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AMTA Submission

Australian Communications & Media Authority

# Replanning of the 1880-1920 MHz band Options Paper



## About AMTA

The Australian Mobile Telecommunications Association (AMTA) is the peak industry body representing Australia's mobile telecommunications industry. Its mission is to promote an environmentally, socially and economically responsible, successful and sustainable mobile telecommunications industry in Australia, with members including the mobile network operators and service providers, handset manufacturers, network equipment suppliers, retail outlets and other suppliers to the industry. For more details about AMTA, see <http://www.amta.org.au>.



## Introduction and preferred replanning option

AMTA appreciates the opportunity to comment on the replanning of the band 1880-1920 MHz (“the 1.9 GHz band”). We maintain the previous comments made in our submission to the ACMA’s discussion paper *“Exploring the future use of the 1880-1920 MHz”*, dated 11 February 2022. As such, we refer to the ACMA to that previous submission and request that those views from 2022 be taken into account in considering this submission.

We maintain that the 1.9 GHz Band is likely not suitable for any wide-area WBB network, however we do believe that the 1.9 GHz Band could be used to provide WBB to particular premises/customers **on an opportunistic basis** and to serve customers where interference can be managed and/or other spectrum options are lacking. Where AMTA members have specific suggestions, they will convey them through their individual submissions.

We support the ACMA’s preliminary thinking in terms of the following:

- We support the ACMA’s preferred Option, **Option 4**, as it maximises the different types of applications that can be accommodated in the 1.9 GHz band; noting that this support is contingent on appropriate protection of apparatus-licensed receivers in 1900-1920 MHz, see further below. While this is not in itself a planning objective for AMTA, we recognise that this is spectrum which is not viable for wide-area WBB networks of the types of interest to mobile network operators (MNOs). However, the number of competing interests means that the 1.9 GHz Band will likely only be available on an opportunistic basis where interference is not caused to existing services within the 1.9 GHz band, nor to the wide-area wireless broadband (WA WBB) services—existing or future—in the adjacent bands below 1880 MHz and above 1920 MHz.
- We support the ACMA’s preliminary view to allow the *1900–1920 MHz Frequency Band Plan 2012* (“the 1.9 GHz Band Plan”) to sunset, thereby elevating fixed point to point (P-P) services to a co-primary status alongside point to multipoint (P-MP) services. In low demand areas, fixed P-P links and WBB services can both be accommodated on a coordinated basis.

One change from the February 2022 submission is that we no longer oppose the introduction of class-licensed DECT in 1900-1920 MHz *outright*. That said, we do note that the introduction of class-licensed short-range wireless broadband (SR WBB) in 1900-1920 MHz presents perhaps the biggest challenge associated with Option 4, since class-licensed services cannot typically share reliably with outdoor fixed links or outdoor WBB. Users of class-licensed services may not have the tools or knowhow—nor the obligation or incentive, as is the case with apparatus licensees—to effectively coordinate with, and thereby avoid causing interference to, existing apparatus-licensed

services. As such, our support for Option 4 is contingent on the development of an appropriate interference management framework to ensure that existing apparatus-licensed services are protected. If this cannot be achieved, we believe falling back to Option 3 is most appropriate.

AMTA stresses the importance of (a) the protection of adjacent-band 2 GHz BS receivers; (b) no harmful interference, nor undue constraint, to 1.8 GHz or 2 GHz networks; and (c) protection of, and continued support for, P-P links. More detail on each of these issues is provided below. The introduction of provisions for SR WBB and rail mobile radio (RMR) must be underpinned by the highest-priority consideration—to ensure protection of adjacent-band 1.8 GHz and 2 GHz networks, and to avoid imposing any additional constraints to the further development and evolution of those networks.

## Protection of adjacent-band 2 GHz and 1.8 GHz networks

AMTA maintains the previous comments made in its February 2022 submission under the heading *“Protection of adjacent-band 2 GHz and 1.8 GHz networks”*. As such, we refer to the ACMA to that section of the previous submission and request that those views from 2022 be taken into account in considering responses to the options paper.

Further to the comments made in the February 2022 submission, we wish to highlight the following. The ACMA’s Options Paper says<sup>1</sup> *“it is envisaged that there will be no additional requirements for the 1.8 GHz and 2 GHz spectrum licensed bands as a result of changes in the 1.9 GHz band arrangements.”* We agree with this ACMA intent. We also strongly support the following statement by the ACMA: *“The expansion of RMR does not include any intention to change the coexistence environment with services adjacent to the 1.9 GHz band. Any potential interference has been mitigated by limiting the allocation to 1900–1910 MHz. Any further analysis that indicates an increase to the adjacent channel interference environment will be mitigated by assignment rules to the RMR allocation.”*

However, we do not necessarily share the ACMA’s view that it can automatically be assumed (i.e., *“envisaged”*) *“...that there will be no additional requirements for the 1.8 GHz and 2 GHz spectrum licensed bands.”* In fact, the Options Paper goes on to observe<sup>2</sup> that ECC Report 318<sup>3</sup> concludes that future rail mobile communications services (FRMCS) base stations *“operating at higher powers may cause interference to mobile network base station receivers”*. Given ECC Report 318 highlights the potential for interference, some form of mitigation will be required.

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<sup>1</sup> Options Paper, top of p.30.

<sup>2</sup> Options Paper, p.31.

<sup>3</sup> ECC Report 318: Compatibility between RMR and MFCN in the 900 MHz range, the 1900-1920 MHz band and the 2290-2300 MHz band.

Fortunately, the same paragraph in the Options Paper goes on to say “*This issue **may** be mitigated by limiting the transmitter power of an FRMCS base stations.*” [emphasis added]. Thus, the ACMA appear to be saying they don’t envisage any additional requirements on IMT operators in adjacent bands **because** the onus will be on the FRMCS operator to reduce power to mitigate the interference.

Greater certainty is nevertheless required to ensure there will be no additional requirements for the operators of IMT base stations in the 1.8 and 2.0 GHz bands. Simply “envisaging” no requirements, and stating that interference “may” be mitigated by limiting the transmitter power of an FRMCS base station is insufficient assurance for spectrum licensees who have obtained spectrum licences at great expense. The ACMA will need to make it clearer in the technical instruments (assuming the 1.9 GHz band is opened up to RMR) for the 1.9 GHz band that the obligation to mitigate interference between FRMCS and IMT lies with the FRMCS operator.

Another way to achieve this outcome would be to designate RMR services as a secondary service (with respect to adjacent-band spectrum-licensed services) in the assignment rules developed for the 1.9 GHz band.

With the blocking interference mechanism, the only solutions include:

- (a) detailed coordination (including path loss and antenna discrimination),
- (b) control of the in-band radiated power levels of the interfering transmitter,
- (c) increase the selectivity of the victim receiver.

We oppose the retrospective imposition of additional requirements on 2 GHz base station receivers to provide increased selectivity as per point (c) above. We agree with FRMCS having to coordinate with existing 2 GHz base station receivers as per point (a) above, but do not agree with the reverse scenario where FRMCS could constrain deployment of 2 GHz base stations under the existing spectrum and apparatus licences. As such, we believe that coordination (point (a)) and in-band power limits (point (b)) will have to be imposed on the new services in the 1.9 GHz band, which may impact to some degree the utility of the band for FRMCS.

For example, in section 4.4.2.3 of CEPT Report 39—which is referenced in ECC Report 318—states: “*an in-block limit is needed in the TDD blocks... This limit is 30 dBm/5MHz [EIRP] in the 1905-1910 MHz... It has to be mentioned that the in-block limits given in this table are derived for the protection of the BS receiver. The in-block limits defined in this Table are developed without assuming any additional practical implementation measures (e.g. at FDD BS reception side).*”

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