

Cambium Networks

Planning for wireless broadband use of urban areas in the 3400-3475 MHz band

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1. EXECUTIVE SUMMARY

Cambium Networks appreciates the opportunity to respond to the options paper on the planning for wireless broadband use of urban areas in the 3400-3475 MHz band.

Cambium Networks, is a leading vendor of Fixed Wireless products, that supplies Point to Multipoint and Point to Point products that support the 900MHz, 2.4GHz, 3.3 GHz to 3.9, 4.9 GHz to 5.9 GHz for Broadband Wireless Access (BWA), 6-38 GHz for PTP Fixed Microwave band, 60GHz and 80GHz mmWave, 220MHz, 450MHz and 900MHz narrowband IoT SCADA solutions and Cloud Managed Wi-Fi and Ethernet Switches. Current PMP products are all TDD based whilst our PTP products are available as TDD or FDD.

Our response to this Options Paper is based on our knowledge and experience gained over the past 8 years working with network operators and enterprise customers building networks and delivering services in adjacent bands. We have seen the significant and positive impact that those services have had. We have actively promoted the availability and use of the spectrum; and the use of Fixed Wireless network architectures to deliver broadband services to underserved areas and to provide reliable connectivity for mission critical applications. In this case the main need will be for mission critical IoT, ITS and Smart City and Smart Utility applications. Our response is hence based on our domain knowledge of the industry in Australia and on a global basis, and specifically Fixed Wireless technology and how it can be effectively used to connect the unconnected – people, places and things and in this case especially thing (IoT).

2. INTRODUCTION TO CAMBIUM NETWORKS

Cambium Networks empowers millions of people with wireless connectivity worldwide. Our wireless portfolio is used by commercial and government network operators as well as broadband service providers to connect people, places and things. With a single network architecture spanning fixed wireless and Wi-Fi, Cambium Networks enables operators to achieve maximum performance with minimal spectrum. End-to-end cloud management transforms networks into dynamic environments that evolve to meet changing needs with minimal physical human intervention. Cambium Networks empowers a growing ecosystem of partners who design and deliver gigabit wireless solutions that just work.

3. ISSUES FOR COMMENT

3.1.QUESTION 1

COMMENT IS SOUGHT ON THE DRAFT AMENDMENTS TO THE S.145(4) DETERMINATION CONTAINED AT APPENDIX B (SEPARATE ATTACHMENT IN KEY DOCUMENTS SECTION OF THIS CONSULTATION).

SHOULD ADDITIONAL MEASURES BE INCLUDED TO ALSO GRANDFATHER DEVICE REGISTRATIONS WHEN MINOR MODIFICATIONS ARE MADE?

IF SO,WHAT MINOR MODIFICATIONS SHOULD BE PERMITTED? FOR EXAMPLE, CHANGES THAT RESULTS IN THE SAME OR LOWER HORIZONTAL RADIATED POWER FOR THE PURPOSES OF DEVICE BOUNDARY CALCULATIONS? ALTERNATIVELY, CHANGES THAT RESULT IN THE SAME OR SMALLER DEVICE BOUNDARY AS ORIGINALLY CALCULATED WHEN REGISTERING A DEVICE?

Cambium has no comment on the additional amendments to s.145(4) Determination, nor to the grandfathering measures within.

3.2.QUESTION 2

COMMENT IS SOUGHT ON THE PROPOSED CHANGES TO RECEIVER SPURIOUS EMISSION LIMITS ON 3.4 GHZ SPECTRUM LICENCES DETAILED IN TABLES 4 AND 5 FOR NON-AAS AND AAS RECEIVERS RESPECTIVELY.

Cambium has no comment regarding receiver spurious emission limits in these spectrum licenses. We do, although, support the adoption of alignment with 3GPP technical specifications consistent with Cambium Networks.

3.3.QUESTION 3

COMMENT IS SOUGHT ON THE DRAFT AMENDMENTS TO RALI MS44 CONTAINED IN APPENDIX C (FOUND SEPARATELY IN KEY DOCUMENTS SECTION OF THIS CONSULTATION).

Cambium has no comment on the new inclusions of frequency bands to specified areas.

3.4.QUESTION 4

COMMENT IS SOUGHT ON THE OPTIONS DEVELOPED FOR USE OF SPECTRUM IN URBAN EXCISE AREAS.

Cambium Networks suggest an option that would best support either enterprise or private network uses cases covering local areas of the urban excise area. The use of licensed spectrum in the band which is currently not available at all would then provide opportunity for Smart City, ITS, IoT and Smart Utility application using Fixed Wireless vs Mobile Wireless. There is already a significant amount of mid-band spectrum allocated a spectrum licenses to support non standalone 5G services. It would seem that option three would be best but not as spectrum licenses, rather as apparatus or area wide licensing.

3.5.QUESTION 5

VIEWS ARE SOUGHT ON THE POSSIBLE INTERFERENCE MANAGEMENT APPROACHES FOR BOTH CO-CHANNEL MECHANISMS (INCLUDING DUCTING) AND ADJACENT CHANNEL MECHANISMS (INCLUDING ADJACENT BAND COEXISTENCE) CONTAINED AT APPENDIX E.

Cambium suggests that equipment is all TDD frame based to minimise interference and maximise efficient use of spectrum. TDD synchronization/timing and a common flexible/configurable frame structure requirement needs to be adopted.

Further, it is important that unwanted emission limits be developed and/or guard bands. Preferable that reasonable emission limits are used so that guard bands can be avoided to maximise available spectrum. Whatever emission limits are adopted, should be reasonable, not overly stringent and not add unwanted burden in terms of filtering (for example). Equally important is to ensure that these emissions limits are not too relaxed where they contribute unwanted interference.

3.6.QUESTION 6

COMMENT IS SOUGHT ON THE DESIRABLE PLANNING OUTCOMES FOR USE OF SPECTRUM IN URBAN EXCISE AREAS.

Cambium Networks would like to see this spectrum made available to support smart city, IoT applications for a broad range of customers including traffic authorities, water utilities and local government authorities. There is currently no licensed spectrum in urban areas to support such applications.

3.7.QUESTION 7

COMMENT IS SOUGHT ON THE ACMA'S PRELIMINARY PREFERRED OPTION. ARE OTHER OPTIONS PREFERRED, AND IF SO, WHY?

Cambium Networks suggests an option that will support private fixed wireless networks with an area wide or apparatus license to support new uses cases that will support IoT applications and some broadband wireless connectivity for Campus area networks. There is currently very little or no option for licensed spectrum for fixed wireless to support this type of application.