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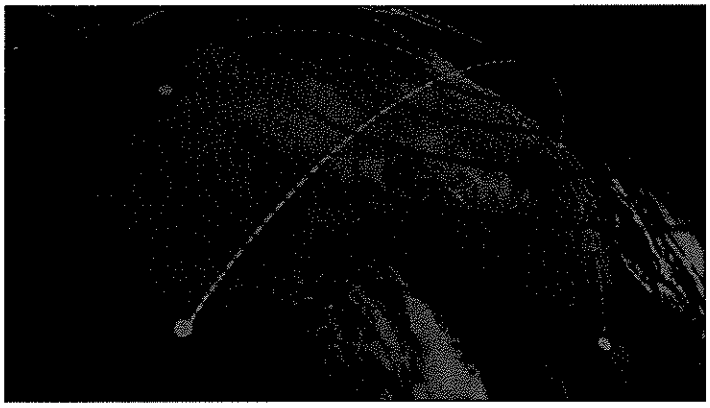
New spectrum for emergency services



ACMA media release 40/2013 – 6 June

As part of implementing its strategic approach (http://www.acma.gov.au/theACMA/the-acma-to-deliver-a-multi-layered-spectrum-solution) to the future needs of Australia's public safety agencies (PSA), the Australian Communications and Media Authority has developed a class licence (http://www.comlaw.gov.au/Details/F2013L00827) that provides nationwide access to 50 MHz of spectrum in the 4.9 GHz band. This spectrum is capable of extremely high capacity, short range, instantly deployable data and video communications.

'PSA rely heavily on a broad range of radiocommunications services to carry out their responsibilities,' said ACMA Chairman, Chris Chapman. 'The 4.9 GHz band is part of a multi-layered approach that the ACMA has undertaken to meet the wide-ranging spectrum needs of PSA. The spectrum being provided to PSA comes from a number of frequency bands and offers a level of flexibility and interoperability that is frankly unprecedented. This will provide the basis for a state of the art, public safety communications ecosystem intended to serve the voice, data and video communications needs of public safety agencies well into the future.

'This class licence will support our PSA in deploying a wide range of applications,' Mr Chapman added. 'The expected use of the band will be primarily to support mobile and point-to-multipoint applications, especially in situations where there is a localised spike in data demand such as around an incident site. The flexibility of the class licence will also provide for the deployment of temporary fixed links, such as video surveillance backhaul and data linking from airborne platforms.'

The 4.9 GHz band is also identified internationally for public protection and disaster relief applications. This means that there is an established, international market for standardised, public safety-grade equipment for this band (including WiFi, WiMAX and video transfer systems).

Being subject to a class licence regime means that none of these applications will need individual licences. Class licensing is appropriate for this band, given that the short propagation distances at these frequencies provide for a high degree of frequency reuse with a low risk of causing mutual interference. This allows for ad-hoc, unplanned deployments, which is important to the work of PSA, and adds a significant degree of flexibility during emergency responses and disaster recovery activities.

For more information or to arrange an interview, please contact: Blake Murdoch, on (02) 9334 7817, 0434 567 391 or media@acma.gov.au (mailto:media@acma.gov.au).

Backgrounder

Radio networks are a critical component of public safety operations. The requirements of PSA are generally different

from other types of networks, including the day to day requirements of commercial mobile networks. These unique requirements directly affect how networks are designed and dimensioned. Different scenarios require different levels of coverage, capacity and availability. Demand for bandwidth by public safety operators can vary greatly by time, location and between agencies.

PSA have historically relied on narrowband (particularly voice) communications to support their operations. This has been primarily delivered through dedicated land mobile systems. In 2008, the ACMA commenced an extensive examination of PSA needs in this space through a wide-ranging review of the 400 MHz band. This resulted in an expansion of public safety spectrum resources and an unprecedented framework for national interoperability. Voice communication still remains the core communications capability for PSA.

At the same time, agencies have understandably identified a growing need for data capabilities to take advantage of digital technologies that have the capacity to significantly enhance a wide range of operational functions. High speed, mobile data capabilities that can be relied upon in adverse situations and are interoperable between different agencies and jurisdictions are becoming increasingly necessary in public safety operations. For several years, the ACMA has been exploring how best to meet these needs.

With this in mind, the ACMA has indentified 50 MHz of spectrum from the 4940–4990 MHz frequency range (the 4.9 GHz band), which will provide very high speed, short range on-demand capacity to areas of high activity to support a wide range of uses. This band is internationally harmonised for public protection and disaster relief (PPDR) communications by the International Telecommunication Union (ITU).Harmonisation for the 4.9 GHz band will ensure international interoperability (when needed) and equipment economies of scale.

In addition, the ACMA has worked closely with the Public Safety Mobile Broadband Steering Committee (PSMBSC), which was established in May 2011 to identify options for how spectrum from the 800 MHz band could be used to implement a nationally-interoperable mobile broadband capability for PSA.

This importance of realising a broadband capability for PSA has been reflected in the ACMA's close engagement with the work of the PSMBSC. A significant body of work has been undertaken by the PSMBSC in gathering user requirements and determining the most efficient and cost-effective ways to deliver the capability. The ACMA took an evidence-informed approach, undertaking a rigorous evaluation of the various PSA and manufacturer submissions and other data collected throughout the PSMBSC process, and dimensioned it against the capabilities and constraints inherent in the current 4G Long Term Evolution (LTE) standard, to determine an appropriate amount of spectrum from the 800 MHz band. This should enable a scalable Public Safety Mobile Broadband (PSMB) capability that would meet PSA needs, with sufficient headroom to allow for future growth in data demand. The PSMB capability will be available over a wide-coverage area, which will likely be achieved through a combination of deploying infrastructure using 10 MHz in the 800 MHz band being provided by the ACMA, and with the obvious potential to significantly leverage this through the utilisation of commercial networks.

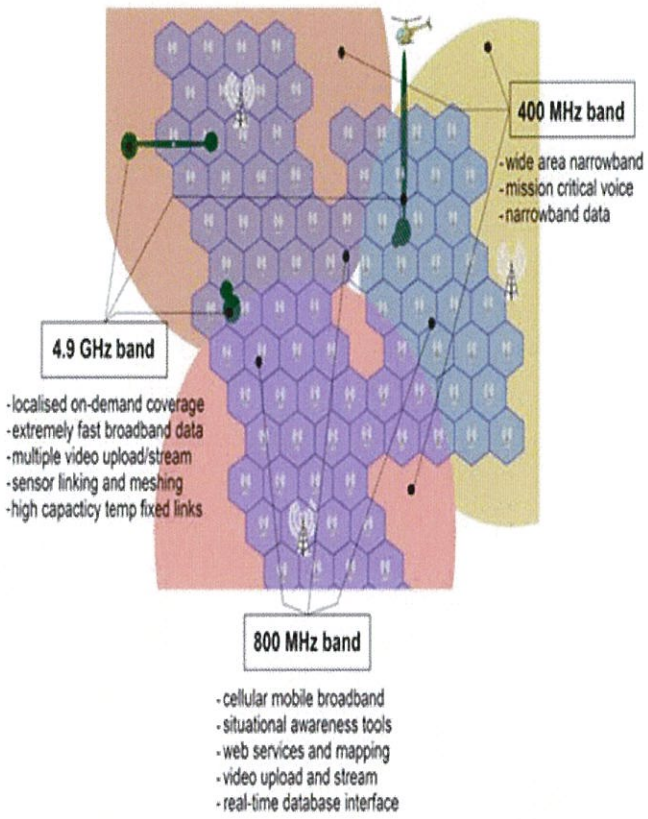
Figure 1 provides a conceptual overview of how providing spectrum from these three bands will combine to form a holistic strategy to meet PSA future voice, data and video communications needs. The development and deployment of multi-layered, integrated networks will deliver the necessary flexibility, interoperability and capacity to operators where and when needed. The result will be an unprecedented level of situational awareness and interoperability, and a substantial operational advantage for PSA to carry out their duties.

Figure 1 - Conceptual depiction of multi-band layering

There is no 'single band' solution for meeting all of the mobile communications requirements of PSA. Integrating a layered—or 'system of systems'—architecture provides a flexible way of meeting the current and future radiocommunications needs of PSA. The ACMA will continue to work with PSA on developing an appropriate licensing framework to support PSA requirements.

Consultation

The ACMA received six submissions in response to the consultation paper, Proposed class licence in the 4.9 GHz band for public safety agencies. The submissions received in response to the consultation paper indicated that stakeholders



were generally supportive of the proposals. More information about the consultation process can be found on the ACMA website (http://www.acma.gov.au/theACMA/Consultations/Consultations/Current/submissions-to-proposed-class-licence-in-4-9-ghz-band---public-safety-agencies).

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