

Re: Automatic Frequency Coordination-assisted spectrum sharing in the 6 GHz band

05/01/2025

From: Steele Technology PTY LTD – Carrier License 540

We appreciate the ACMA's discussion paper and opportunity to provide input on the potential introduction of Automatic Frequency Coordination (AFC) to enable standard-power outdoor access in the 6 GHz band.

1. Why Steele Technology supports AFC-enabled 6 GHz access

a) Severe and worsening congestion in the 5 GHz band

The 5 GHz band, which is currently the primary unlicensed spectrum used by WISPs, has become **increasingly congested and unreliable**, particularly due to factors outside the control of professional operators.

In recent years, there has been a rapid increase in:

- **High-power consumer Wi-Fi routers** deployed in residential environments
- **Outdoor repeaters, mesh nodes, and point-to-point devices** operating continuously on 5 GHz
- Poorly configured or non-compliant equipment operating at excessive EIRP levels
- Satellite-related equipment and fixed wireless customer devices transmitting in shared spectrum

Many modern home routers now ship with aggressive transmit power, wide channels, and automatic channel selection that does not account for outdoor or long-range links. These devices are increasingly being installed outdoors or used with external antennas, further exacerbating interference.

For WISP operators, this has resulted in:

- Persistent co-channel and adjacent-channel interference
- Reduced modulation rates and throughput
- Increased packet loss and latency
- Unstable links that cannot be mitigated through normal frequency planning

Even in regional and semi-rural areas, the 5 GHz band is no longer a clean or predictable environment for carrier-grade wireless broadband delivery.

b) Why a separate 6 GHz band is essential for WISPs

A key issue with the current environment is that **WISPs and consumer devices are forced to coexist in the same congested spectrum**, despite having very different operational requirements.

Access to the 6 GHz band under an AFC framework would provide:



- **A cleaner, less congested spectrum environment** specifically suitable for professionally managed outdoor networks
- The ability to deploy **standard-power point-to-multipoint infrastructure** without competing directly with uncontrolled residential Wi-Fi equipment
- Greater certainty in network planning, interference management, and long-term scalability

Separating WISP infrastructure into a coordinated 6 GHz environment would significantly reduce the impact of uncontrolled consumer devices on broadband service delivery, while still protecting incumbent users through AFC.

c) Benefits of 6 GHz with AFC for Steele Technology and our customers

With AFC-enabled access to the 6 GHz band, Steele Technology would be able to:

1. **Deliver more reliable broadband services**
Cleaner spectrum and coordinated frequency assignment would directly improve link stability and uptime.
2. **Increase capacity without increasing interference**
Wider channels and modern modulation schemes can be used efficiently without adding to congestion in the already-overloaded 5 GHz band.
3. **Improve customer experience**
End users benefit from higher speeds, lower latency, and fewer service disruptions, particularly in areas with limited fixed-line alternatives.
4. **Support future growth and technology evolution**
The 6 GHz band is essential for next-generation wireless technologies and ensures WISPs can continue to innovate and invest without being constrained by legacy congestion.

2. Why AFC makes this approach safe and practical

Automatic Frequency Coordination provides a proven mechanism to:

- Protect incumbent fixed links and critical services
- Enforce geographic and power-based controls
- Ensure spectrum use is transparent, coordinated, and compliant

International deployments demonstrate that AFC can successfully balance innovation, access, and protection, enabling standard-power outdoor use without harmful interference.



3. Summary

The 5 GHz band is no longer fit as the sole unlicensed spectrum for professional WISP operations due to uncontrolled growth in high-power consumer devices and outdoor repeaters.

Allowing AFC-enabled access to the 6 GHz band would:

- ✓ Reduce interference from increasingly powerful home routers
- ✓ Provide a cleaner, coordinated spectrum environment for WISPs
- ✓ Improve broadband reliability and performance for customers
- ✓ Support regional connectivity and competition
- ✓ Future-proof Australia's fixed wireless ecosystem

Steele Technology strongly supports the introduction of an AFC framework that enables **standard-power 6 GHz use for WISP operators**, while maintaining robust protections for incumbent services.

Regards,
Nathan Steele
Director

