

March 25, 2021

Radio Spectrum Policy Group

European Commission

Directorate General for Communication Networks, Content and Technology (CONNECT)

Electronic Communications Networks and Services Directorate

Spectrum Unit B4

B-1049 Brussels

Re: DSA response to the public consultation on Spectrum Sharing – Pioneer initiatives and bands

The Dynamic Spectrum Alliance (DSA)¹ would like to offer its views on the Draft RSPG Opinion regarding pioneer initiatives and bands for spectrum sharing. The DSA firmly believes that spectrum sharing (both vertical and horizontal) enables market growth, increased stakeholder involvement in providing broadband connectivity, new opportunities for innovation, new use cases, and more efficient use of spectrum.

DSA recommendations on spectrum sharing

The DSA believes that spectrum sharing is fundamental to a modern spectrum policy framework. First, the adoption of dynamic spectrum access enables sharing between incumbents and new wireless broadband users. Such sharing maximizes the overall public benefit by making more efficient use of spectrum and achieves other important objectives, such as developing a digital economy and smart cities, leveraging and developing artificial intelligence applications, rolling out 5G deployment, and improving digital connectivity. Second, spectrum sharing creates

¹ The Dynamic Spectrum Alliance is a global, cross-industry alliance focused on increasing dynamic access to unused radio frequencies. The membership spans multinational companies, small- and medium-sized enterprises, academic, research, and other organizations from around the world, all working to create innovative solutions that will increase the utilization of available spectrum to the benefit of consumers and businesses alike. A full list of the DSA members is available on the DSA's website at www.dynamicspectrumalliance.org/members/.

opportunities for new users to access spectrum resources, including non-traditional operators, such as industry verticals, educational institutions, healthcare facilities, etc. Increased access to spectrum, in turn, drives the development of larger equipment ecosystems and spurs innovation.

The DSA believes that the technical and industry capability challenges to spectrum management can be addressed through a combination of technology and policy/regulation innovation. To that end, the rapidly growing dynamic spectrum access ecosystem, which includes global businesses, academia, wireless equipment manufacturers, and regulators can share experiences and best practices in these areas.

On the licensing and regulatory front, the RSPG will likely need to develop its own recommendations on spectrum sharing opportunities in Europe to ensure fair, safe, and responsible use of spectrum while protecting incumbents from harmful interference. However, it is always useful to consider international experience in order to replicate good practices. One example is the Citizens Broadband Radio Service (CBRS) in the United States, which demonstrates the viability of shared spectrum use among both licensed secondary commercial and opportunistic users, while also ensuring protection of military and satellite incumbents from harmful interference.

Under the CBRS regulatory framework, the spectrum access system (SAS), which is an automated database system, coordinates CBRS frequency use and manages coexistence among the three tiers of users--incumbent (e.g., navy radar and satellite), priority access licensed (PAL), and general authorized access (GAA)--while an Environmental Sensing Capability (ESC) network detects incumbent naval radar use of the band, alerting the SAS to move commercial operations to non-interfering channels.² This framework ensures that incumbent operations can be protected from harmful interference, while enabling access to under-utilized spectrum by new commercial users. Furthermore, the success of this spectrum sharing framework – with over 100,000 CBRS devices launched in the first year of commercial service with no reports of

² See 47 C.F.R. § 96.

interference to incumbent users - demonstrates the viability of sharing between governmental and commercial users that are both concerned foremost about the continuity and reliability of their operations.

It should be kept in mind, however, that CBRS is a unique framework suited for a unique spectrum environment in the United States that requires the protection of intermittent and unpredictable U.S. Navy radar use. Spectrum sharing regimes need not be as complex in other countries or contexts. Indeed, DSA supports spectrum sharing regimes that are only as complex as required by the particular environment. We believe that simpler is always better. Multi-authorization arrangements and dynamic database approaches are two examples that would help to keep the regulatory framework for 5G and new broadband generations agile, flexible and future-proof.

The DSA also supports RSPG’s recommendations on “use-it-or-share-it” policies. Conceptually, use- it-or-share-it rules authorize opportunistic access to licensed spectrum that is unused or under-utilized in a particular area. Until spectrum is actually put into service by the licensee, it should be available for non-interfering use by others. Licensees need not lose rights whatsoever and should be able to reclaim use of the spectrum by deploying their own operations. In the CBRS band, the FCC authorized opportunistic access to unused PAL spectrum by GAA users.³ Opportunistic use of unused PAL spectrum is managed by the SAS, which requires GAA users to periodically check with the database to renew permission to continue operating. Similarly, PAL users must update the SAS with their deployment information in order to ensure their operations are protected. This “use-it-or-share-it” framework is one of the key reasons for the success of CBRS, and a similar policy should be considered in other simpler Tiered Spectrum Sharing Model (TSSM) frameworks.

A general “use-it-or-share-it” authorization has a number of benefits, as outlined below.

³ See Order on Reconsideration and Second Report and Order, GN Docket No. 12-354, at ¶ 177 (April 28, 2016).

First, opportunistic access reduces spectrum warehousing in areas where the economics are least attractive for large service providers. It can increase access for operators that are interested in serving such areas, but who are unable to access spectrum.

Second, opportunistic access further encourages secondary market transactions by facilitating price discovery on both the supply and demand side. For licensees, it will both identify users interested in a potential lease or license partition and provide information on the potential value (i.e., how much is my spectrum worth?). For users, opportunistic use enables them to test the local market and determine the value of a more secure, longer-term lease or partition agreement (i.e., how much am I willing to pay for spectrum?).

Third, opportunistic access lowers barriers to entry for innovative new use cases by parties that, at least initially, either cannot afford or do not believe they need to pay for exclusive use and interference protection. The option to deploy, at least initially, without committing to the cost of a long-term lease or license could be particularly useful for small providers and industries.

Last but not least, it is important to stress that successful introduction of dynamic sharing relies on the availability of a significant ecosystem. For 3GPP technologies, DSA recommends that RSPG focus on frequency bands supported by 3GPP in order to leverage existing and developing ecosystems. For Wi-Fi technologies, DSA recommends RSPG to focus on the 5945-7125 MHz band, which is the de-facto globally harmonised band for Wi-Fi 6E and Wi-Fi 7.

With regard to the introduction of spectrum sharing on a national vs. regional basis within Europe, DSA is concerned that national adoption could lead to a fragmented market and threaten the success of such initiatives. While dynamic spectrum sharing solutions enable national administrations to adapt the implementation of the sharing framework to their national situation through the database, it is important for the technical and regulatory framework to be available at EU level, and for sufficient spectrum availability to be guaranteed in all Member States. EU-sized solutions are more likely to be successful, while country-sized solutions are more likely to fail.

Beyond these general views, the DSA recommends that the RSPG move from theoretical discussions to practical implementation by focusing on the deployment opportunities described below.

Suggestion for a pioneer initiative: the 3800-4200 MHz band

The DSA encourages the RSPG to consider adoption of dynamic spectrum access in the 3800-4200 MHz band to enable sharing between incumbents and new mobile and fixed broadband users on both a wide area and local area basis. Such sharing would maximize the overall public benefit by making more efficient use of this spectrum and would achieve other important objectives, such as developing a digital economy and smart cities, leveraging and developing artificial intelligence applications, rolling out 5G deployment, and improving digital connectivity.

There is increased interest in the 3800-4200 MHz band internationally for 5G services, particularly given the large bandwidths potentially available in this range. We encourage RSPG to consider introducing new mobile and fixed broadband services across the whole band to maximize the opportunity for all interests.

The use of commercially available dynamic spectrum access solutions would greatly facilitate the use of this critical mid-band spectrum for new mobile and fixed broadband services, while enabling incumbent services to continue to use the band on a protected basis. The DSA and its member companies have extensive experience in enabling sharing of both fixed and mobile broadband services with fixed satellite service and point-to-point incumbents and are ready to assist RSPG in its efforts to introduce mobile and fixed broadband in this band while also maintaining access for existing users.⁴

⁴ http://dynamicspectrumalliance.org/wp-content/uploads/2019/03/DSA_DB-Report_Final_03122019.pdf

Finally, DSA strongly urges RSPG to:

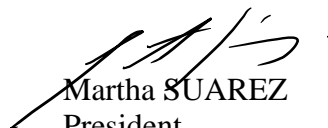
1. Introduce spectrum sharing and dynamic spectrum access techniques to the 3800-4200 MHz band;
2. Consider the costs and benefits of allowing multiple access options (tiers of licenses) in the band versus exclusive licensing; and
3. Adopt a “use-it-or-share-it” policy to prevent licensees from warehousing valuable spectrum resources.

Spectrum sharing in the 5925-7125 MHz band

While WAS/RLAN low-power indoor (LPI) and Very Low-Power (VLP) systems can share spectrum above 5945 MHz with incumbent users on a license-exempt basis, higher power systems (indoor and outdoor) can potentially operate in the 5925-7125 MHz band under a light-licensing regime. Where authorized, outdoor Wi-Fi systems are already today playing an increasingly important role in providing connectivity on company and university campuses, on large industrial sites, in public areas and at major outdoor events but also for fixed wireless access (FWA). With Wi-Fi 6E, the level of performance and the quality of service available to outdoor users can be enhanced dramatically.

DSA therefore encourages the RSPG to promote the deployment of higher power WAS/RLAN systems in the 5925-7125 MHz band on a light-licensing basis, also taking into account the application of dynamic database concepts, such as Automated Frequency Coordination (AFC) in the United States and South Korea, to ensure protection of incumbent services.

Respectfully submitted,



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