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COMMUNICATIONS ALLIANCE

SATELLITE SERVICES WORKING GROUP

SUBMISSION

to the

Australian Competition and Consumer Commission's (ACCC)

Allocation limits advice for 3.4–4.0 GHz band allocation in remote areas

Consultation Paper

28 September 2021

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EXECUTIVE SUMMARY

The Communications Alliance Satellite Services Working Group (SSWG) welcomes the opportunity to provide comments to the ACCC *Allocation limits advice for 3.4–4.0 GHz band allocation in remote areas* Consultation Paper.

The SSWG wishes to highlight the needs of the fixed satellite services (FSS) who have a continuing and growing need to access the 3.4 – 4.0 GHz spectrum band in remote areas of Australia.

The SSWG suggests there are issues of competition to be considered between local area wireless broadband (LA WBB) applicants and existing FSS providers in the remote areas related to ACCC's criterion of promoting the long-term interests of end-users (LTIE).

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.

1. General comment

While the Australian Communications and Media Authority's (ACMA) letter to the ACCC focusses primary on the potential need for allocation limits for local area wireless broadband (LA WBB) planning to enter the 3.4 – 4.0 GHz band, this response is to highlight the needs of the fixed satellite services (FSS) who have a continuing and growing need to access this same spectrum in the 3.4 – 4.0 GHz band in remote areas of Australia.

We suggest there are issues of competition to be considered between LA WBB applicants and existing FSS providers in the remote areas related to ACCC's criterion of promoting the long-term interests of end-users (LTIE).

2. SSWG's response to specific ACCC's questions

The SSWG's responses to the questions specified in the consultation paper are as follows.

1. What are the likely intended uses of 3.4–4.0 GHz band spectrum in remote Australia?

A number of SSWG members presently provide C-band satellite services for mining, offshore oil and gas, maritime and disaster response. Remote C-band Earth Stations are also used to receive the feeder downlinks of mobile satellite service (MSS) satellites, used by commercial aircraft in remote areas of Australia through the aeronautical mobile satellite (route) service (AMS(R)S), and by shipping in an around Australia for GMDSS and other maritime communications. All of these uses are expected to increase as these industries continue to grow and develop.

The unique propagation characteristics of C-band satellite systems (due mainly to their lower operating frequency range compared to Ku and Ka band systems) enables reliable backhaul telecommunications services in high rainfall and oceanic areas of Australia and its territories. In remote areas, especially in low population areas, terrestrial backhaul is non-existent for economic reasons and satellite backhaul is the only economic solution.

2. If you intend to acquire the spectrum to deploy wireless services:

(a) In what geographic areas do you intend to use the spectrum?

The C-band satellite services for mining, offshore oil and gas, maritime and disaster response are in remote areas, local to where these services are required. Due to the transient nature of many of these operations the locations can change.

A number of SSWG members also operate C-band satellite services from Earth Stations in the remote earth station protection zone (ESPZ) at Mingenew, WA approx. 320 kms NNE of Perth.

Some SSWG members are very interested in supporting a new ESPZ for C-band satellite earth stations located in remote northern SA to support satellite coverage requirements not presently available in existing Earth Station Protection Zones (ESPZs). Such a location would make use of existing national fibre links.

(b) Do you expect your intended use is likely to change in the future? If so, please provide examples of how that might change.

If the proposed ESPZ for C-band satellite earth stations in remote northern SA was successful it would support satellite coverage requirements not presently available in existing ESPZs with higher availability standards due to the duplicated fibre link.

(c) What do you consider is the optimal allocation of 3.4–4.0 GHz spectrum to support your likely intended uses? What is the minimum allocation necessary?

The SSWG members would require the new ESPZ to support the satellite downlink frequency range 3400 - 4200 MHz (among other satellite frequencies not under consideration in this paper).

(d) Is your demand for the spectrum for current use, or more likely to arise in the future?

All of the existing FSS uses are expected to increase as these industries continue to grow and develop.

3. Is there likely to be demand for the spectrum from entities that do not propose to use the spectrum but rather, intend to provide access to the spectrum to other users? If so, what is the extent of demand from these entities and in what geographic areas?

The SSWG members, their partners and other satellite operators plan to continue to use C-band satellite services for mining, offshore oil and gas, maritime and disaster response.

Remote C-band Earth Stations are also used to receive the feeder downlinks of mobile satellite service (MSS) satellites, used by commercial aircraft in remote areas of Australia through the aeronautical mobile satellite (route) service (AMS(R)S), and by shipping in an around Australia for GMDSS and other maritime communications.

4. How is demand likely to be impacted by the:

(a) Apparatus licence arrangement

The geographic locations of mining and offshore oil and gas sites is determined by exploration discoveries and therefore by nature is highly unpredictable.

The ACMA is proposing that Wireless Broadband (WBB) services will be licensed in remote areas via Area-Wide Licences (AWLs). AWLs authorise the operation of multiple transmitters in a specified geographic area and frequency range. In remote areas the geographic size of these licence will be significant, and for significant durations, further precluding the operation of C-band satellite receiver services for uses already mentioned, compared to the current apparatus licensing arrangements.

C-band satellite receiver services have highly sensitive satellite receiving systems. This means that C-band satellite earth stations need to be located at a significant distances from WBB services and with significant frequency separations to avoid receiving interference. Unlike WBB services that can more easily change frequency to avoid interference, changes to satellite frequencies are more difficult (often not possible) due to contractual obligations to operate on set frequencies.

The ACMA's proposed remote geographic areas includes significant oceanic/sea areas. These areas are unlikely to be used by the WBB licensees but would preclude offshore oil and gas and maritime satellite users from acquiring licences in the future. This could create spectrum denial from legitimate users.

(b) Likely format of the administrative assignment process

See answer to Q.4(a).

(c) Licence duration

Longer licence durations for AWLs for WBB will further preclude access to licences for C-band satellite services especially for mining, offshore oil and gas, due to transient nature of many of these operations. The licence duration of the WBB licences should be reduced if there is no WBB device operating in the licence area.

5. What are the relevant downstream markets that are likely to be impacted by the 3.4–4.0 GHz band allocation in remote areas? Please clearly define the geographic dimensions of these markets, the providers of services and the end-users in these markets.

The C-band TT&C links of some SSWG members support MSS satellites operation in L-band which support the critical communication services and future narrowband services such as Internet of Things (IoT) in remote areas, while other members link the C with the Ku band to provide Digital Terrestrial Television (DTT) services.

Critical communication services are used by commercial aircraft in remote areas of Australia through the aeronautical mobile satellite (route) service (AMS(R)S). Internet of Things (IoT) supports a broad range of industries to enable tracking, monitoring and managing assets, ensuring the safety of their workers, and to improve remote operations.

6. Are there any relevant markets in which the services could be provided by different types of network deployment?

The unique propagation characteristics of C-band satellite systems (due mainly to their lower operating frequency range compared to Ku and Ka band systems) enables reliable backhaul telecommunications services in high rainfall and oceanic areas of Australia and its territories. In remote areas, especially in low population areas, terrestrial backhaul is non-existent for economic reasons and satellite backhaul is the only economic solution.

7. Are there any relevant markets which consist of a single, or very small numbers of, end-user(s)?

C-band satellite services for mining, offshore oil and gas and maritime, often service markets with single or small numbers of users.

8. Are there likely to be future relevant markets that have not been identified?

Internet of Things (IoT) and RLAN services via satellite is a developing market. Again, C-band satellite services directly or via feeder links enable these services to be provided in an economical way.

9. Do you have any views on the state of competition in the relevant downstream markets discussed by the ACCC?

Access to C-band satellite services, particularly in high rainfall areas is an enabler to profitable and safe operations in the mining and related industries. If C-band satellite services cannot be licensed in these locations the downstream industries cannot operate.

10. Are there any other markets that you consider relevant? How would the allocation of spectrum in the 3.4–4.0 GHz band in remote areas impact competition and investment in these markets?

See answer to Q.9.

11. To what extent, if any, would licence duration impact competition and investment in these markets?

Longer licence durations for AWLs for WBB would further preclude access to licences for C-band satellite services especially for mining.

12. For an industrial end-user in a remote area, are the deployment models substitutable? That is, would wide area wireless broadband be substitutable for local area wireless broadband? Would these services be substitutable for private LTE, or 5G networks?

For reasons given in Q.6, often C-band satellite systems are the only telecommunications services that enables reliable and economic backhaul services.

13. Do you consider that substitutable spectrum exists for the 3.4–4.0 GHz band in remote areas to enable the provision of services in the relevant downstream markets? If so, what spectrum do you consider to be a substitute?

In remote areas, due to the low population density and the large geographical area, the 3.7 - 4.0 GHz band is not required due to its limited coverage as a terrestrial service. WBB services in remote areas can use other IMT bands suitable for coverage including 700, 850, 900, 1800, 2100, 2300 and 2600 MHz. These frequencies provide better propagation characteristics for long distance communications required for low population densities. In remote areas, due to the low population density and the large geographical area, the 3.4 - 3.7 GHz band alone is not sufficient due to its limited coverage as a terrestrial service unless used in aggregation with the low-frequency bands such as the 700, 850 MHz to improve the range and performance of this band for WBB downlink.

14. Does the availability of substitutable spectrum differ within the remote area? Are there areas within the remote area, where no substitutable spectrum exists?

See answer to Q.13.

15. Should the ACCC take into account the availability of spectrum in the 1800 MHz band in remote areas when assessing the need for allocation limits? If so, how?

See answer to Q.13.

16. Do you consider that there is a risk that a single party may seek to acquire the entire, or majority, of spectrum available in any given areas? Please provide reasons and evidence for your views.

A number of SSWG members are concerned that mobile network operators, wireless internet service providers and other WBB operators could acquire the majority of the spectrum, excluding satellite operators, service providers and industries such as mining, offshore oil and gas, from accessing any or sufficient spectrum.

A number of SSWG members have already faced this regulatory disruption where they are no longer able to operate in the band 3600 - 3700 MHz.

The ACMA already has in place an embargo on issuing new licences for satellite earth stations Australia-wide (Embargo 78) and is advising that existing licences will not automatically be renewed after the end of September 2022. This is already constraining use of the spectrum for satellite earth stations in order for areas to be available for WBB operators. This could be interpreted as favouring one service over another and causing regulatory uncertainty.

17. Do you think that allocation limits are necessary for the 3.4–4.0 GHz band allocation in remote areas? Relevantly, would allocation limits promote competition and encourage investment in the relevant markets?

Refer to Q.13 and 16. The SSWG would support an allocation limit on WBB licences to allow the continued licensing of existing and new C-band satellite services using apparatus licences in suburban and areas inaccessible by terrestrial technology.

18. If so, what do you think the appropriate allocation limits should be? Do you think different allocation limits should apply to different geographic areas within the remote area?

The current apparatus licence arrangements should continue and not allow AWLs for WBB in remote areas.

19. How long do you think any allocation limits should apply for?

The length of the licence durations.

20. Are there other factors that the ACCC should consider in assessing the possible allocation limits to apply?

No response to Q.20.

3. Other comments

The SSWG would disagree with the ACMA's view that 'the 3.4 – 4.0 GHz band … has been internationally harmonised for use by 4G and 5G services'. 4G and 5G services operate in mobile services bands. In ITU-R Region 1 (Europe, Africa, Russia, Mongolia, and the Middle East) the mobile service is a secondary allocation behind the primary Fixed Satellite Service and Fixed Service allocations.

The ACMA is keen for C-band FSS earth stations to move out of the metro areas to allow WBB to operate in the 3.4 - 4.0 GHz band but is planning to allocate the 3.4 - 4.0 GHz band in remote areas to WBB via AWL which is not compatible with licensing of C-band FSS earth stations. The SSWG supports the view that it is 'timely for the ACCC to also begin general consideration of the planned allocations across the 3.4 GHz and 3.7 – 4.0 GHz bands (in regional and metropolitan areas) given the interrelated nature of these processes.'

We recognise, of course, that demand for mobile data is rising, and mobile operators in Australia, as elsewhere, have a growing need for spectrum. Further, we recognise that they need additional spectrum now to manage the transition from 4G to 5G. Our point, however, is that the current available spectrum will be more than enough to meet capacity requirements through the medium term. As we explain above, beyond this point, there are alternative ways that MNOs can meet this demand without simply taking more and more spectrum from key services like satellite.

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