

Submission to the Australian Communications and Media Authority: **Automatic Frequency Coordination-assisted spectrum sharing in the 6 GHz band**

Response to Discussion Paper – November 2025

Submitted by: **Pentanet Limited**
Date: **February 2026**

Background

Pentanet (ASX: 5GG) is a wireless ISP (WISP) and fixed-line ISP and CSP operating in metropolitan Perth, Western Australia. Founded and operating since 2016, it is differentiated by its fixed wireless access offerings across 5GHz, 28GHz and 60GHz platforms.

Across its network, Pentanet offers residential and business subscribers with connectivity that is independent from incumbent access networks or other fixed-line services, providing an important alternative or improved means of internet access for many thousands of Western Australian homes and businesses.

Introduction and overall position

Pentanet welcomes the opportunity to comment on the ACMA's discussion paper on Automatic Frequency Coordination (AFC) assisted spectrum sharing in the 6 GHz band.

Pentanet understands that implementation of AFC in the US and Canada has already been successful in realising increased utility of this new spectrum while protecting incumbent link-holders.

Pentanet supports an AFC based-approach because in its view this affords maximum utility for the spectrum, allowing the creation and operation of FWA networks that exist to meet a demand for increasingly faster subscriber speeds that cannot be serviced by existing fixed-line access networks, or where alternative connectivity is needed. Pentanet also notes an increasing behavioural shift towards LEO-satellite based networks (with international operation and ownership) to meet contemporary demand.

In Pentanet's view, and AFC-based approach to 6GHz is an important step in supporting a market of existing and new operators and encouraging competition and innovation in an otherwise increasingly homogenised or non-domestically operated landscape.

As a measure of its interest and commitment, Pentanet is also currently undertaking to participate in the industry-led 6GHz AFC trial, intended to demonstrate effective and safe operation and coordination of 6GHz equipment under AFC governance.

Comments On Issues

1. Pentanet is broadly supportive of exploring the introduction of an AFC framework in Australia, subject to staged implementation, robust protection of incumbent services, and operational practicality under Australian conditions. Pentanet considers an AFC implementation to be a potentially effective mechanism to enable innovation, encourage competition and support alternative access technologies, provided implementation settings are proportionate, scalable, and informed by real-world deployment conditions.
2. The availability of 660MHz of new spectrum will create a meaningful capability uplift for existing service providers by allowing their services to compete with consumer expectations and demands created by incumbent fixed line access networks. Additionally, new spectrum availability is likely to encourage new operators to emerge and so create meaningful competition and innovation.

3. Pentanet is not aware of any practical alternatives to AFC, acknowledges the overt need to manage risk to incumbent users and suggests an AFC may be an appropriate and balanced mechanism to mitigate risk to incumbent users based on successful implementation in other regions.
4. Pentanet understands existing implementations (such as in the US and Canada) to be robust and well received across industry, and therefore a good candidate for consideration in domestic deployment. Advantages to adopting an existing AFC system could include increased availability of hardware/ease of implementation support by vendors, further enabling increased adoption and thus innovation, competition and decreased dependency on foreign-operated LEO solutions.
5. Pentanet supports the proposed configuration of 5925MHz - 6585MHz and supports the general industry view that an AFC scheme could later be extended to an additional 6585-7100MHz under AFC (in additional geographic restriction).
6. Pentanet's view is that no further specific geographic or spectrum segregation is warranted in the proposed configuration and that a suitably implemented and integrated AFC (supported by geolocation data from transmitters) should support all geographies, balancing a need to reduce overall complexity while still protecting incumbent spectrum users.
7. Pentanet has no specific comments or views, though supports the adoption of an existing AFC scheme that covers all functional requirements (according to definitions set forth by the ACMA) and allows the ACMA to continue to maintain its license records (RRL) database, deferring the cost and complexity of AFC implementation in favour of a proven system, supporting faster implementation, standardisation and simplified vendor support.
8. Pentanet's view is that the ACMA's RRL should remain as the established source of truth for any AFC system relying on data on or about existing link licenses.
9. Pentanet supports the general industry view that a tiered access model to spectrum as per the following would allow safe and efficient use of all resources:

Highest priority tier – incumbent and licensed links per the RRL.

Medium priority tier – outdoor wireless networks operating under AFC.

Low priority tier – LP/VLP devices such as indoor WiFi devices which may operate outside of the AFC construct.

10. Pentanet suggests that devices coordinated under AFC should not need to be individually licensed and so should not be included in the RRL, as the intent of an AFC mechanism is to ensure these devices operate without risk of interference and thus outside of the need for the RRL.

Pentanet also notes that under the current experimental AFC trial conditions, existing license holders will be notified and provided with a means to contact AFC trial participant operators.

11. Pentanet supports the general industry view which is to suggest that ACMA follows an established specification and standard (including approval process for prospective AFC operators) such as in DSB-06, as implemented in Canada.
12. Pentanet understands that industry has already consulted with at least one AFC vendor to discuss the feasibility of and requirement for specific geo-fencing capabilities (exclusion zones), so as to define areas in which operation in all or part of 6GHz band may be defined outside of the RRL, and that the vendor/s are supportive of these additions. Further features should be well defined in other successful implementations.

13. Pentanet recognises the RRL database as the authoritative source of incumbent licensing data, noting that AFC systems may need to accommodate supplementary coordination mechanisms to maintain confidence in incumbent protection.
14. Pentanet supports authorisation of multiple AFC operators where feasible, noting that competition may be important to manage costs and avoid concentration risk in the Australian market, and that multiple AFC operators may encourage a diversity of vendor support, resulting in increased options for operators and therefore higher innovation and competition.
15. Pentanet offers no specific comments in relation to standards or mandatory specifications, but our general view is that these should follow existing and established conventions for AFC such as are already in effect in the US and Canada, which set out realistic parameters for revalidation, grace periods, GPS accuracy and so on.

Closing remarks

Pentanet commends the ACMA for its measured and consultative approach to exploring AFC-enabled spectrum sharing, and welcomes continued engagement as technical, licensing and operational details are refined.

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