

Cambium Networks

Response to Consultation paper: Draft spectrum reallocation recommendation for the 3.6 GHz band

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Cambium Networks appreciates the opportunity to provide comment on the proposed reallocation of the 125MHz (3575MHz -3700MHz) band for 5G.

Clearly the ACMA has decided to progress with the reallocation via spectrum auction of the said 125MHz spectrum. In 2008 this spectrum was allocated outside of metro areas for BWA (FIXED WIRELESS) via Apparatus Licenses. Applications this spectrum is being used for include, broadband/internet services for residential and enterprise customers in underserved areas of Australia, SMART City applications like the Intelligent Transport Systems (ITS) Applications in regional QLD and Industrial Internet of Things (IIoT) applications in regional and remote mines.

5G is yet to be standardized but is being defined by low latency and the use of Massive Multi User MIMO to achieve higher bandwidths. Also it should be WELL understood the 125MHz of 3.6GHz spectrum will not deliver the same high speed services contemplated by the 26, 28 GHz bands being considered for 5G. Many of the applications contemplated by 5G are already being delivered by Fixed Wireless in this band. Cambium Networks currently delivers FIXED WIRELESS solutions in the Class Licensed 5GHz band using Massive Multi-User MIMO allowing seven (7) 2x2 MIMO connections to occur simultaneously across a 20MHz and 40MHz channel achieving over 1Gbps aggregate capacity. Similar will be possible in the 3.3 to 3.9 GHz band in 2018.

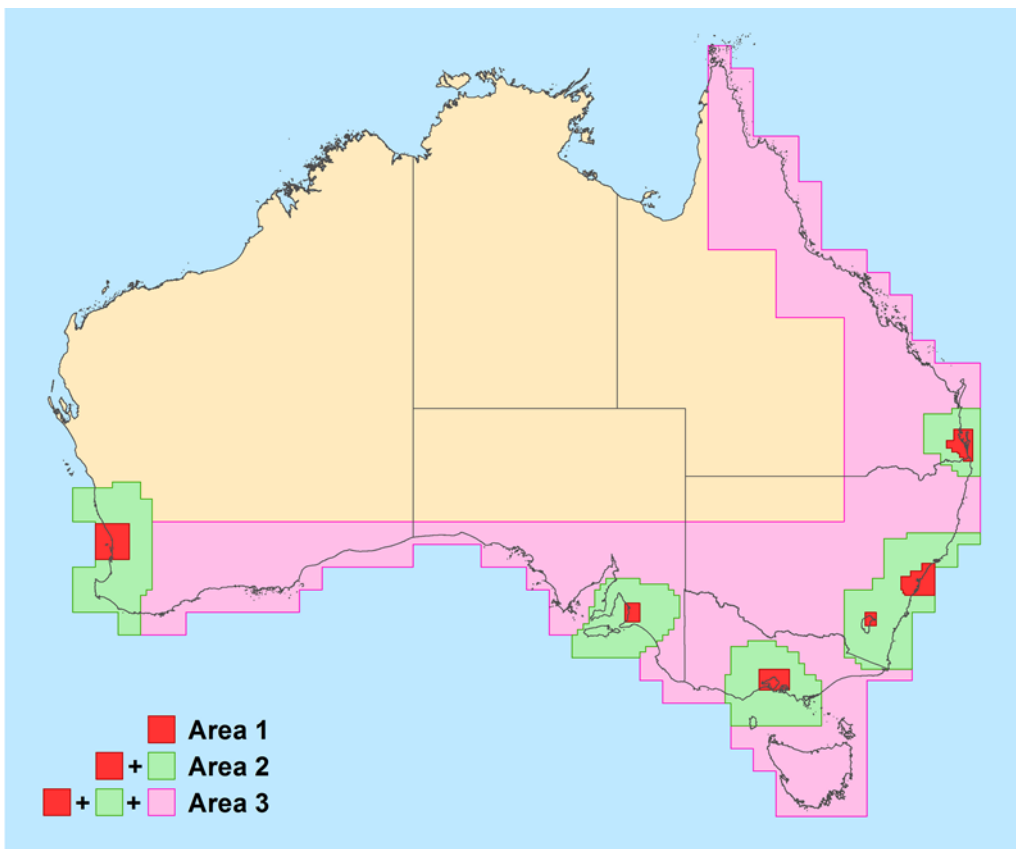
The allocation of the entire 125MHz band across the proposed geographic area is NOT well conceived and demonstrated a complete lack of understanding of the value of the use of licensed spectrum for FIXED WIRELESS applications. The Minister would be ill advised to progress with approval in the proposed format. The reallocation plan is in complete contradiction to the vision and goals for spectrum reform as articulated by the Minister at the recent Radcomms Conference and also by the Secretary of the Department at Comms Connect last week.

To blindly plow on just to “get this piece of work done” is a mistake.

We fully accept, recognise and support the need to provide spectrum in the 3GHz band for 5G. We also recognise the importance in terms of global market trends and spectrum harmonisation. In this light we note that the global plan identifies the 3.4GHz -3.8GHz band for 5G. Under the current plan the ACMA has only targeted the 125MHz, allocated to market back in 2008 for BWA (FIXED Wireless) Point to Multi-Point applications. It is widely used by WISPs, mining companies and transport authorities.

The 125 MHz of 3.65GHz spectrum under review was never made available in Metro Regions for BWA, so there is no impact or issue at all with making it available for spectrum action for 5G. We fully

understand the need by large service providers to have certainty in spectrum availability and to be able to plan investments ahead. The larger metro area (Red) and also the extended areas around those metro areas (green) shown in the map from the Options Paper are well suited for 5G use but not the areas in pink. The contemplated reallocation of a much larger area is ill advised. Whilst allowing incumbents use for 7 years this will also mean ZERO allocation or availability of the spectrum for innovative economic use. This spectrum will just sit in the asset bank of a large telco or two and be used for nothing. Making this spectrum available for BEST use under a Dynamic Spectrum Licensing Model (DSLIM) aligns well with the vision of the Minister and Department of Communications. To include the PINK area in the reallocation spectrum action process will have significant negative economic impact to those parts of rural and regional Australia falling in the PINK zone.

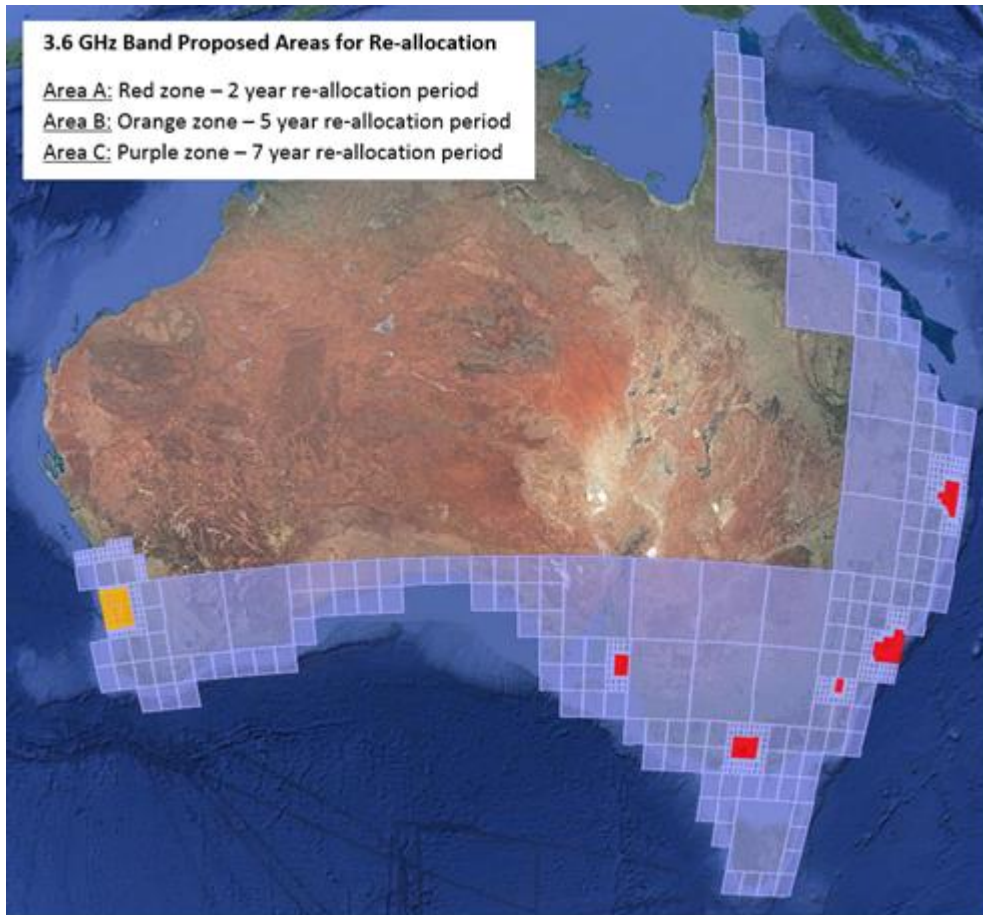


Whilst the ACMA has a defined MBB spectrum strategy, there also remains a major need for LICENCED spectrum for FIXED WIRELESS, to support the WISP industry, IIoT (Mining), SMART City (CCTV) and ITS application.

Licensed spectrum is important, useful and valuable for SMART Cities. It makes little sense on one hand for the Government to be granting money to support SMART City initiatives by the Department of the Prime Minister and Cabinet <https://cities.dpmc.gov.au/smart-cities-program> BUT have no support for the of allocation of Licensed Spectrum for FIXED Wireless by Department of Arts and Communications to support these initiatives. It demonstrates a complete lack of vision and understanding of the vital use and allocation of spectrum for best use and value of Australia.

With some more careful thought and planning the ACMA could accommodate the needs of both the Mobile 5G market and the others. The mobile players have no defined need for the spectrum in most regional areas. The solution is not well addressed by giving incumbents a 7 year plan to vacate as this means that no further licenses will be allocated during that time, as the spectrum will be owned under a spectrum license who's owner will have little or no economic model to do anything with that spectrum for a very long time to come. Carriers already own a significant amounts of 4G and 4.5G spectrum to offer very high bandwidth mobile services and so there is limited if any need for 5G at all in Regional Australia. As 5G applications emerge the spectrum should rather be available under a DSLM. Cambium Networks strongly supports the implementation of a Dynamic Spectrum Licensing Model (DSLM). This is probably the best option and aligns well with the ACMA/Government plans for spectrum reform.

The HUV model presented in the Options paper to justify the reallocation process is flawed and not valid for the greater regional and rural areas defined in the PINK zones in the diagram above or the larger blue squares below. Licensed spectrum is vital for much more than just the mobile industry. The economic wellbeing of Australia depends the effective allocation and use of spectrum.



Cambium Networks strongly urges that coverage area shown in purple needs to be carefully reconsidered as part of the reallocation process. The red, yellow and small squared areas are probably most valid for immediate reallocation for 5G. There also needs to be a much better appreciation of what 5G is and will deliver in the 125MHz of 3GHz spectrum before the greater purple area is auctioned off.

Finally as mentioned in the FYSO there exists a band of 100MHz in the 3.3 to 3.4GHz band that could be placed under a DSLM for Fixed Wireless and Mobile Services. This was defined at WRC15 for IMT (mobile and fixed wireless services). This option should be explored and prioritised.

We welcome feedback to our comments and hope common sense prevails.