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Spectrum Planning Section
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Re. HPE Networking's response to ACMA discussion paper - Automatic Frequency Coordination-assisted spectrum sharing in the 6 GHz band

Hewlett Packard Enterprise (HPE) Networking welcomes the opportunity to respond to the ACMA's discussion paper on the proposed introduction of an Automatic Frequency Coordination (AFC) framework for the 6 GHz band. HPE Networking appreciates ACMA's consultation on this important issue, which has the potential to enhance spectrum efficiency and RLAN network performance while ensuring appropriate protection of incumbent services.

HPE Networking is a global supplier of enterprise networking solutions, including wired network, Wi-Fi, private cellular and AI managed platforms, with deployments across enterprise campuses, industrial facilities, education, healthcare, government, utilities, and large public venues.

HPE Networking has a strong and longstanding business presence in Australia and works closely with customers across both the public and private sectors, including government agencies, critical infrastructure operators, education and healthcare institutions, and large enterprises. We therefore has a direct interest in the development of spectrum policy and an AFC framework that is practical to implement, internationally aligned, and valuable to Australia's consumers and businesses.

Our responses to the questions set out in the discussion paper are provided below.

1. Do you support the adoption of an AFC framework in Australia to enable outdoor standard-power operation in the 6 GHz band? What are the key benefits and concerns? In particular, who would the main beneficiaries be, and what would be the implications for consumers in the telecommunications market?

Yes. HPE strongly supports the adoption of an AFC framework to enable standard-power RLAN operation in the 6 GHz band in Australia.

From an enterprise networking perspective, Low Power Indoor (LPI) and Very Low Power (VLP) operation are insufficient for many enterprise use cases that require predictable coverage across mixed indoor and outdoor areas. AFC is essential to enabling reliable and seamless 6 GHz Wi-Fi deployments in outdoor, campus-scale, and industrial environments, while maintaining robust protection for incumbent fixed and satellite services.

The main beneficiaries of an AFC framework would be consumers, businesses, and service providers. Cost-efficient Wi-Fi and WLAN equipment and the use of LIPD class licence spectrum would reduce deployment costs, improve broadband performance, and increase competition in the telecommunications market. This would deliver better services and more choice for Australian consumers and businesses while supporting innovation and economic growth.

The key concerns relate to implementation rather than principle, including database accuracy, clear accountability for AFC operators, and regulatory clarity. These concerns can be effectively addressed through alignment with established international AFC frameworks.

2. How might AFC change the way WISPs and other communications service providers operate, particularly in terms of supporting greater spectrum efficiency or service innovation?

The introduction of an AFC framework would materially change how WISPs and other communications service providers design and operate networks in the 6 GHz band by improving spectrum efficiency and enabling new deployment models.

For WISPs, AFC would enable the use of standard-power 6 GHz RLAN devices to deliver higher-capacity fixed wireless services under the LIPD class licence framework. This is particularly important in regional and remote areas where fibre is unavailable or uneconomic, allowing improved capacity, reliability, and service quality using cost-effective, standards-based equipment.

For enterprise IT and managed service providers, AFC would enable predictable, high-performance Wi-Fi across both indoor and outdoor environments using standard-power 6 GHz access points. Enterprise Wi-Fi deployments are typically fixed-location, professionally installed, and centrally managed. AFC allows these deployments to extend seamlessly across indoor and outdoor environments, reuse existing infrastructure grids already deployed for 5 GHz networks, and provide additional capacity or segmented network layers to support high-density or specialised enterprise traffic.

AFC also supports greater convergence between Wi-Fi and cellular networks. Service providers and mobile operators can leverage AFC-enabled 6 GHz Wi-Fi to complement cellular coverage, offload traffic, and accelerate deployment at lower cost. Technologies such as OpenRoaming, based on Wi-Fi Passpoint, already demonstrate this model in Australia, with AFC enabling wider-area operation and more efficient spectrum use.

3. Are there any alternatives to AFC that could support dynamic and efficient frequency assignments in the 6 GHz band?

For standard-power outdoor operation, AFC is the most effective and practical mechanism available to support dynamic and efficient frequency assignment in the 6 GHz band. AFC enables coordinated channel and power assignments based on device location and up-to-date incumbent information, ensuring efficient spectrum use while providing appropriate protection for incumbent services.

Alternative approaches, such as static exclusion zones or purely relying on contention based protocol like LPI and VLP categories would reduce limit the potential of the 6 GHz band for enterprise and managed network use cases. AFC provides a balanced and proven solution that complements existing Wi-Fi coexistence mechanisms and has been adopted in other jurisdictions.

The FCC has recently introduced Geofenced Variable Power (GVP) devices, which operate under location-specific power limits¹. These categories serve distinct use cases and are designed to complement each other within the 6 GHz RLAN ecosystem. ACMA may wish to observe international experience with these device classes while focusing on AFC as the primary mechanism to enable standard-power operation in Australia.

¹ FCC FACT SHEET Unlicensed use of the 6 GHz Band, <https://docs.fcc.gov/public/attachments/DOC-417577A1.pdf>

4. Would established models in other jurisdictions such as the US and Canada, or aspects of these models, be appropriate for the Australian radiocommunications environment?

Yes. The AFC frameworks implemented in the US and Canada provide a strong and appropriate foundation for Australia. Enterprise networking vendors operate in global markets and design hardware platforms for deployment across multiple jurisdictions. Alignment with FCC and ISSED AFC models supports economies of scale, reduces compliance complexity, and accelerates availability of compliant enterprise equipment in Australia.

It is also worth noting that UK regulator, Ofcom, has recently proposed enabling AFC controlled licence exempt use across the full 5925 – 7125 MHz band². Ofcom's incumbent environment and 6 GHz spectrum planning roadmap may provide useful insights for ACMA, given similarities in spectrum use and regulatory objectives.

5. How much spectrum should be made available under AFC, and what bandwidths should be allocated to support individual AFC service offerings? Should part or all of the 6 GHz spectrum available for RLAN use be made available for AFC-enabled access by standard power devices, or is there a case for arrangements supporting a range of power levels above VLP/LPI and below/including standard power?

Enterprise Wi-Fi performance depends on access to wide, contiguous channels to support modern standards such as Wi-Fi 7. Artificial segmentation of the band would significantly reduce its utility for high-capacity enterprise deployments. We recommend ACMA making all 6 GHz spectrum (5925 – 7125 MHz) available for AFC-enabled operation with a maximum of EIRP 36 dBm, this would enable SP RLAN to use wider channel bandwidths such as 80 MHz, 160 MHz, and up to 320 MHz, supporting high-capacity and high-density deployments.

While ACMA has set aside portions of the upper 6 GHz band for future WA-WBB use, enabling AFC-controlled RLAN across the entire band can maximize near-term spectrum utility while retaining future flexibility. AFC is not only a protection mechanism for incumbents, but also a dynamic access control framework capable of adapting to future spectrum policy decisions. If ACMA later plans to deploy WA-WBB in specific areas or frequency ranges, AFC operators can be instructed to vacate those portions. Similar approaches have been proposed by Ofcom, where AFC systems are planned to allow SP RLAN access across the full 6 GHz band while dynamically restricting or withdrawing access from portions that may be repurposed for cellular services at a later stage.

We do not see a need for additional intermediate power tiers beyond existing VLP, LPI, and standard-power classifications, provided AFC coordination is used for standard-power operation and contention-based coexistence remains in place.

6. What degrees of geographic and spectrum segmentation should be considered when planning for individual AFC system deployments? For example, would planning for localised, self-contained areas or multiple sub-bands foster competition in the market for the provision of AFC services, or would that come at too much of a cost to spectrum efficiency (through the need for guard bands/spaces)?

HPE supports a nationally consistent AFC framework with minimal geographic or spectrum segmentation. Fragmentation would increase complexity for enterprises operating multi-site networks, complicate device authorisation, and reduce spectrum efficiency through guard bands or unused segments.

Competition among AFC service providers can be supported through multiple accredited operators accessing common incumbent datasets under uniform rules, rather than through spectrum or geographic partitioning.

7. What are the respective roles and responsibilities for industry and government in realising an AFC regime? Should AFC be operated by industry under government-set rules or should government play a more direct role in providing AFC services?

HPE supports an industry-operated AFC model under ACMA-defined rules and oversight.

ACMA's role should include defining protection criteria, accrediting AFC operators, setting compliance requirements, and enforcing accountability. Industry is best placed to design and operate scalable AFC systems that integrate with enterprise networking architectures, including cloud-managed and on-premises control models.

² Ofcom consultation: Enabling automated frequency coordination (AFC) in the 6 GHz band

<https://www.ofcom.org.uk/spectrum/innovative-use-of-spectrum/enabling-automated-frequency-coordination-afc-in-the-6-ghz-band>

Clear interference investigation and resolution processes are essential to provide confidence for incumbent services and enterprise operators.

8. What role should databases such as the ACMA's RRL or other coordination mechanisms, such as those administered by the ACMA but used by accredited assigners, play in the process?

Databases such as ACMA's RRL should serve as the authoritative source of incumbent data in an AFC regime. AFC systems should rely on the RRL to identify and protect FS, FSS and RAS incumbents in the 6 GHz band.

Where appropriate, ACMA may provide supplementary datasets to improve completeness or simplify implementation. Standardised data formats and interfaces would support accurate and efficient AFC system operation. A daily refresh of incumbent data is considered sufficient, balancing the need for accuracy with practical operational considerations.

ACMA should also maintain a role in data governance, including issuing notices to licensees and their accredited assigners where inaccurate, outdated, or missing data is identified. Clear obligations on licensees to maintain accurate information would improve overall data quality and reduce coordination risks.

9. What is the need for, and potential structure of, a tiered access model for incorporating standard power RLAN devices in the 6 GHz band?

HPE Networking does not support a tiered access hierarchy among license-exempt RLAN devices.

Standard-power, LPI, and VLP devices should remain within a single RLAN class licence framework. Coexistence among RLAN devices (regardless of power class) is already effectively managed through established contention-based protocols, such as CSMA/CA or the Listen-Before-Talk mechanisms inherent in IEEE 802.11 standards. These mechanisms ensure fair and efficient spectrum sharing in shared environments.

Introducing a tiered structure among 6 GHz RLAN devices and places standard-power devices at a higher priority level than LPI and VLP—without also mandating a robust contention-based protocol for SP devices—would create significant risks. These include:

- Potential unfair dominance by standard-power devices over lower-power RLAN devices in shared spectrum, which can lead to increased interference and degraded performance for LPI/VLP deployments,
- Undermining the principles of equal access that have driven the success of unlicensed spectrum use globally.

10. With respect to licensing, should individual AFC-coordinated devices be registered on the RRL or covered by broader system-wide licensing arrangements, or are there other authorisation models that we should consider?

Requiring individual AFC-coordinated devices be registered on the RRL would introduce unnecessary complexity and cost, contradicting the fundamental principles of class licence spectrum access, and there is no compelling benefit to imposing individual device-level registration on the RRL for AFC-coordinated standard-power RLAN networks.

Modern AFC-managed systems already incorporate robust, centralised management capabilities. These include registration of each AP's unique identifiers (e.g., device ID, serial number), compliance certification details, and precise 3D geolocation information as a prerequisite for obtaining operational parameters such as allowable channels and power levels from the AFC system.

This centralised approach positions accredited AFC operators far better than the ACMA to maintain accurate, up-to-date device-level operational records in real time. If required for interference investigation, enforcement, or compliance monitoring, the ACMA could readily obtain this information directly from the AFC system operators under appropriate regulatory obligations. We believe this approach deliver robust incumbent protection, efficient spectrum sharing and deployment scalability in Australia, consistent with global best practices.

11. What processes and safeguards would need to be established to accredit, audit and ensure ongoing compliance of industry-led AFC operators? What type of rules should be imposed on prospective AFC operators and how should those rules be codified?

HPE recommends that ACMA adopt an accreditation and compliance framework that ensuring prospective AFC operators demonstrate their technical capability to meet ACMA's protection criteria, system performance requirements, and operational rules before approval.

Accredited AFC operators should be required to provide ACMA with audit access to their systems, allowing verification of database integrity, calculation methods, update processes, and overall system performance.

ACMA can leverage industry-developed compliance frameworks, such as the Wi-Fi Alliance (WFA) System Under Test (SUT) and Device Under Test (DUT) specifications. Using these established testing methods reduces duplication, ensures international alignment, and gives confidence that AFC systems and devices operate as intended.

Finally, these rules should be clearly codified in licence conditions, technical standards, or regulatory instruments to ensure transparency, consistency, and enforceability.

12. What technical or administrative features will be critical to successful AFC implementation?

High-accuracy geolocation of standard-power RLAN devices is essential to enable robust protection and efficient spectrum use, together with accurate RF parameters and geolocation information for incumbent receivers. Location information, including defined uncertainty sufficient to meet a 95% confidence level, underpins correct interference calculations and effective protection of FS and FSS incumbents.

ACMA should define standardised propagation models and incumbent protection criteria for AFC operation. For simplicity and consistency, protection should be based on a maximum interference-to-noise (I/N) requirement at FS receivers calculated on a per-device basis. Coordination between different AFC systems operating in the same area should not be required, as this is unnecessary for unlicensed technologies and would introduce undue complexity.

For indoor standard-power operation, AFC systems should be permitted to apply an appropriate Building Entry Loss (BEL) credit where indoor installation can be reliably demonstrated. Recognising BEL in AFC calculations can improve spectrum efficiency while maintaining incumbent protection, particularly for enterprise deployments in dense environments where a significant proportion of traffic is generated indoors. Any BEL credit should be based on international standardised assumptions and experimental data.

AFC systems should incorporate secure device authentication and registration to ensure that only authorised devices access AFC services and that device identity, location, and operating parameters are reliably recorded.

AFC systems should support logging and auditability, including retention of records for device registration, frequency assignments, power levels, and calculation outcomes.

13. How should data integrity, ownership, and update mechanisms be managed?

ACMA should designate the RRL as the authoritative source of incumbent licence data for AFC coordination. AFC operators should rely on the RRL to obtain accurate and up-to-date incumbents information.

To support effective AFC operation, ACMA may want to enhance RRL access and data governance arrangements, including standardised interfaces like API based access, security, loading performance, and the availability of a testing or sandbox environment that mirrors production data. These measures would support reliable system integration while avoiding disruption to live coordination.

A daily refresh of incumbent data is considered acceptable. To avoid service disruption before AFC systems take account of newly granted licences, ACMA could implement a mechanism that allows FS and fixed satellite service FSS licensees to commence operation after a defined period, such as 48 hours, following licence grant.

In addition, ACMA should maintain a device certification identifier for standard-power RLAN devices, enabling AFC systems to verify that only approved device types are authorised to operate under AFC control and supporting effective compliance and interference management.

14. What is the expected market for AFC services in Australia?

Regional and rural WISPs are expected to be an important source of demand, as AFC-enabled standard-power 6 GHz RLAN operation would support higher-capacity fixed wireless services where fibre deployment is unavailable or uneconomic.

AFC is also a key enabler of Wi-Fi and cellular convergence. ISPs, including NBN and MNOs and public entities are likely to use AFC-enabled standard-power 6 GHz Wi-Fi to complement cellular networks through carrier-grade Wi-Fi solutions. Technologies such as Wi-Fi Passpoint enable seamless authentication and roaming between Wi-Fi and cellular networks, allowing Wi-Fi to function as an extension of the mobile network while reducing deployment cost and improving coverage and capacity. AFC is critical to this model by enabling the range, capacity, and reliability required for carrier use cases while protecting incumbent services.

Enterprises operating large campuses or industrial outdoor environments—such as mining sites, ports, utilities, logistics hubs, manufacturing facilities, and major venues—represent another significant market segment, as these deployments require reliable outdoor connectivity integrated with indoor networks. Municipalities and local governments may also adopt AFC-enabled standard-power Wi-Fi to support smart city applications and public infrastructure.

The AFC services market is expected to include specialist AFC providers, networking vendors offering integrated solutions, and systems integrators and professional services firms supporting deployment, auditing, and ongoing compliance.

15. What standards or mandatory specifications should be prescribed?

When defining regulatory requirement and specification, ACMA should focus on system and device performance such as location accuracy, firmware integrity, and compliance behaviour rather than mandating specific technologies such as GPS.

We recommend ACMA to leverage existing international standards and certification programs for benefiting Australia's consumers and enterprise with the economy of scale and fast adoption. Wi-Fi Alliance has developed compliance problem such as AFC DUT and SUT programs and WINNF (Wireless Innovation Forum) has technical specifications for AFC system. With regards to device certification, acceptance of FCC or ISSED certified devices where requirements are equivalent would support efficient deployment of enterprise hardware in Australia.

ACMA should also allow the use of composite AP type and dual-mode client devices³, provided that each operating mode complies with the relevant power limits and AFC requirements. Supporting such devices is important for market enablement, as it allows a single device to operate across LPI, VLP, and standard-power modes, reduces device complexity and cost, and enables seamless user experience across indoor and outdoor environments.

Conclusion

HPE Networking strongly supports the introduction of an AFC framework in Australia to enable standard-power RLAN operation across the 6 GHz band (5925–7125 MHz).

AFC is essential for high performance 6 GHz RLAN/Wi-Fi deployments, delivering predictable, high-capacity connectivity in both indoor and outdoor environments using globally harmonised equipment. By focusing AFC on protecting incumbent services while preserving a unified, non-hierarchical class licence model for all RLAN power classes and leveraging industry-operated systems under ACMA oversight, Australia can maximise spectrum efficiency, foster Wi-Fi innovation, and support advanced wireless applications.

This balanced framework will drive economic growth, enhance broadband competition, and meet the evolving connectivity needs of Australian businesses, consumers, and critical sectors for years to come.

HPE Networking thanks the ACMA for this consultation and looks forward to contributing to the successful implementation of AFC enabled spectrum access in Australia.

³ A composite AP type and dual-mode client devices mean APs or client devices support more than one 6 GHz operating class (e.g. LPI, VLP, and/or AFC-coordinated Standard Power)