

April 29, 2022

The Manager  
Spectrum Licensing Policy  
Australian Communications and Media Authority  
PO Box 13112  
Law Courts  
Melbourne VIC 8010

**Dear Spectrum Licensing Policy Manager,**

Federated Wireless Inc. (Federated Wireless) hereby submits comments in response to the Australian Communications and Media Authority (ACMA) “Five-year spectrum outlook 2022–27 and 2022–23 work program” Draft for Consultation (the Consultation). Given our experience in implementing dynamic spectrum sharing in the 3.5 GHz and 6 GHz bands in the United States,<sup>1</sup> Federated Wireless appreciates the opportunity to offer our perspectives on how ACMA can leverage commercially available automated spectrum management tools and technology to achieve its goals of increasing efficiency, minimizing congestion, and encouraging competition in the provision of wireless broadband services.

Our experience with automated spectrum sharing in the 3.5 GHz CBRS band demonstrates the power of cloud computing and software to improve the management of a critical resource like spectrum for wireless broadband services. The success of the CBRS band and the Spectrum Access System (SAS) that is used to protect three different classes of incumbent users is instructive to sharing in other bands. With over two years of commercial CBRS operations, there have been no reports of interference from itinerant federal, fixed satellite service (FSS), or point-to-multipoint incumbent users. This demonstrates that automated sharing of spectrum bands amongst different types of users – including both satellite and terrestrial as well as itinerant and fixed – is both achievable and manageable. Furthermore, the CBRS experience proves that automated spectrum sharing systems can protect incumbent operations as they exist today and as they change in the future.

Federated Wireless shares ACMA’s view that there is a growing demand for localized access to spectrum by entities that want to deploy private networks in support of a wide range of services, including industrial IoT applications, rural broadband connectivity via neutral host, smart city deployments, smart agriculture, healthcare, education, etc. We also

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<sup>1</sup> Federated Wireless is a U.S.-based wireless technology company that has been certified by the U.S. Government to manage dynamic sharing of the 3550-3700 MHz band, known as the Citizens Broadband Radio Service (CBRS), between incumbent military and commercial uses, as well as between different tiers of commercial uses on both a licensed and unlicensed (licensed by rule) basis. Federated Wireless is also a prospective Automated Frequency Coordination (AFC) system administrator in the United States, Canada, and other countries that are adopting rules to permit unlicensed (or class-based license) devices to operate on a shared basis in the 5.925-7.125 GHz band (the 6 GHz Band). Federated Wireless is interested in becoming an AFC system administrator in Australia.

agree that adopting different geographic authorization approaches is a good way to address this demand.

To that end, we encourage ACMA to consider licensing approaches that enable opportunistic (license by rule) use of the bands it has identified in the Consultation, as well as previously licensed bands, to enable more robust and efficient sharing of frequencies that might otherwise be under-utilized in certain geographic areas. Rather than requiring users to apply for a license for a specific geographic area, we believe that the use of an automated dynamic sharing database solution would permit users to “right-size” their spectrum demands - requesting access to the exact amount of spectrum in the exact geographic area that they need. So long as that access will not impair other licensed users, the request can be granted within a matter of minutes. However, if the request would impair the use of spectrum by either another licensed user or a pre-existing opportunistic user, the dynamic sharing system can offer alternatives and/or find ways to enable co-existence amongst opportunistic users.

This opportunistic access approach has been successfully implemented in the U.S. CBRS band where hundreds of different users are deploying a wide variety of systems, including public mobile services and private networks – all in the same frequencies and without the need for geographic area specific licenses. To date, there have been over 228,000 base station deployments in the CBRS band, predominantly using opportunistic access, which demonstrates both the pent-up demand for spectrum by non-traditional users and the benefits of an automated approach to the management of the spectrum.

In the coming months, Federated Wireless will also be introducing an automated approach to secondary market leasing of spectrum. The U.S. CBRS rules allow SAS administrators to implement a streamlined process for licensees of CBRS spectrum to offer access to unused spectrum on a leased basis. Federated Wireless has developed a “Spectrum Marketplace” for CBRS license holders to lease their unused spectrum assets more efficiently and for users to find spectrum to meet their needs more efficiently. We often refer to this capability as the “Airbnb” for spectrum. And, just like Airbnb and similar platforms have revolutionized the real estate and hospitality industries, we believe the use of automated spectrum sharing database systems will revolutionize how spectrum is leased and accessed for a variety of new use cases.

In response to concerns regarding the cost and complexity associated with the automated shared spectrum technology and/or the perceived lack of demand, Federated Wireless notes that an automated approach to licensing has numerous advantages that outweigh the costs, namely: 1) speed of implementation; 2) less bureaucracy and more business certainty; 3) a vibrant innovative ecosystem; 4) greater efficiency in the use of spectrum; and 5) future-proof (meaning it can be adjusted quickly and easily to accommodate future needs). As mentioned above, the success of the CBRS band in the United States demonstrates how quickly spectrum can be put to use on a nationwide basis by hundreds of different users by leveraging cloud-based technology and automation.

Similarly, the planned use of an automated database solution for the 6 GHz Band demonstrates how this technology can be simplified when circumstances warrant. The Automated Frequency Coordination (AFC) system that will soon be implemented in the 6 GHz band in the United States, Canada, and elsewhere is significantly less complex than the CBRS SAS. Given that the incumbent use of the 6 GHz band is predominantly fixed and there is sufficient spectrum available on a shared basis to enable more “conservative” calculations of incumbent protections, the AFC database solution was designed in a way that reduces both cost and complexity. Nonetheless, the same underlying technology is the basis for both the SAS and the AFC, and it can be readily applied to other bands and sharing situations.

As mentioned in our comments in response to ACMA’s consultation on Low Interference Potential Devices (LIPD) Class Licence in the 6 GHz Band for radio local area networks (RLANs), Federated Wireless recommends that ACMA move forward as soon as possible to allow LIPD access to the full 1200 MHz of the 6 GHz Band and to permit Standard Power as well as outdoor operations in conjunction with the use of an AFC. We see significant industry interest in using the 6 GHz band for a wide variety of use cases that require higher power levels and greater operational flexibility than the current LIPD rules allow. We also see widespread interest in the use of AFC systems to manage those operations. We, therefore, recommend that ACMA leverage the development of AFC systems and associated devices that are about to be launched commercially in other countries in order to take advantage of the growing global ecosystem.

In conclusion, automated dynamic sharing technology is available today from multiple vendors. It can be readily adapted to meet the unique challenges of the Australian market and assist ACMA in meeting its spectrum management goals. We look forward to working with ACMA to bring the benefits of this technology and experience to Australia.

Sincerely,

**Jennifer M. McCarthy**

Vice President, Legal Advocacy

[jmccarthy@federatedwireless.com](mailto:jmccarthy@federatedwireless.com)