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**AUSTRALIAN COMMUNICATIONS AND MEDIA
AUTHORITY**

FIVE-YEAR SPECTRUM OUTLOOK 2017–21

**THE ACMA'S SPECTRUM MANAGEMENT WORK
PROGRAM**

COMMUNICATIONS ALLIANCE SATELLITE SERVICES
WORKING GROUP SUBMISSION

24 JANUARY 2018

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INTRODUCTION

The Communications Alliance Satellite Services Working Group (SSWG) welcomes the opportunity to provide this submission on the ACMA *Five-year spectrum outlook 2017–21 - The ACMA's spectrum management work program* by the Australian Communications and Media Authority.

Executive Summary

The SSWG commends the ACMA in the ongoing development of the FYSO and the spectrum work program. This submission highlights many areas where the FYSO is providing value to industry and proposes where there are areas that can benefit from further consideration, including the important areas of engagement, communication and timeliness.

The SSWG recognises the steps being taken by the ACMA in improving its consultation processes to better engage with industry, including the recent Radcomms and the spectrum tune-up. Ongoing two-way dialogue with the industry is seen as an essential component in the planning and management of applications, allocations and spectrum assignments.

Timeliness is a continuing essential component of beneficial consultation. The SSWG recognises that the current FYSO is a bridging version to alignment with the business cycle, and the next FYSO should bring that alignment. In parallel with this the Radcomms and Tune-ups could be synchronised with the relevant aspects of the FYSO and its embedded Work Program. Effectively engagement through consultation papers, stakeholder events and stakeholder meetings need to be balanced and integral to the overall planning of the consultation process.

Industry believes that the FYSO could be improved through the inclusion of additional information on spectrum sharing. The exploration of practical spectrum sharing - coordination and cross-industry collaboration in pursuit of solutions for harmonised existence of services in a band - is important to ensure that incumbent services continue to be recognised in a way that respects the commercial interests of the service providers.

The Work Program and associated priorities nominated by the ACMA are identified by the SSWG as a critical factor to success of the FYSO and the dialogue which this allows. Different priorities arise for different satellite operators – frequency bands, policies, technologies etc. and the SSWG seeks to find a workable consensus which has overall benefit to the satellite industry. The Work program is the most important element of the FYSO in this regard.

The anticipated Transition and Consequential (T&C) Bill is also seen as an important means to ensure that the rights and conditions of existing licences are maintained through the transition for the remaining term of the licence, and that the transition does not inhibit business-as-usual (BAU) activities.

The SSWG that has developed this submission is a group of satellite-related companies active in the Australian market and includes satellite operators, satellite service providers, manufacturers and ground-segment installers. A list of SSWG members is at Attachment 1. This submission reflects the views of SSWG members within Communications Alliance. It does not necessarily represent the views of other Communications Alliance members.

About Communications Alliance

Communications Alliance is the primary telecommunications industry body in Australia. Its membership is drawn from a wide cross-section of the communications industry, including carriers, carriage and internet service providers, content providers, equipment vendors, IT companies, consultants and business groups.

Its vision is to provide a unified voice for the telecommunications industry and to lead it into the next generation of converging networks, technologies and services. The prime mission of Communications Alliance is to promote the growth of the Australian communications industry and the protection of consumer interests by fostering the highest standards of business ethics and behaviour through industry self-governance. For more details about Communications Alliance, see <http://www.commsalliance.com.au>.

Part 1—Work plans for new major projects

1 Spectrum work program

General comments

The Communications Alliance Satellite Services Working Group (SSWG) commends the ACMA on the ongoing development of the FYSO and the spectrum work program. The report is comprehensive and is sensitive to previous feedback; taking on board many of industry's earlier suggestions, as well as synchronising with and capturing the developing draft legislation.

This submission highlights many areas where the FYSO is providing value to industry, but there is a number of areas where an effective program can benefit from further consideration, particularly around engagement and timeliness.

The timeliness of the intended process as documented is most welcome and should assist industry by aligning work cycles. While it is anticipated that this year will be a 'bridging year', it should be a priority to finalise and publish this edition of the FYSO well ahead of the next iteration.

Work plans for major projects

The SSWG suggests that there is room for greater visibility of the ACMA's work plans and its internal thinking. Open and continuous engagement is encouraged so that those affected within the industry are more informed during the process.

In the disclosure of information, it would certainly be of benefit to focus on relevant changes rather than a repetition of the process of analysis and other previous background, which could be relegated to a more static document.

The SSWG sees the value in the work program placing emphasis on progress achieved during the year. At times in the past it has seemed that missed goals or deadlines were not acknowledged or addressed.

Synchronising with the financial year should be the preferred direction for the FYSO and the consultative process. For instance, if the Radcomms conference is seen as an important part of the consultation process, then the Radcomms conference should be similarly aligned. Further thoughts on the Radcomms conference follow in the response to Question 3.

Consultation Questions

Q1. Will the proposed structure of the work program assist you in your business planning?

As a general comment the members of the SSWG see an annual work program as one of the most valuable tools providing insight into the ACMA's thinking and planning in the allocation of spectrum. The disclosure of the ACMA timetable, with targets and milestones, has been of particular help.

The benefit for industry is to have the provision of this information aligned with its business cycles and, most appropriately, the financial year, notwithstanding the challenge that there

are many shorter and longer term cycles to be taken in account, including international activities such as the WRC.

One remaining question is how a potential Ministerial policy statement factors into the future processes of the FYSO under the new regime and how much time industry will have to provide input. This could become an important area of consideration in the next edition of the FYSO.

Q2. Does the content provide adequate detail for you to engage with the ACMA's planned work in a meaningful way?

The information that has been provided in the work program is welcomed, with the *Spectrum Work Plan* Table in Part 2 being extremely informative and a useful addition to the FYSO.

There is one area though where the SSWG feels that further information would be of benefit, and that is the growing importance of spectrum sharing. For instance, where the ACMA has conducted coordination and coexistence studies, this information should be incorporated in the work program to assist the industry to understand how the ACMA came to its conclusion.

One area of interest to the satellite sector is the need for the ACMA (and overseas regulators) to start addressing spectrum sharing in bands used by both terrestrial services and NGSO satellites. This area should be closely guided by WRC-19 preparations and specifically Agenda Item 13, while noting that most of the Agenda Items involve a satellite component in one form or another. Following the outcomes of the WRC, there will be many licencing implications that will need to be considered.

Q3. Does the consultation process provide sufficient opportunity for you to contribute to the work program?

The SSWG commends the ACMA for improving its consultation processes and engagement with industry. The mmWave tune-up held in September 2017 and Radcomms 2017 in November were constructive and well received by industry. The SSWG appreciates the changes that the ACMA is introducing and encourages the ACMA to continue in this direction.

We would also like to suggest a few other ideas for consideration.

The aspects of these events that were best received were the sessions that allowed for industry members to engage in a two-way dialogue with the ACMA on specific issues. Having fora where members from different industry sectors to have the opportunity to engage with each other, share information and peer-review each other's positions goes a long way to avoiding allegations of a lack of transparency or non-inclusion. Unless there are these types of fora, industry members rarely have the opportunity to see all the inputs, so it is often difficult to connect all the pieces together. Our members cannot emphasise enough the importance of allowing for this type of discourse.

On the other hand, the value of developing submissions in response to the ACMA's discussions and consultation goes without saying. Having a formal process to capture industry's positions on specific work program items is both necessary and a good discipline in formulating positions. So we believe that a balance between the two approaches will deliver the best consultation outcomes.

The problem for our members is in the breadth of the work program before us and the time constraints on executing these reviews. In the past three years our members have been involved in more than 60 legislative and regulatory consultations. Sixteen of these have been spectrum/ radiocommunications related, originating mainly from the ACMA.

There is a danger of industry (and for that matter regulatory) 'consultation fatigue' which suggests the need for an alternative and better structured solution - an engagement strategy that fosters a more continuous and iterative working relationship between the ACMA and industry throughout the process. There is a need to develop more efficient mechanisms to engage all the relevant stakeholders and work through issues. This would be beneficial for the regulator as well as the industry to assist in managing demand on time and resources.

As an example, there have been three consultation papers in the last eleven months on the 3.6 GHz spectrum band alone. Although the SSWG and its members welcome these opportunities to provide our members' views and the efforts by the ACMA staff in seeking these views, we are coming to the conclusion that under the new arrangements in the revised Radiocommunications Act, there should be an opportunity for the ACMA to provide a better consultative service by introducing more flexibility in the processes to the benefit of all parties.

It is recognised that the ACMA has legislative obligations under the Act to consult but the SSWG recognises that what has been referred to as a 'ping pong' effect (the ACMA developing a consultation paper, the industry responding, the ACMA reviewing the response and the ACMA developing another paper) may not be the most efficient use of the regulator's and industry's resources.

The standing request by industry is for the ACMA to ensure that industry is given sufficient time to engage in the consultations to be able to provide a developed position on issues that are often complex and may require further consultation within their respective organisations, their partners and their associations. Having advance notice of when consultation papers are to be released, for instance in the form of a timetable in Work Program, would assist industry manage its resources.

The following suggestions are offered for consideration to augment the consultation process:

Radcomms

- if the Radcomms events are to be integral to the consultation process, then to expand on the sessions that allow for interaction between the ACMA and industry members. This approach will also avoid the feeling by some that the events are somewhat scripted and orchestrated, being managed as a means to an end.
- having Radcomms as a part of the consultation process does raise an issue, as there is a reasonably significant fee that must be paid to attend the event. This in itself will exclude some industry members who cannot afford to attend. It also raises the question as to whether it is appropriate to have to pay to engage in consultation.
- noting that to align Radcomms with the financial year and noting the ACMA resource commitments leading up to WRC-19, our preference would be to skip one event, rather than attempting to awkwardly squeeze in a Radcomms. There

may be an opportunity for additional tune-up sessions to supplement the consultation processes during this period.

Bilaterals and multilaterals

- we recommend holding bilateral discussions between the ACMA and industry associations and other representative bodies as part of the Radcomms program. A recent example of successful engagement with the SSWG was the Space Industry Capabilities consultation undertaken by the Department of Industry through their Expert Group chaired by Dr, Megan Clark. It is also noted that Giles Tanner has met with the SSWG on a couple of occasions in which the members enjoyed an informative and open discussion covering many topics. An added benefit would be the opportunity to test the practicality of the deadlines being proposed by the ACMA against a background of industry understanding and progress internationally.
- we note that one approach taken by the ACMA has been to hold one-to-one stakeholder discussions in confidence. Although the SSWG respects the right of confidentiality in how a stakeholder engages with the ACMA, we feel that full value is achieved by having, to the greatest degree possible, open and transparent consultative arrangements.

Advisory bodies

- noting that the ACMA has had high level peak advisory bodies and panels in the past to provide ongoing engagement and continuity in the consultation processes, the SSWG notes the benefits that may come by restoring the elements that allowed this high level of interaction, having such an entity in place to drive the process and allow informal and productive dialogue that is appropriate to the current regulatory and commercial environment.
- consideration would need to be given to how to manage effective and representational membership of such an entity. Recognising the added value in having positions presented by industry groups rather than by individuals, representational associations such as Communications Alliance, AMTA, IoTAA and Free TV would be well placed to fill this requirement.

It is anticipated that in following the current approach, the consultations coming up for each band will create a burden for both industry and the ACMA. Some elements of continuous engagement with stakeholders in the past, such as with the former Radiocommunications Consultative Committee (RCC), have been discarded along the way and an important face-to-face regular updating opportunity has been lost.

The SSWG recommends a higher level avenue of engagement to pave the way for better understanding and influence over the ACMA's internal thinking and strategies. This would provide an early opportunity for exposure to the ACMA's implementation engagement intentions.

Finally the SSWG is pleased to see in recent times that the ACMA has been increasingly providing feedback on the rationales leading to the decision why certain industry proposals had been rejected. This information goes a long way to assist the industry to understand the ACMA's decision process and the SSWG encourages the ACMA to build upon this essential component of the consultation process.

Q4. Do you have a preference for how the ACMA should communicate changes during the period of a work program?

The SSWG understands the importance for the timely and accurate dissemination of information and encourages the ACMA to employ what means it has access to, to keep industry across current developments and decisions.

It is recognised that the ACMA already makes use of its website, email and social media notifications in this regard. The website could be employed to a greater degree in the timely provision of changes through a live document or 'portal' that could be regularly updated (with accompanying 'alerts' to subscribers).

Another option could be for the ACMA to build on its engagement program by having regularly scheduled tune-ups and other sessions to allow live interaction between industry and the ACMA during the period of a work program.

2 The forward allocation work plan

The SSWG sees the provision of the forward allocation work plan as an essential component of the information provided by the ACMA on spectrum management. In addition to the responses to the questions posed in the FYSO, the following items are also offered for consideration.

Allocation

The use of the term 'allocation' in this section may be misleading, in that consideration eventually might lead to a planning decision to move to an 'allocation'. What is really meant in this context is a 're-allocation' or 'revised allocation'. This is in recognition that bands already have services allocated to the various parts of the spectrum through the Australian Radiocommunications Spectrum Plan.

This also raises a concern that in reading this section, the reader is left with the impression that an auction is the inevitable result of consideration of any particular band which progresses to a (revised) allocation. There are also administrative solutions. One of the challenges for the ACMA is the trade-off between spectrum exclusivity vs spectrum sharing.

Consideration should be given band by band, noting that a review does not necessarily lead to an auction. Auctions are most suited to situations where commercial demand is expected to exceed supply and the spectrum can be suitably packaged into efficient lots that also take account of the interests of incumbent licensees. There is still the question as to how auctions can work effectively for smaller providers who may operate on a smaller scale, over limited geographical areas and have shorter term business horizons.

Sub-lots

One idea supported by some, but not all members, in the auction scenario regarding lot configuration might be to have sub-lots relating to areas around incumbent facilities with incumbents being able to bid for that sub-lot. That would then assist in establishing the highest value use of the sub-lot.

Commercial considerations

There appears to be a disconnect between the ACMA's encouraging commercial negotiations compared with the direction and timing of recent allocation reviews. A case in point is the decisions relating to the 3.6 GHz band on re-allocation periods, where the conditions and milestones have been strictly determined and controlled by the ACMA. However, it is recognised by the SSWG that the ACMA has given some consideration to the needs of individual incumbents in the proposed reallocation of the 3.6 GHz band.

With regard to potential greater commercial flexibility, a mutually agreeable solution for the 850 and 900 MHz bands might produce a different result from what is predicted by the outcome foreseen by the ACMA.

Future work on the millimetre wave bands above 26 GHz and the 1.5 GHz spectrum band should have due regard to the outcomes of international sharing studies and the emerging demand which is already occurring in both the terrestrial and satellite sectors.

Timing

It is reassuring to see that the ACMA is working on speeding up its processes and addressing bands in parallel where it is relevant to move ahead. The hiatus of more than twelve months between a planning decision and bringing spectrum to market is a bureaucratic impediment if the pace of industry development is moving quickly. An additional year of delay might be an undesirable outcome for the users of spectrum.

Consultation Questions

Q5. Does the inclusion of a forward allocation work plan by the ACMA assist with the planning of your spectrum and network technology decisions?

The SSWG considers Table 1, on spectrum bands that are currently being considered for allocation, a good inclusion. This information will assist with the technology and spectrum decisions within organisations. Again, we note that it is important to synchronise the availability of any developments with the planning and investment cycles of these organisations.

Of specific interest, under 3.6 GHz, the SSWG encourages the proposal to create one or more earth station protection zones on the East coast and possibly in the North, subject to a closely developed proposal with industry. A continuing interest in the West is most desirable.

The SSWG would also like to take this opportunity to propose new areas for consideration, such as a taxation review of Ku band, compensation and spectrum subplots. These will be discussed in our comments for Part 2 *Five-year spectrum outlook and 2017–18 spectrum work program* further on in this submission.

Q6. Do you have any comments on the scenarios? Are there other scenarios you believe warrant identification and particular attention at this time? Why?

The SSWG, other than Telstra and Optus, agrees with the ACMA's preferred view being proposed under scenario 1 based on the current state of understanding of market demand for existing and emerging uses of spectrum, progress on international harmonisation and technology standardisation. It is understood that both Telstra and Optus will convey their preferred scenario in their submissions.

It is noted that there are now no unknowns with the 3.6 GHz and the 800/900 MHz bands and that the ACMA planning for millimetre Wave (26 GHz) and 1.5 GHz bands should be concluded subsequent to international studies.

An objective of the reform work and the transitional arrangements should be to avoid holding up the spectrum work program and the business-as-usual activities of the licensees. Whilst the timing of (re-)allocation decisions may straddle the current Act and the new Bill, the test should be that if this could be a problem then the status quo should remain, awaiting further certainty and a greater involvement and influence or co-design with industry and users.

Q7. Is there interest in the ACMA running sequential staggered allocations over the next four-year period?

The SSWG considers that, in principle, parallel reviews should be more efficient, but it will partly depend on the proposal of a new business model to engage with industry. As the

ACMA has identified, the key issue is that of timing and how quickly spectrum can be allocated or reallocated to spectrum stakeholders.

The review of spectrum applications will need to be on a case-by-case basis. There are many factors that are required to be taken into account, including funding, investment, network deployment, limitations in industry and regulatory resources in conducting reviews in parallel. Some decisions will be dependent on outcomes of preceding spectrum allocations.

If the allocations are through auctions, then the parallel undertaking of the planning work leading up to spectrum auctions would be considered a better use of resources rather than doing this sequentially. On the other hand, Carriers who have been involved in spectrum auctions to date observe that it would not be efficient to run more than one auction simultaneously, as running an auction is resource intensive for both the ACMA and industry.

Q8. Which bands would you like to see prioritised for allocation under the planning scenarios? Why?

The SSWG suggest that allocation prioritisation should process in the sequence of the preferred scenario.

3 ACMA approach to implementation of the Spectrum Review

Objectives and Principles

With regard to whether the ACMA's directions are consistent with the reform objectives, the following comments are made.

The ACMA has a preference for principle-based approaches, and the SSWG recommends the framework proposed by the joint Associations (AMTA and CA) which was used to analyse the Government's reform proposals. These are equally applicable to the ACMA implementations, and we would recommend them to the ACMA for internal use as well.

The Associations noted the need for the Spectrum Review principles of simplicity, flexibility, transparency, certainty and efficiency to underpin the legislative and regulatory framework. It was noted that, at that stage, there were concerns that not all of these principles had been fully translated into the draft legislation:

- **Simplicity** – The Bill has effectively simplified the licensing framework in many ways; however, there is still a lack of clarity and level of complexity that has been introduced in some areas where it could be avoided. For example, third party authorisations where the requirement to keep a register duplicates processes and adds an unnecessary regulatory burden. Overall, the framework is not yet clear or simple, or easy to understand, as required by this principle.
- **Flexibility** - Flexibility needs to be tempered with appropriate checks and balances so that investors have the requisite certainty and the regulator's discretion is appropriately fettered.
- **Transparency** - Discretionary powers must be balanced by an obligation to consult with stakeholders. For example, the associations strongly suggested that Ministerial Policy Statements should be legislative instruments rather than notifiable instruments to ensure that consultation is a legislative requirement and that transparency is achieved in practice. Further, transparency can be achieved by good consultation practices and while it may not be appropriate to include requirements for consultation in the legislation; industry takes the strong view that robust consultation processes must be built into the overall regulatory framework, including subordinate instruments and the ACMA's processes. See below for ACMA processes and engagement.
- **Certainty** – Licence holders need to have certainty and confidence in the regulatory framework. For example, Regulatory Undertakings by the regulator should not be revocable; rather, undertakings should only be able to be varied by agreement following consultation. Also, transition arrangements must ensure that there is no risk to licensees' existing property rights. In particular, greater certainty of the ACMA in the renewal and provision of licences is sought in the reform.
- **Efficiency** - Payment for access to spectrum must be aligned with ability to use the spectrum or the licence commencement date. Spectrum property rights are comparable to real property rights and payments for acquiring those assets and property rights should be treated similarly. This has been an issue under the current framework, and the associations suggested that the new framework should enable the ACMA to consult with stakeholders on when payments for spectrum access should occur as well as flexible arrangements for payment options.

Role of the FYSO

In its current incarnation the FYSO contains a Work Program for the forthcoming year. The Work Program is a fundamental obligation in the proposed legislation. A five-year outlook re-evaluated and reproduced every year is not considered to be an efficient use of the ACMA's resources. This should be a strategic longer-term document which can be re-cast when the need arises (i.e. when the strategic approach needs to be revisited). This has the benefit of releasing finite ACMA resources from management of the work program.

The more fluid aspects of the FYSO could be integrated into the annual work plan and, if necessary, the FYSO could be updated within the five-year period on an as-needed basis. The ACMA Work Program should be considered as the centrepiece of the spectrum management process and could have an introductory section to address some of the FYSO aspects, if necessary. This would also relieve the work program of the repetitive sections that form the basis of the FYSO.

We note that the Canadian Five-Year Spectrum Outlook¹ is revised every five years, whilst not discounting the need for annual work programs.

To place this activity in context, it is noted that the WRC is based on a four-year cycle. There is value in having stability in the strategic documents of the spectrum allocation process which should be reflected by way of the FYSO and the Radiocommunications Spectrum Plan.

Highest value and incremental value of a service

Whilst enhanced market activity is presented by the objective of highest value use of spectrum, together with greater use of sharing, sometimes these two objectives can be conflicting. Technology is not stagnant and sharing or mitigation scenarios continue to evolve. However, progressing to spectrum auctions for long term tenure may undermine the potential of technology. For larger investors, spectrum auctions are a useful tool, in promoting investment and new technologies. For smaller providers, auctions may not be seen to be as useful as these providers may require cheaper solutions with shorter horizons.

The 3.6 GHz band is a case in point. The ACMA Mobile Broadband Strategy (MBB) strategy seems to have set the outcomes for this band right from the beginning, whilst other regimes (e.g. Ofcom) have created practicable sharing scenarios with minor inconvenience to all stakeholders.

The SSWG notes that the ACMA performs economic studies to determine the highest value use of a band, but that to date this appears to have resulted in the reallocation of bands to larger investors and one or two services. The SSWG believes that, under certain scenarios, effective sharing through a multi user model, may return a higher value to the economy with only the slight burden of technical calculations leading to effective sharing. As an example (although not one supported by Telstra), the 26 GHz band is currently being studied in TG 5/1. Sharing looks promising, however a simple 'single user' spectrum licence would complicate this so the SSWG calls on the ACMA to develop a licence structure that supports IMT yet allows the FSS (E-S) to operate in accordance with the outcome of the sharing studies and without recourse to an IMT operator.

¹ Government of Canada, Spectrum management and telecommunications
<http://www.ic.gc.ca/eic/site/smt-gst.nsf/eng/home>

When making a decision to reallocate spectrum, the ACMA needs to weigh up both the incremental benefit of the potential new services and the benefit of existing services continuing to use the spectrum. In the event of spectrum being reallocated, the ACMA needs to explore opportunities for practical sharing arrangements which avoid or minimise the loss of economic benefit delivered by existing, planned or emerging services that would otherwise find themselves displaced.

The ACMA should always strive to achieve the highest overall economic value through more efficient sharing and deployment scenarios.

In the V-Band, as outlined in Page 51 of the FYSO, for individually licensed earth stations, sharing is a possibility due to mitigation techniques (the deployment of gateway-type earth stations will not be in as large numbers as user terminals, and site shielding is possible). Larger gateway type earth stations (on the order of 6 m or larger) tend to be located outside of urban areas, while smaller gateway type earth stations can be more numerous (on the order of 1.8 m) and can be located either in rural or urban areas. If in urban areas, they can be on rooftops with parapet walls or some other form of site shielding.

FSS needs access to the full 5 GHz for individually licensed earth stations and user terminals. User terminals are more ubiquitous, and sharing is more difficult (site shielding is not an option for thousands of earth stations). Where sharing is not possible, a separate band for the FSS is important. For example, 2 GHz could be created in each direction is advisable (48.2 to 50.2 / 40 to 42 GHz) so the FSS user has some spectrum to retreat to if sharing with IMT is difficult in a specific deployment scenario (e.g., Region 2 has HDFSS designation). Telstra notes that such a solution would also need to consider as long as that there is sufficient bandwidth available for viable IMT deployment.

Thus, sharing is the preferred model, but if sharing is not practical for user terminals in a specific urban area for some reason, the FSS does not have to move out, but instead can re-tune the affected earth stations to the core (48.2 to 50.2 / 40 to 42 GHz) spectrum.

The SSWG believes that the IMT Advance parameters submitted by Working Party 5D for mmWave bands are what should be used for studies. However, as these are the characteristics used in the sharing studies, for cases where sharing studies are positive, the IMT characteristics such as base station down tilt and emission limits, are key to the sharing results. These key parameters need to be included in the identification footnote by way of an ITU Resolution. The SSWG requests the ACMA to support such a Resolution.

The SSWG encourages the ACMA to focus on equitable access, more effective sharing and the value of the displaced services in the very large amount of spectrum already available to IMT and Mobile Broadband.

Transitional arrangements

We welcome the ACMA's thoughts on its approach to implementing the Spectrum Review. However, as we noted in our joint submission with AMTA to the Spectrum Review², it is difficult to provide definitive comments on any implementation approach ahead of having the opportunity to review a draft of the Transition and Consequential (T&C) Bill. As we noted in that submission, we strongly believe that the approach adopted for transition must ensure that the rights and conditions of existing licences must be maintained through the transition

² AMTA/CA submission to Spectrum Review. 28 July 2017. Section 6, Transitional Arrangements. http://www.commsalliance.com.au/_data/assets/pdf_file/0020/58610/AMTACA-Submission-Radcomms-Bill-2017.pdf

for the remaining term of the licence, and that the transition must not inhibit business-as-usual (BAU) activities.

Exclusivity vs spectrum sharing

In noting the AMTA/CA submission on the Spectrum review, when addressing greater use of spectrum sharing, the conundrum still exists between increasing capabilities of sharing becoming available through technology advances and the longevity of exclusive licensing through the auction process. This needs to be taken into account of when thinking about future allocations.

It is interesting to note that regulators such as the FCC, Ofcom, BNetzA, and the EC appear to put considerable effort into exploring practical spectrum sharing, coordination and cross-industry collaboration in pursuit of solutions for harmonised existence of services in a band. The importance of incumbent services continues to be recognised in a way which respects their commercial interests.

Consultation Questions

Q9. Do you agree that these reform objectives appropriately reflect the direction the ACMA should take in implementing the recommendations of the government's Spectrum Review?

The SSWG draws the ACMA's attention to the earlier AMTA/CA submission on the Spectrum review.

One item of note that we wish to highlight is section 44 of the draft Bill which requires the holder of a licence to keep a record of the person to whom they have provided an authorisation to operate a device under their licence. This provision could create a significant administrative burden for licensees. For example, mobile network operators authorise the use of thousands of mobile repeaters and it would be prohibitively expensive for operators to authorise and track all of the users of these devices. Similarly, we are concerned about the requirement in section 45 which requires the licence holder to notify every third party of any variation to the relevant licence. Variations to spectrum licences have occurred quite frequently in recent years, and some variations are highly technical in nature and have no relevance whatsoever for authorised third parties.

Q10. Are there any other reform objectives toward which the ACMA should direct its implementation activity?

In addition to the nine objectives the ACMA has outlined, The SSWG proposes that one further objective is required, to cover maintenance of existing rights for licensees. Examples for many aspects of the new regime, such as designated statements, regulatory undertakings and licence conditions are yet to be seen. In the absence of examples of these aspects, it is difficult to have confidence that the existing licensee rights will be maintained. As such, the SSWG proposes that an objective to maintain existing rights throughout the design of licences under the new regime would be a welcome step to instil confidence for licensees.

Finally, to reiterate, the timing of the reform is important in order for industry to engage effectivity.

Q11. What more information do stakeholders require about the ACMA's implementation engagement plan, and when, in order to plan their engagement with ACMA consultation activities?

As noted in the general comments earlier in this section, it is difficult to comment on the implementation approach ahead of having the opportunity to review a draft of the Transitional and Consequential (T&C) Bill, and the SSWG welcomes the opportunity to provide further comment once a copy of the draft T&C Bill is made available.

Another piece of information that would help stakeholders understand the transition, and hence the ACMA's implementation of the transition, is an initial program of work covering a high-level sequence of licences to be transitioned from the old regime to the new. Ideally, it would be good to have this initial program of work for the transition to review in conjunction with the review of the draft T&C Bill.

Part 2—Five-year spectrum outlook and 2017–18 spectrum work program

General comments

The SSWG believes that the FYSO is working. It appears to improve with each cycle and takes into account the feedback the ACMA receives, or at least provides a basis for understanding why feedback has not been implemented.

The presentation format of Key Projects for 2017-18 is particularly informative and helpful. The information presented in the document, however, it points to a consultation process which needs to be reviewed, as discussed in our response to Question 3.

A Technical Liaison Group

As noted in Table 5 (page 34), the creation of an ACMA technical liaison group (TLG) to take forward the 3.6 GHz decisions to develop a technical framework is a degree of close involvement with industry which should test the validity of this approach.

As a minor work program point, the initial investigation of 2 GHz (p 53) should include attendance at Working Party 4C (as well as 5D and AWG).

Specific spectrum work program items

ESIMs

The SSWG commends the ACMA on the priority and planned implementation of Business Operating Procedures for ESIMs in Ka band. We would also note that ESIMs operate in the band 27.5 GHz to 29.5 GHz and this spectrum will be needed to support these systems globally.

2 GHz Band

Regarding the 2 GHz band (1980 to 2010 and 2170 to 2200 MHz) that the ACMA proposes to retain at the initial investigation stage, the SSWG considers that the WP4C sharing studies on Agenda Item 9.1.1 are well advanced and that the draft conclusions in the working document towards a new PDNR M.[MSS & IMT – Advanced Sharing] should provide sufficient guidance to the ACMA for the finalisation of the replanning of this band. The SSWG proposes that this band should be advanced to the preliminary replanning stage, which should include the removal of Embargo 23.

Telstra considers that such the embargo should be retained until the preferred replanning options have been decided. It is also understood that Foxtel has a different view on this issue and is making its own submission.

Sharing with FSS user devices

The SSWG notes of particular interest that in the 27.5 to 29.5 GHz band and the higher mmWave bands, studies are indicating that sharing with FSS user devices may not always be possible. Identification of core spectrum, as identified earlier, would allow a re-tuning option for FSS in areas and circumstances where sharing was not possible.

In the bands outlined on page 51 of the FYSO careful attention needs to be given to the ability of FSS to offer true global seamless interconnectivity. Harmonisation of satellite bands provides economies of scale and allows, for example, ESIMs to operate from one Region to another.

Generally, in bands above about 20 GHz propagation and antenna system characteristics mean sharing between FSS and IMT is often possible, however it is important when formulating the technical frameworks for spectrum licensing that this is recognised and the flexibility is built in to the allocation mechanism to enable it.

Use of the 10.7-11.7 GHz band on a non-protected basis

Within the program of work identified within the FYSO, OneWeb proposes that the band 10.7 to 11.7 GHz should be open for use by the FSS satellite applications on a non-protected basis. There is precedence in many countries, e.g. Europe, where the European regulatory decisions allow such use on a non-protected basis, and thus allow for exemption from licensing and free circulation of satellite equipment. We reference for your consideration the newly approved ECC Decision (17)043 and the ETSI Harmonised Standard EN 303 9804. Documentation is available on sharing studies performed by the ECC on non-GSO equipment vis-à-vis other services, such as ECC Report 271⁵.

Use of the Ku-band by non-GSO ESIMs

Within the program of work identified within the proposed FYSO, emphasis is given to advancing the potential of ESIMs in Ku-band. Our members this application as very attractive and fully supports this program item and are willing to contribute to ACMA considerations and analysis in the coming year. In particular, the SSWG emphasises that this work programme should be expanded to include non-GSO ESIMs because these can be agreed on a national basis and also because non-GSO equipment does not cause any interference to other services (see ETSI Harmonised Standard 303980 and technical report ECC Report 271, as given in the footnotes).

Coordination of Earth Stations with other radiocommunications

The SSWG is well aware of the potential interference situation arising from other radiocommunications services especially point-to-point or point-to-multi-point fixed links into receiving Earth stations. The SSWG notes that on Page 28 of the FYSO, the ACMA is currently considering expanding that work to consider other frequency bands and other earth station coordination issues. The SSWG members look forward to working with the ACMA on this matter.

Consideration of extending L-band mobile satellite services

The SSWG notes that the FYSO on page 28 indicates that the ACMA should consider whether arrangements in adjacent spectrum should support extended L band operations for MSS in the 1518 to 1525 MHz and 1668 to 1675 MHz frequency bands. While MSS operators are looking to extend MSS services to Australia in those bands in the period beyond 2020, there is continuing discussion within ITU-R in regard to the size and positioning of any necessary guard-band around the 1518 MHz boundary. SSWG supports making the extended L-band

³ <http://test.ecodocdb.dk/docdb/download/89ca1a89-b33c/ECCDEC1704.pdf>

⁴ http://www.etsi.org/deliver/etsi_en/303900_303999/303980/01.01.00_20/en_303980v010100a.pdf

⁵ [https://cept.org/files/9522/Draft%20ECC%20Report%20271_SE\(17\)097A08.docx](https://cept.org/files/9522/Draft%20ECC%20Report%20271_SE(17)097A08.docx)

allocations available for MSS in Australia. To the extent possible, the use of these frequency bands by terrestrial services should be minimised, so as to avoid sharing issues with MSS in the future.

Improved Licensing of the 13.75 to 14.0 GHz Frequency Band for FSS

The SSWG wishes to draw the ACMA's attention to an issue raised in the past by a number of satellite operators and industry bodies concerning a simpler licensing regime for this frequency band. The SSWG is disappointed that the current ACMA work program considered that it be a 'long term low priority issue'. The SSWG reminds the ACMA that a number of satellites cover Australia in the 13.75 to 14.0 GHz frequency band today, and that the lack of a simple licensing regime has inhibited the development of this band for VSAT-type services.

Spectrum Pricing

The demand for connectivity has placed tremendous strain on this spectrum, particularly for ubiquitously deployed earth stations, aeronautical satellite services and other in-motion platforms which now have increasing market demand for the use of this entire spectrum. Further, non-geostationary satellite systems (NGSO) such as OneWeb which will start deployment from 2018 and begin initial services in 2019, will provide backhaul cellular connectivity, public and enterprise solutions, connectivity to rural and remote areas and services to in-motion platforms (including aero, maritime and land vehicular) across the entire Ku band. These various satellite systems will contribute to provide broadband solutions which will help bridge the digital divide and support the economy and the Government (including for Emergency/Safety Services) in all parts of Australia.

The SSWG is very appreciative of the recent reductions in taxation in Ka-band by the ACMA. Although the full reduction, sought by industry, of 50% in high density areas was not achieved because of uncertainty in market developments, we believe that the time should arrive soon to re-evaluate the full discount.

Many businesses and institutions rely on satellite in the Ku and Ka bands for connectivity and these represent important markets for future satellite communications in Australia. Today's core business comes from the retail / distribution, banking, energy (Oil & Gas), cellular backhaul / trunking (3G-4G and future 5G sites) and corporate sectors. Government, civil security and military users also are important customers with expected usage growth over the next 8 to 10 years.

Equally, the taxation in Ku-band now stands out as relatively higher than should be necessary, all things being equal compared with Ka-band. The SSWG would therefore request that the ACMA initiate a Ku-band spectrum price review in the current program.

Certain frequency bands allocated to space services are prescribed in the 'Communication with Space Object (CSO)' class licence. These frequency bands are normally not shared with terrestrial services. Whilst the CSO class licence provides access to the 'space' and 'space receive' types of apparatus licences, there are situations where it is more appropriate to use 'Earth' and/or 'Earth Receive' licences for Earth Stations in those bands. In that case however, the licence fees are determined depending on whether the Earth Station is located in either the High, Medium, Low or remote area. These fees vary significantly. Whilst such a difference is accepted where the band is shared with terrestrial services and there is therefore a degree of 'spectrum denial' associated with each earth station, this is not the case for the CSO class licenced bands. It would therefore seem reasonable that 'Earth'

and/or 'Earth Receive' licences for Earth stations in the CSO class licenced bands are charged at a flat rate rather than the current location dependent rate.

General spectrum work program items

Compensation for re-location

The satellite industry is counting on continued access to the 3600 MHz in future satellite deployments due to continued demand for satellite services. In particular, if the band is opened to IMT services, it would be very difficult and costly for satellite earth stations to relocate to new bands or alternative means of delivery. One option to enable such services to continue operating is to implement adequate measures to protect incumbent services and ensure their commitment and quality of services to their customers continues unimpeded to guarantee long term stability within this band for satellite operators.

Following the 3.6 GHz Review and Outcomes, it has become apparent that a major piece of policy missing in the Australian framework is the subject of compensation for relocation following reallocation decisions.

Unlike other jurisdictions such as within the CEPT and North America, Australia has yet to successfully develop an approach to compensation for re-allocation and re-location. Historically this has been avoided by the ACMA, with the justification that this is outside the scope of the ACMA's responsibilities.

However, it is not outside the mandate of the Minister and the attention of the Department. In the recent legislative development series of papers, DOCA has given its attention to the case for Government-owned spectrum compensation where re-allocation and re-location is involved. Application to the commercial sector may require specific regulation, such as was the case with channel re-stacking in the broadcasting industry and in the data retention provisions of the legislation, both of which received compensatory measures (see examples in the next section).

Given that the future program of bands for re-consideration for Mobile Broadband is looking quite extensive, re-location is set to be a growing issue. If a suitable solution to compensation is found going forward, then the whole equation of spectrum management will be significantly affected. In addition, it would be expected that industry incumbents would be much more convinced and cooperative with the process where relocation is required.

Whilst relocation is the result of implementation of an economic policy favoured by the regulator, whilst this is credible it still lacks a genuinely balanced approach to competing interests and does not satisfy a need for sharing of spectrum amongst different services.

Examples of compensation in Australia

The SSWG notes that a strong precedent has been set for compensation for spectrum clearance. The National and commercial FTA broadcasters were allocated in the 2012-2013 federal budget a sum of \$143.2M over five years 'to support the process of restacking of television broadcasting services to new channels to release a digital dividend of 700 MHz spectrum'. A further \$53.5M was allocated over four years 'to assist with the purchase and deployment of electronic news gathering equipment to enable them to operate in alternative spectrum bands to clear for release the 2.5 GHz spectrum band. Not only were these budget allocations made to compensate for the equipment required for the digital dividend band clearance, but also a broadcast licence fee rebate was made to further compensate the broadcasters.

The SSWG recommends that the ACMA should give serious thought to compensation and the benefits which this would bring to its strategy of implementation in MBB. High level interaction with the Department and the Minister would be most appropriate.

The SSWG has been closely involved previously in issues concerning regulatory burden and appropriate compensation from Government to industry. In the case of the Government's mandatory two-year data retention regime, for example, the Government provided \$128 million in industry grants to partially compensate carriage service providers for the cost of compliance.

We are interested, therefore, in understanding what the ACMA sees as the principles around potential requirements for compensation for re-allocation and re-location – and would welcome your advice on this.

Reflections on the proposed auction process

Considering the position of satellite incumbents in the 3.6 GHz process, it would seem a reasonable consideration to define a sub-lot or sub-lots of the auction offering where those sub-lots correspond to zones around the satellite incumbent facilities. In this way satellite incumbents would also be able to participate in the auction process. It is noted that Telstra and Optus do not support the proposal to introduce sub-lots.

Clearly, the full cost of re-location would determine the amount which a satellite incumbent would likely be prepared to bid. And with regard to the interests of other new MBB services, commercial negotiation would be available, except that the onus in this case is reversed. This would seem to satisfy the ACMA objectives of spectrum being applied to the highest value use, whilst giving industry the opportunity to negotiate.

The SSWG also considers that a different auction methodology might both return the true highest value use of the band while compensating incumbents that are forced to move. Whilst auction methodology has to an extent changed from time to time, it is desirable that the ACMA gives consideration to the interest of incumbents in future auction processes and applies the methodology on a consistent basis.

Attachment 1

Satellite Services Working Group membership

Australian Private Networks (APN)
Coutts Communications
Foxtel
FreeTV
Intelsat
Inmarsat
Ipstar
Nbn
OneWeb
Omnispace
Optus
Orion Satellite Systems
Pivotel Satellite
SES
Skybridge
Space Systems/Loral
Speedcast
Step Electronics
Telstra
ViaSat



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