouraging national regulatory authorities to do measurements of the quality of the in-building network through the BEREC Guidelines on QoS.

The DSA remains at BEREC's disposal to discuss in more detail these comments or provide any further information that might be required.

Respectfully submitted,



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