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Australian Communications and Media Authority

Addendum to FYSO 2020–24

Response to submissions to draft FYSO 2020–24

SEPTEMBER 2020

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Response to submissions

Thank you to all stakeholders who responded to the public consultation IFC 09/2020 Draft five-year spectrum outlook 2020–24 (draft FYSO 2020–24).

The Australian Communications and Media Authority (ACMA) invited comments on the draft FYSO 2020–24 and on specific questions:

1. What are the expected impacts of the COVID-19 pandemic on the short- and medium-term capacity of your industry?
2. Do you have any feedback on the ACMA's approach to its spectrum work program in the current environment? Do you have alternative proposals or priorities?
3. Are there other technology developments or sources of spectrum demand that the ACMA should be aware of in considering spectrum management over the next five years?
4. Do you have any other feedback on the ACMA's plans for monitoring, initial investigation, preliminary replanning or replanning of bands?
5. Do you have any comments about the ACMA's approach to forward allocations?

We received 49 submissions from members of industry, industry representatives and peak bodies, government agencies and members of the public.

We have given careful thought to all submissions and incorporated submitter reflections into our internal considerations. This addendum focuses on the major themes from submissions and our response to them.

As several submitters noted, the 2020–21 spectrum work program outlined in the draft FYSO 2020–24 is a very full program. In response to submissions and while balancing the work program already underway, we are adding some additional activities to the work program:

- investigating wi-fi developments and needs—including the 6 GHz band
- investigating the 1880–1920 MHz band (cordless telephone class licence and possible point-to-multipoint apparatus licensing in 1900–1920 MHz) regarding new technologies and use cases
- considering an update to the ITS class licence to address automotive industry requirements.

Other suggestions for inclusion of activities in the work program will inform future work program development.

We also made other adjustments to the FYSO 2020–24 based on feedback received:

- moved 6 GHz to initial investigation stage
- reaffirmed ongoing consideration of spectrum sharing
- elaborated on the purposes and structure of the planning stages.

Impact of COVID-19 pandemic

Consultation question 1: What are the expected impacts of the COVID-19 pandemic on the short- and medium-term capacity of your industry?

Impact on industry

The draft FYSO outlined the ACMA response to the COVID-19 pandemic and included questions to elicit stakeholder comments on the impact on their industry.

Submitters reported disruption to their industry, customer base and revenue:

- media organisations reported increases in average audience for news programming, the need for fast turnaround of information and increased translation requirements
- the mobile and telecommunications industry and mobile network operators reported increased network demand as a result of changed work and study practices
- several submissions noted that the bushfires had a material effect
- submissions identified the need for financial assistance and support for regional and remote communication and emergency services.

Response to submitters

We have provided industry consideration through the pandemic with extended timeframes for consultations, and assistance with fee deferrals and instalment arrangements. The ACMA COVID-19 regulatory forbearance currently links to the commitments set out on the Communications Alliance website in response to COVID-19. Longer-term matters regarding pricing can be considered as part of the implementation of the Spectrum Pricing Review.

Consultation question 2: Do you have any feedback on the ACMA's approach to its spectrum work program in the current environment? Do you have alternative proposals or priorities?

Work program

Submitters were generally supportive of the overall ACMA work program in the current environment.

There was a suggestion that the industry impact of COVID-19 may need to be considered throughout the duration of the five-year FYSO.

Response to submitters

We will continue to review and consider the impact of COVID-19 for the entire period covered by FYSO 2020–24 and adjust our priorities/policy where necessary.

Technology developments or sources of spectrum demand

Consultation question 3: Are there other technology developments or sources of spectrum demand that the ACMA should be aware of in considering spectrum management over the next five years?

Wireless broadband and 5G

5G continues to be important to many submitters, with several noting the likely growth in demand. Some suggested the ACMA should make appropriate amounts of contiguous spectrum available to mobile operators in a timely manner to facilitate the cost-effective deployment of 5G networks. Others considered that existing spectrum available, or about to be auctioned via spectrum licensing may already be sufficient for the needs of IMT/5G mid-band spectrum.

One mobile network operator suggested more weight should be placed on ensuring that currently allocated licences are able to technically support the deployment of 5G equipment, rather than moving in advance of the global eco-system to deploy new spectrum bands not yet harmonised or supported. However, others in the mobile industry suggested progressing mmWave bands to the initial investigation stage.

One submission proposed that the ACMA undertake a comprehensive study of the currently used 3G, 4G and 5G technologies and their level of spectrum usage.

Response to submitters

The ACMA is making a significant amount of spectrum available for 5G and is on track to allocate spectrum in the 26 GHz band for spectrum licensing in early 2021. Subject to Ministerial consideration, we are working towards an auction of 850/900 MHz band spectrum in late 2021. Defragmentation of the 3.4 GHz band is also underway. Apparatus licensing arrangements supporting wireless broadband are also being developed in a number of bands, including 26 and 28 GHz. This will support industry in its continued rollout of 5G networks.

A work program to review and, where appropriate, update existing spectrum licence technical frameworks to better support 5G technologies is underway. This will support industry in its continued rollout of 5G.

The ACMA does not plan to undertake a comprehensive review of wireless broadband (WBB) technology and their level of use of spectrum. When reviewing arrangements in a band, the ACMA seeks to identify highest values use or uses within a band and assess the costs and benefits of any proposed change to planning arrangements. This takes into account a range of factors, including (but is not limited to) the current and future spectrum requirements of incumbent and proposed new services.

Spectrum arrangements for local area wireless broadband

Submitters offered views on private WBB (including ‘private LTE’ and ‘private 5G’), involving the suggestion the ACMA should be doing more to find dedicated spectrum for uses such as industrial complexes including factories, enterprises, ports, mines, petrochemical installations and agricultural environments.

Some submitters argued that the enterprise networks market must be considered in the immediate future to ensure that spectrum is not locked up for long licence tenure terms in blocks that are designed for auction to major carriers.

Other submitters claimed that industry interest in the deployment of private enterprise networks was being hindered by a lack of suitable unlicensed spectrum.

A submitter suggested dedicated spectrum be made available between 3400–4200 MHz for private broadband systems based on LTE or 5G technologies, through apparatus licensing or other local licensing framework.

Response to submitters
The ACMA has released an information paper detailing spectrum options currently, or in the process of being made available for local area private wireless broadband networks. Of note is the current review of arrangements in the 3700–4200 MHz band and implementation of class and apparatus licensing arrangements in the 26 GHz and 28 GHz bands.

The new FYSO work item looking at possible changes to class and apparatus licences in 1880–1920 MHz band may offer additional opportunities for private and local area wireless broadband purposes. The link with this work and possible new local area wireless broadband opportunities has been highlighted in the FYSO.

Digital radio—interest from community radio

A submitter disagreed with the ACMA's assertion that the establishment of digital radio services should be a commercial decision of the relevant incumbent commercial radio broadcasting licensees.

Response to submitters
We have noted this comment, however, the current legislative framework requires the participation of the incumbent commercial radio broadcasting licensees before a roll-out of digital radio can occur in a particular licence area.

Allocation of remote TCBLs to community radio licensees

One submitter suggested the ACMA consider making available long-term community radio licences in remote areas where there are currently temporary community broadcasting licences (TCBLs) operating over an extended period of time, to relieve the administrative burden on both the licensee and the ACMA.

Response to submitters
Within the existing framework for community broadcasting licensing, and for our priority-setting and decision-making in radio broadcast planning, we will look at ways to relieve the administrative burden on temporary community broadcasting licensees in remote areas.

Spectrum sharing

Submissions from a range of spectrum interests suggested the ACMA adopt new spectrum-sharing opportunities in managing spectrum. Submissions referred to international developments in Dynamic Spectrum Sharing (DSA) approaches such as Citizens Broadband Radio Service (CBRS) in the US and the local access licensing framework in the UK.

Some submissions proposed that the ACMA review how licence-exempt and spectrum-sharing approaches can be utilised to maximise access to spectrum. Others suggested the ACMA take a wait-and-see approach to the development of a formal DSA regime.

Response to submitters
The ACMA's *New approaches to spectrum sharing—Next steps* paper was published during the draft FYSO consultation period. The final FYSO has been updated to reflect recent developments and ACMA spectrum-sharing decisions. Spectrum sharing also relates to private WBB and area-wide licences.

We are monitoring international developments in DSA and remain open to proposals to trial new sharing approaches, where reasonable and legally implementable. We note that possible spectrum-sharing approaches go beyond DSA and can include giving access to unused spectrum through regulatory policy.

Separately, the ACMA has also released an information paper on *Spectrum options optimised for local area wireless broadband services*, which is relevant to some of the use-cases that might be interested in shared access to spectrum.

We have also raised spectrum sharing as part of the implementation of the Spectrum Pricing Review.

Intelligent transport systems (ITS)

Several submissions, including from automobile manufacturers, requested changes to the existing class licence, including the implementation of channelisation requirements. Submitters also noted the evolving international environment surrounding co-operative intelligent transport systems (C-ITS).

Response to submitters
We will continue to monitor developments in C-ITS. We have included an item on reviewing arrangements in the ITS class licence in the 'Optimising established planning frameworks' section of the FYSO.

Planning framework

Consultation question 4: Do you have any other feedback on the ACMA's plans for monitoring, initial investigation, preliminary replanning or replanning of bands?

Priorities

Most submissions offered comment on the relative priorities for the proposed planning activities. Several observed the full program and suggested that the current work program is sufficient for FY2020–21 and that current activities should be the focus for FY2020–21, without the addition of new work.

Some satellite interests advocated for decoupling consideration of the 1.5 GHz band (1427–1518 MHz) and adjacent extended MSS L-band (1518–1525 MHz and 1668–1675 MHz). They suggested the development of a licensing framework for satellite use of the extended MSS L-band be prioritised and consideration of the lower adjacent 1.5 GHz band be deprioritised.

Various other priorities suggested by submitters (such as ITS, wi-fi, private LTE) are discussed elsewhere in this response paper.

Response to submitters

The planning work program provides considerable focus on major planning activities to support a wide range of uses.

We continue to be of the view that there is benefit in reviewing the 1427–1518 MHz (1.5 GHz band) and the MSS L-band (1518–1525 MHz and 1668–1675 MHz) in one process. This is due to the common frequency boundary at 1518 MHz, which means decisions made for one band could impact decisions made for the other.

On balance, given current FYSO commitments and industry feedback, we intend to focus on consolidating and delivering the existing work program commitments, with the addition of a small number of new activities:

- investigating wi-fi developments and needs—including the 6 GHz band
- investigating the 1880–1920 MHz band (cordless telephone class licence and possible point-to-multipoint apparatus licensing in 1900–1920 MHz) regarding new technologies (for example, Multefire) and use-cases (local area wireless broadband/private WBB)
- considering an update to the ITS class licence to address expanded automotive industry requirements.

Articulation and nature of planning stages

Several submissions commented on the planning 'stages' process used in the FYSO to describe the ACMA process for undertaking major replanning activities. Comments included a request for the description of the process to be moved forward in the document and that additional information on bands in the monitoring stage (including timing to be considered) be provided. There were concerns that the four-stage process was inflexible and linked to a 'one-year per stage framework'. Some submissions also supported the process and identified that it was helpful.

Response to submitters
The ACMA's work in major spectrum planning and replanning activities is to investigate and, where appropriate, support the establishment of new spectrum uses in bands. The ACMA's process in establishing new planning frameworks is built around considering bands at four distinct stages: monitoring, initial investigation, preliminary replanning and implementation (previously named 'replanning').

Consistent with the intent of the entire FYSO, the primary purposes of the major replanning process framework are to provide transparency in the ACMA's work program and a framework to assist in identifying and actioning priorities. In the context of spectrum planning, in addition to the major band-replanning activities to support the establishment of new spectrum uses, the ACMA has identified a work program to optimise established planning frameworks for existing spectrum uses to reflect changes in technology or other use factors. While useful to provide a structure for describing the ACMA's planning activities, these two work streams are not entirely exclusive, in that some activities may blur or overlap between the categories.

A band's possible progression through each stage will be dependent on a range of factors and, in some cases, may move 'backwards' if consultation processes, information gathering, or work program prioritisation suggest this is appropriate. Similarly, bands may 'jump' stages if circumstances warrant doing so. In other words, these planning stages are descriptive of a general, common framework but not prescriptive. Furthermore, there is no set period a band must remain at a stage, nor has the ACMA ever stated that this domestic process is linked to the four-year ITU cycle. Timing of progression is based on the circumstances at hand and not on any predetermined cadence.

We haves provided more detail in the FYSO about the purposes and structure of the planning stages.

6 GHz band

Many submitters considered that the 6 GHz band should be included as a focus for the future work program and should be moved from monitoring to initial investigation, including to support class-licensed operations that would support next-generation wi-fi (Wi-Fi 6E).

Response to submitters
While international developments in this band are still relatively nascent and spectrum demand issues with wi-fi difficult to quantify, we are of the view that it is prudent to add the 5925–7125 MHz frequency range to the list of bands subject to initial investigation, with a view to releasing an exploratory discussion paper in Q4 2020.

We also note that some parts of the 5 GHz band were considered under the WRC-19 study process for these purposes, with consequent changes to Article 5 of the Radio Regulations made in the frequency range 5150–5250 MHz. It is the ACMA's view that any exploration of possible measures to increase the wi-fi use of the 6 GHz band should, for completeness, include an examination of relevant parts of the 5 GHz band as well.

An item has been added to the FYSO to review the 6 GHz band for possible support for wi-fi and possible changes to existing 5 GHz Low Interference Potential Device (LIPD) class licence uses. In line with this, these bands will be moved to the initial investigation category.

600 MHz band

Submissions from mobile network operators (MNOs) expressed interest in the 600 MHz band more strongly than in previous years. Submitters suggested that the band should be moved to initial investigation in the near future, such as in FYSO 2021–25.

Response to submitters

We note that the 600 MHz band is a WRC-23 agenda item. We will continue to monitor developments in the band, but at this stage do not consider it prudent to begin active investigation. We will reconsider whether to progress this band to the initial investigation stage in future FYSOs.

Forward allocation work plan

Consultation question 5: Do you have any comments about the ACMA's approach to forward allocations?

Work plan

The forward allocation work plan in the FYSO provides information for spectrum users about the possible timing and sequencing of major spectrum allocations.

Several submissions commented on the extensive workload planned for 2020–21. Others considered that we had achieved a robust plan that focused on the key priority areas.

The draft FYSO sought feedback on whether the ACMA should prioritise reviewing the 1.5 GHz band or the 40 GHz, 47 GHz and 48.2–52.4 GHz bands:

- a range of submissions did not consider the 1.5 GHz band as a whole to be a short-term priority because of technical challenges, little international activity and relatively low demand
- there were varying views on the priority of additional mmWave spectrum for wireless broadband
- submissions from the satellite sector indicated that the need for extended MSS capabilities is imminent and suggested the ACMA consider focusing the deployment of MBB in the portion of the 1.5 GHz band below 1492 MHz, deferring consideration of the higher portion of the band
- there was varying, and in some cases modest, interest in the 40/45/47 GHz bands from both the wireless broadband and satellite sectors.

Several submissions supported prioritisation of activities relating to the allocation of 850/900 MHz spectrum.

Some MNOs saw potential for a combined auction of the 3.4 GHz and 3.8 GHz bands by the end of 2022.

An MNO suggested there should be no more than one major spectrum allocation/auction conducted in a calendar year and there should be at least six to 12 months between the end of any auction/allocation process and the commencement of the next.

Response to submitters

We are mindful of the pressures that can arise from the timing of auctions and aim to conduct them at least six months apart. We seek to balance the concerns of potential auction participants with the demand for additional spectrum, the importance of accommodating emerging technologies and the need to ensure the maximum benefit to the public.

The allocation process for the 26 GHz band is well advanced, with the release of the draft allocation instruments for consultation in July 2020, and an auction remains scheduled for Q1 2021. The consultation package for the allocation of 26–28 GHz apparatus licences was released in August. We have decided not to reprioritise the 850/900 MHz allocation before the 26 GHz spectrum licence allocation.

A combined auction of the 3.4 GHz and 3.8 GHz bands may not be a feasible option. However, we will explore the possibility as we progress band-planning arrangements

Due to the current extensive work program, we will not progress work on the 1.5 GHz band and extended MSS L-band in FY2020–21. We will reconsider whether to progress work in these bands for FYSO 2021–25.

Other comments

Area-wide licence

Submissions commented on the new area-wide licence (AWL) type and its proposed use in the 26 GHz and 28 GHz bands.

Some wireless industry and other spectrum users expressed satisfaction with the amount of spectrum that will be made available under the licensing framework in the 26 GHz and 28 GHz bands, noting the increased flexibility that AWLs can provide for smaller carriers.

Some MNOs stated opposition to the AWL concept. Concerns focused on the relationship to spectrum licences and the rights of spectrum licensees.

One submission rejected the lack of a default requirement for registration of devices.

Response to submitters

The ACMA recently released a consultation package on proposed licensing and technical arrangements for AWLs in the 26 GHz and 28 GHz bands.[1] We consider that the overall utility of the spectrum will be maximised in the 26 GHz and 28 GHz bands under those proposed arrangements, however stakeholders have another opportunity to provide additional feedback through that consultation process.

Pricing

Pricing matters raised by submitters to the draft FYSO have also been included as part of the consultation on the implementation of the Spectrum Pricing Review, particularly pricing arrangements for:

- sharing spectrum
- spectrum used for academia and research purposes.

A submission also discussed the application of opportunity costing to frequency bands identified for systems used for national security, safety-of-life and emergency response.

Response to submitters

We are developing a work program to implement the Spectrum Pricing Review.

Structure and approach of the FYSO

Submitters commented positively about the FYSO concept and structure. The transparency, redesigned presentation and readability were singled out for comment. The tabular presentation was appreciated by two submitters.

There were some suggestions for improving the format and structure, noting repetition and complexity.

Response to submitters

Complexity and the appearance of repetition was tackled in FYSO 2019–23 and further considered in the structure of the draft FYSO 2020–24, but we acknowledge that the FYSO necessarily remains a large and complex document.

We will continue to review the structure of the FYSO to improve transparency and assist stakeholders to engage with the work program.

[1] See the ACMA website for more information.