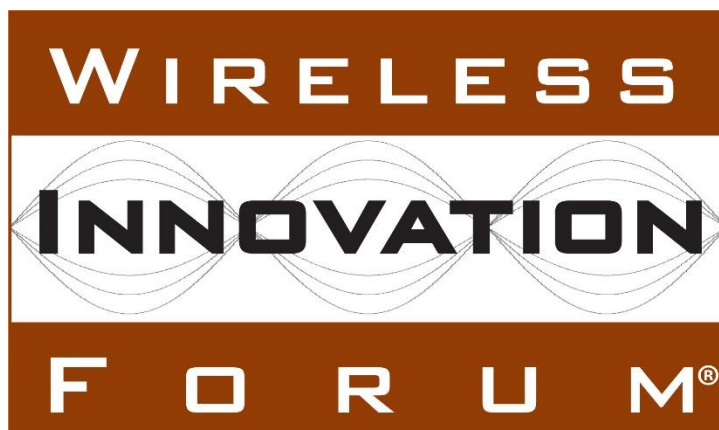




Wireless Innovation Forum Input to ACMA 6 GHz AFC Consultation

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Table of Contents

TERMS, CONDITIONS & NOTICES	i
Executive Summary	iii
1 WinnForum perspective and relevance to the 6 GHz band	1
2 6 GHz AFC Standard Power Sharing Mechanisms	1
2.1 Deterministic coordination for standard-power operation	1
2.2 Technology neutrality and multi-vendor interoperability	2
2.3 Propagation modelling and interference protection criteria	2
2.4 Incumbent-data quality, supplementary repositories, and transparency	2
2.5 AFC system approval: controlled testing plus public trial	3
2.6 Security and authentication	3
3 Recommendations to ACMA on implementing AFC in Australia’s 6 GHz band	3
4 Offer of engagement	4
5 Conclusion	5
6 Submitted by	6
7 References	7

Executive Summary

The Wireless Innovation Forum (WinnForum) supports the use of Automatic Frequency Coordination (AFC) Systems as an appropriate spectrum-sharing mechanism to enable standard-power unlicensed operations in the 6 GHz band while providing protection to incumbent services. WinnForum's published 6 GHz work products provide a mature, technology-neutral technical foundation for an AFC framework, including functional requirements, interface specifications, security and authentication considerations, incumbent-data quality processes, and test and approval approaches. These products are already the basis upon which 6 GHz AFC Systems are operating in the United States and Canada.

ACMA's discussion paper, available at <https://www.acma.gov.au/consultations/2025-10/views-6-ghz-band-spectrum-sharing-automatic-frequency-coordination>, indicates that Australia is exploring AFC to enable standard-power operation in part of the 6 GHz band (5925–6585 MHz), building on existing authorization for low-power operation. This submission therefore emphasizes AFC requirements, interfaces, data quality and assurance mechanisms that can be applied to the Australian context (including regional and remote connectivity use cases, such as fixed wireless broadband deployments) and scaled as market demand and implementation experience evolve.

Specific WinnForum recommendations are provided in Section 4 and cover: (i) a staged AFC rollout and tiered access model; (ii) Designation of AFC-managed sub-bands and standard-power operating controls; (iii) Competitive neutrality and interoperable AFC–device interfaces to support a multi-vendor ecosystem; (iv) Propagation modelling and incumbent protection criteria; (v) Data governance and quality (including supplementary datasets where required); (vi) an AFC approval, testing and trial regime; and (vii) Security and authentication requirements for AFC systems and devices.

To the extent that ACMA's consultation identifies issues that require technical compromise among incumbent services and new entrants in the band, WinnForum offers itself as a technology-neutral, multi-stakeholder organization whose membership spans all sectors of the wireless telecommunications industry.

Wireless Innovation Forum Input to ACMA

6 GHz AFC Consultation

1 WinnForum perspective and relevance to the 6 GHz band

WinnForum is a member-driven, international and multi-stakeholder organization that develops technical and operational specifications and recommendations to advance wireless innovation, including spectrum-sharing frameworks. WinnForum has engaged with regulators considering 6 GHz AFC frameworks and has offered support to inform national approaches and implementation choices. [12 p. 7–8].

Within WinnForum, the 6 GHz Committee was established to study and specify sharing arrangements in spectrum designated for unlicensed operation within all or part of the 6 GHz band (5925–7125 MHz). The Committee’s objective includes providing technical input to rulemaking and facilitating implementation of a common and efficient 6 GHz ecosystem. Initial Committee activities explicitly include defining interference protection criteria, propagation modelling, spectrum occupancy determination, developing a security threat assessment, and identifying AFC System and device requirements for incumbent protection. While the basis for the functional requirements activities was the regulatory framework of the US, additional mandatory and optional requirements were derived by the WinnForum to ensure a functional, operational ecosystem. Subsequent to the establishment of the WinnForum’s specifications, Canada leveraged these work products in developing their specifications for AFC Systems in Canada.

The Committee operates under WinnForum’s standard policies and procedures, including its Intellectual Property Rights policy, and emphasizes the technical aspects of sharing while simplifying interfaces and requirements to advance innovative and competitive sharing approaches and increase deployment speed of AFC systems. [11 p. 1–2].

2 6 GHz AFC Standard Power Sharing Mechanisms

2.1 Deterministic coordination for standard-power operation

A key advantage of the AFC System is that it enables incumbent protection based on user location, incumbent characteristics and other factors such as clutter. WinnForum’s published functional requirements specify that standard-power devices register with and be authorized by an AFC system prior to initial service transmission (and after location changes), may transmit only on frequencies and at power levels indicated as available by an authorized AFC system, and must access the AFC system to determine available frequencies and maximum permissible power prior to transmitting. [1 p. 18–19].

To ensure ongoing protection and provide predictable incumbent-protection behavior, the FCC rules also include at-least-daily contact with the AFC system to obtain the latest availability list, and a defined fail-safe behavior requiring cessation of operation when the device fails to successfully contact the AFC system within the required window. [1 p. 19].

2.2 Technology neutrality and multi-vendor interoperability

WinnForum's 6 GHz functional requirements state that requirements outside the normative annexes are described in a technology-neutral manner and are applicable for any unlicensed wireless communication technology operating under the relevant rules. [1 p. 7].

Interoperable, standardized interfaces are also critical for effective multi-vendor implementation and compliance testing. WinnForum's AFC System–Standard Power Device interface specification describes the interface between an AFC system and standard-power devices/proxies, notes that support for the Wi-Fi Alliance interface is non-exclusive, and includes a normative annex providing cross references for international support including 3GPP NR-U. [2 p. 1, 11].

To support competitive neutrality and market confidence, AFC systems should apply consistent protection logic and avoid discriminatory outcomes. WinnForum's functional requirements specify, at the direction of the FCC rules, that determinations and assignments of available frequencies and power must be made in a non-discriminatory manner. [1 p. 22].

2.3 Propagation modelling and interference protection criteria

AFC enables the systematic application of propagation modelling and interference protection criteria to compute frequency availability and power limits for a given device location. Current AFC Systems employ registration information to determine available frequencies and maximum permissible power using propagation models and interference protection criteria. [1 p. 22].

WinnForum's propagation and interference protection technical report frames these methodologies as extendable to additional incumbent types (beyond fixed service) and as relevant information to regulators and stakeholders outside the United States considering similar sharing rules. [3 p. 3].

2.4 Incumbent-data quality, supplementary repositories, and transparency

Reliable incumbent protection depends not only on models and criteria, but also on the quality and completeness of incumbent data used as inputs. WinnForum's incumbent data recommendation defines key categories of data issues that can affect AFC protection calculations, including blank, uncollected, erroneous, and conflicting data. [4 p. 3].

Where incumbent licensing databases do not contain all information required for accurate protection modelling, WinnForum's supplementary data repository specification describes the need for supplementary repositories to assist AFC systems and states that these repositories assist AFC systems in more accurately defining the level of protection required for fixed service receivers. [5 p. 1].

Transparency can be enhanced when supplementary datasets are publicly accessible. WinnForum's supplementary data repository specification states that the repositories shall have no read access control so that records are available to the general public. [5 p. 2].

2.5 AFC system approval: controlled testing plus public trial

WinnForum's published compliance test plans provide an implementation path for controlled conformance testing. The extension to AFC system and AFC device compliance test plans states that its scope is to define compliance test plans for AFC system operators and manufacturers to demonstrate conformance to AFC functional requirements in a controlled testing environment, as part of device and system certification. [6 p. 1].

To support independent, repeatable testing, WinnForum's authorized test laboratory (ATL) requirements specification defines requirements and steps for a lab to become and maintain status as an ATL, and includes requirements for accreditation consistent with ISO/IEC 17025. [7 p. 2-3].

WinnForum also recommends including a public trial / demonstration project as part of AFC approval. Its recommendation on AFC system approval process states that AFC systems must be tested and certified for commercial operation and that testing and certification must also include a public trial / demonstration project, intended to allow interested parties an opportunity to check that an AFC provides accurate results. [8 p. 6].

2.6 Security and authentication

AFC frameworks should include security and authentication measures that are commensurate with the AFC system's role in authorizing frequencies and power levels at scale. WinnForum's functional requirements include device security requirements that communications between standard-power devices and AFC systems are secure, and that devices address access-control requirements by verifying the AFC system's server certificate (with TLS-based secure communications as a baseline). [1 p. 21].

WinnForum's 6 GHz security technical report includes processes for standard-power devices to authenticate the AFC system and vice versa, including verifying that an AFC system's server certificate is issued by a trusted certificate authority and matches the domain name of the AFC system. [9 p. 5].

WinnForum's 6 GHz AFC authentication specification describes certificate policy considerations for issuing certificates to AFC participants (including AFC systems, standard-power devices, and proxies) and includes region-aware approaches to certificate validation [10].

3 Recommendations to ACMA on implementing AFC in Australia's 6 GHz band

Based on WinnForum's published 6 GHz work products, ACMA can establish a clear and technology-neutral AFC framework for standard-power unlicensed use in the 6 GHz band. WinnForum recommends that ACMA consider the following implementation elements (adapted to Australian incumbency, band plan decisions, and national data sources):

- Adopt regulations and specifications for AFC Systems and AFC-controlled unlicensed devices, with support of multi-stakeholder groups such as the WinnForum.

- Implement AFC within an explicit access construct in which incumbent licensed services retain priority, standard-power devices obtain coordinated access through AFC, and low-power (e.g., LPI/VLP) operation can continue under class-license conditions—paired with clear obligations, auditability, and dispute-resolution processes.
- Define AFC-managed sub-band(s) and ruleset(s) for Australia, consistent with the concept of a regulator-designated AFC-managed sub-band. [2 p. 2].
- Require affirmative operating controls for standard-power devices, including registration/authorization prior to transmission, operation only on AFC-indicated frequencies/power, daily re-query, and mandatory cease operation when AFC contact fails. [1 p. 18–19].
- Specify non-discriminatory frequency availability determinations by AFC systems to ensure competitive neutrality. [1 p. 22].
- Adopt interoperable device–AFC interface specifications and consider international-support cross references to reduce implementation friction for multi-vendor equipment and AFC services. [2 p. 1, 11].
- Define propagation modelling and interference protection criteria suitable to Australian incumbents, informed by extendable methodologies intended for use by regulators outside the United States. [3 p. 3].
- Establish explicit processes to address data quality issues (blank / uncollected / erroneous / conflicting incumbent data) and define supplementary data repositories where incumbent-protection modelling requires parameters not found in primary licensing datasets, including transparency via public read access where appropriate. [4 p. 3; 5 p. 1-2].
- Implement an AFC approval and compliance regime combining controlled conformance testing (test plans), qualified test labs (ATL requirements), and a public trial / demonstration project phase to build stakeholder confidence in accuracy. [6; 7 p. 2–3; 8 p. 6].
- Embed security and authentication requirements, including certificate-based identification and secure communications, consistent with published WinnForum security and authentication guidance. [1 p. 21; 9 p. 5; 10].

4 Offer of engagement

WinnForum welcomes the opportunity to support ACMA and stakeholders as Australia considers AFC-based 6 GHz sharing. WinnForum has indicated its willingness to support regulators in adopting AFC frameworks and in developing implementation approaches informed by multi-stakeholder technical work products.

To the extent that ACMA’s consultation identifies issues that require technical compromise among incumbent services and new entrants in the band, WinnForum offers itself as a technology-neutral,

multi-stakeholder organization whose membership spans all sectors of the wireless telecommunications industry.

WinnForum members include representatives from companies that may be affected as incumbents, new entrants, or both. WinnForum members recognize the desire for rapid new unlicensed deployments in 6 GHz, and the existing WinnForum AFC framework can help stakeholders reach convergence in areas of contention efficiently and expeditiously—while both protecting incumbents and enabling rapid deployment of new unlicensed systems in the band.

WinnForum further notes that the 6 GHz AFC concept is light weight and is intended to protect incumbents whose operations are transparent through existing public databases.

Where points of contention remain, WinnForum is ready and able to address them rapidly. Areas of focus may include:

- Propagation models.
- Interference protection criteria.
- AFC framework.
- Security.
- Interference determination, reporting and mitigation.
- AFC testing and certification.

Regulatory precedent supports the value of such multi-stakeholder technical work. In the U.S. CBRS proceeding, the FCC noted that a multi-stakeholder process could provide insight into technical factors and interference limits between coexisting services, and that policies and protocols may be informed by the work of an industry-led multi-stakeholder group.

During U.S. 6 GHz proceedings, the FCC further stated that it would “give great weight” to inter-industry consensus reached in organizations such as WinnForum when considering modifications to AFC system operations.

Accordingly, if requested, WinnForum can provide a neutral environment to collaboratively study and develop guidelines around the technical issues raised in this consultation, on a rapid timescale consistent with the expectations of the unlicensed community.

5 Conclusion

WinnForum supports ACMA adopting AFC for standard-power unlicensed operations in the 6 GHz band. An AFC framework grounded in technology-neutral functional requirements, interoperable interfaces, robust security and authentication, data-quality processes, and a staged approval model (lab testing plus public trial) provides a practical path to enable innovation while maintaining incumbent protection.

6 Submitted by

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Pete Young, 6 GHz Committee Chair, Wireless Innovation Forum

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