Spectrum for broadband in the millimetre wave bands

Questions for consultation

September 2017

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Background

The ACMA’s [*Five-year spectrum outlook 2016–20*](https://www.acma.gov.au/Industry/Spectrum/Spectrum-projects/Mobile-broadband/five-year-spectrum-outlook-2016-20)(FYSO), released in October 2016, sought feedback on a number of issues surrounding mobile broadband use of bands above 24.25 GHz—referred to as mmWave bands.

The FYSO also included the ACMA’s work program for mobile broadband spectrum planning projects. The program outlined where each project is positioned within the overall process (the stages) and identified those frequency bands that are at the *monitoring* stage. The following mmWave bands were included in the *monitoring* stage:

* Bands being studied under WRC-19 agenda item 1.13:
* 24.25–27.5 GHz, 31.8–33.4 GHz, 37–40.5 GHz, 40.5–42.5 GHz, 42.5–43.5 GHz, 45.5–47 GHz, 47–47.2 GHz, 47.2–50.2 GHz, 50.4–52.6 GHz, 66–76 GHz and 81–86 GHz.
* Bands being considered internationally for 5G:
* bands announced for early implementation of 5G[[1]](#footnote-2):
* **US**: 27.5–28.35 GHz, 37–40 GHz and 64–71 GHz
* additional bands being considered internationally for 5G[[2]](#footnote-3)::
* **US**: 24.25–24.45 GHz, 24.75–25.25 GHz, 31.8–33.4 GHz, 42–42.5 GHz, 47.2–50.2 GHz, 50.4–52.6 GHz, 71–76 GHz, 81–86 GHz as well as bands above 95 GHz
* **Korea**: 24.25–29.5GHz, 31.8–33.4 GHz and 37–40.5 GHz
* **Japan**3: 26.5–29.5 GHz
* **European Union**3: 24.25–27.5 GHz and 40.5–43.5 GHz
* **China**[[3]](#footnote-4): 24.25–27.5 GHz and 37–43.5 GHz.

To further progress consideration of the mmWave bands, the ACMA hosted a spectrum tune-up on the issue, which included speakers from both the ACMA and industry. The tune-up provided an opportunity for stakeholders to provide further views and feedback on the use of various mmWave bands that are under consideration for possible use by broadband services. To complement the contributions received during the tune-up, the ACMA is providing this opportunity for formal submissions on the issues raised for discussion at the event.

# Proposed next steps

Given the increasing interest both domestically and internationally, coupled with limited incumbency issues, the ACMA has proposed to use the spectrum tune-up, along with this consultation process, to assist in streamlining the early consideration of the 24.25–27.5 GHz band (the 26 GHz mmWave band) and, if supported by submissions, potentially other mmWave bands.

Specifically, the ACMA is proposing to use feedback obtained from the FYSO during the tune-up, and this consultation process, as part of our initial investigation of the 26 GHz mmWave band, and if appropriate, other mmWave bands. This will inform a decision on whether to progress consideration of one or more mmWave bands to the *preliminary re-planning* phase of the ACMA’s [mobile broadband strategy](https://www.acma.gov.au/Industry/Spectrum/Spectrum-projects/Mobile-broadband/mobile-broadband-strategy-and-work-plan).

If a decision is made to progress one or more mmWave bands to this next phase, the ACMA will then work towards developing a consultation paper discussing possible options for the bands identified. For the 26 GHz mmWave band, unless there are significant reasons raised to the contrary, the ACMA will use the information garnered from this process and develop an options paper for release in the first quarter of 2018.

# Issues for comment

The ACMA invites comments on the questions for comment listed below or any other relevant issues. Details on making a submission can be found in the *Invitation to comment* sectionat the end of this document*.*

1. What disposition should the ACMA adopt in progressing possible 5G mmWave bands? Is a traditional approach appropriate, where Australia would wait until there were clear signs of a harmonised, widespread ecosystem developing in a band before it was seriously considered domestically? Or should a more proactive approach be adopted that would potentially make bands available very early in a more speculative manner? What are the benefits and risks to each approach?
2. When, or under what circumstances, would it be appropriate for potential 5G mmWave bands to progress beyond *monitoring* in the ACMA’s mobile broadband work program?
3. What bands are the most mature in terms of possible early moves on 5G mmWave bands?
4. What is the relative priority of investigation of mmWave bands versus other potential mobile broadband bands below 6 GHz?
5. Are there any specific regulatory changes that would be required to facilitate and support satellite services in the context of 5G?
6. Should the 26 GHz band be accelerated through the *initial investigation* stage to the *preliminary re-planning* stage in the ACMA’s process for consideration of additional spectrum for MBB services? Why/Why not?
7. Are there specific issues that may affect the timeframe in which the 26 GHz band could be made available for broadband services?
8. Should the 24.25–27 GHz or 24.25–27.5 GHz be made available initially for broadband services?
9. What licensing approach should be used for broadband in the 26 GHz band?
10. What geographical areas should be made available for broadband in the 26 GHz band?
11. Should any other mmWave bands be accelerated through the *initial investigation* stage to the *preliminary re-planning* stage in the ACMA’s process for consideration of additional spectrum for MBB services? Why/Why not?
12. Are there specific issues that may affect the time frame in which other mmWave bands could be made available for broadband services?
13. Should part or all of any these bands be considered initially for broadband services?
14. What licensing approach should be used for broadband in other mmWave bands?
15. What geographical areas should be made available for broadband in other mmWave bands?

# Invitation to comment

The ACMA invites comments on the questions for comment set out in this document or any other relevant issues.

**Making a submission**

* **[Online submissions](http://www.acma.gov.au/theACMA/Consultations/Consultations)**—submissions can be made via the comment function or by uploading a document. The online consultation page provides details.
* **Submissions by post**—can be sent to:

The Manager, Spectrum Planning Section

Spectrum Planning and Engineering Branch

Communications Infrastructure Division

PO Box 78, Belconnen, ACT 2616

**The closing date for submissions is COB, Friday 13 October 2017**.

Electronic submissions in Microsoft Word or Rich Text Format are preferred.

Enquiries

Media enquiries can be directed to Emma Rossi on 02 9334 7719 or by email to [media@acma.gov.au](mailto:media@acma.gov.au).

Effective consultation

The ACMA is working to enhance the effectiveness of its stakeholder consultation processes, which are an important source of evidence for its regulatory development activities. To assist stakeholders in formulating submissions to its formal, written consultation processes, it has developed [*Effective consultation—a guide to making a submission*](http://www.acma.gov.au/theACMA/About/Corporate/Responsibilities/acma-evidenceinformed-regulation-and-effective-consultation). This guide provides information about the ACMA’s formal written public consultation processes and practical guidance on how to make a submission.

Publication of submissions

In general, the ACMA publishes all submissions it receives. The ACMA prefers to receive submissions that are not claimed to be confidential. However, the ACMA accepts that a submitter may sometimes wish to provide information in confidence. In these circumstances, submitters are asked to identify the material over which confidentiality is claimed and provide a written explanation for the claim.

The ACMA will consider each confidentiality claim on a case-by-case basis. If the ACMA accepts a claim, it will not publish the confidential information unless authorised or required by law to do so.

Release of submissions where authorised or required by law

Any submissions provided to the ACMA may be released under the [*Freedom of Information Act 1982*](https://www.comlaw.gov.au/Series/C2004A02562) (unless an exemption applies) or shared with various other government agencies and certain other parties under Part 7A of the [*Australian Communications and Media Authority Act 2005*](https://www.comlaw.gov.au/Series/C2005A00044). The ACMA may also be required to release submissions for other reasons including for the purpose of parliamentary processes or where otherwise required by law (for example, under a court subpoena). While the ACMA seeks to consult submitters of confidential information before that information is provided to another party, the ACMA cannot guarantee that confidential information will not be released through these or other legal means.

Privacy

The [*Privacy Act 1988*](http://www.comlaw.gov.au/Series/C2004A03712) imposes obligations on the ACMA in relation to the collection, security, quality, access, use and disclosure of personal information. These obligations are detailed in the [*Australian Privacy Principles*](http://www.oaic.gov.au/privacy/privacy-resources/privacy-fact-sheets/other/privacy-fact-sheet-17-australian-privacy-principles).

The ACMA may only collect personal information if it is reasonably necessary for, or directly related to, one or more of its functions or activities.

The purposes for which personal information is being collected (such as the names and contact details of submitters) are to:

* contribute to the transparency of the consultation process by clarifying, where appropriate, whose views are represented by a submission

enable the ACMA to contact submitters where follow-up is required or to notify them of related matters (except where submitters indicate they do not wish to be notified of such matters).

The ACMA will not use the personal information collected for any other purpose, unless the submitter has provided their consent or the ACMA is otherwise permitted to do so under the Privacy Act.

Submissions in response to this paper are voluntary. As mentioned above, the ACMA generally publishes all submissions it receives, including any personal information in the submissions. If a submitter has made a confidentiality claim over personal information that the ACMA has accepted, the submission will be published without that information. The ACMA will not release the personal information unless authorised or required by law to do so.

If a submitter wishes to make a submission anonymously or use a pseudonym, they are asked to contact the ACMA to see whether it is practicable to do so in light of the subject matter of the consultation. If it is practicable, the ACMA will notify the submitter of any procedures that need to be followed and whether there are any other consequences of making a submission in that way.

Further information on the Privacy Act and the ACMA’s privacy policy is available at [www.acma.gov.au/privacypolicy](http://www.acma.gov.au/privacypolicy). The privacy policy contains details about how an individual may access personal information about them that is held by the ACMA, and seek the correction of such information. It also explains how an individual may complain about a breach of the Privacy Act and how the ACMA will deal with such a complaint.

1. Note: 37.0–40 GHz and 66–71 GHz are also being considered under WRC-19 agenda item 1.13 [↑](#footnote-ref-2)
2. Note: 24.25–27.5 GHz, 37.0–40.5 GHz, 47.2–50.2 GHz, 50.4–52.6 GHz and 66–71 GHz are also being considered under WRC-19 agenda item 1.13. [↑](#footnote-ref-3)
3. These observations were not included in the FYSO. [↑](#footnote-ref-4)