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Reference: Proposal to remake the Public Safety Emergency Response Class Licence.

The Australian Radio Communications Industry Association (ARCIA) is proud to submit this response to the proposal as outlined in the ACMA paper of June 2023, as we believe that we can make a meaningful contribution to the discussion. We have knowledge both from the perspective of our involvement in the public safety communications debates over many years, plus as a representative organisation with members as vendors of equipment, as well as having many members who are employed in the sector or are volunteers within the public safety sector.

Our involvement in the discussions on wireless broadband and mobile data goes back to 2013 when we were involved in some of the very early discussions on Public Safety Mobile Broadband (PSMB) and has continued in many aspects since then. Amongst the more important areas of involvement have been in bringing the international perspectives into the local discussions through Comms Connect conferences, as well as our involvement in multiple international forums where public safety communications are experiencing an ongoing evolution. We strongly believe that our local Public Safety Agencies (PSA) should have a high degree of control over their communications requirements and be able to leverage technology from other international jurisdictions.

When we look at some of the areas covered by the present discussion, it is important to recognise that although the Australian Government is still working towards the implementation of a viable PSMB system, the spectrum under discussion in this instance has the potential to be a critical component of the overall public safety communications ecosystem. It is therefore important that any decisions regarding the renewal of the Class Licence ensures that this spectrum segment remains as dedicated for use by the PSA community as an ad-hoc communications support facility for localised urgent requirements, perhaps even for enhancing in-building communications facilities. The spectrum should NOT be permitted to become part of any dedicated network that is a permanent or fixed installation as that would run counter to the original concept of the spectrum being made available to provide high level localised support for critical incidents.

With this in mind, we strongly support the existing requirements for the spectrum to be managed by the emergency service organisations directly, and where authority is given for other Government agencies or private organisations to act on behalf of a PSA, that it requires renewal of authorisation after six months. Along the same lines, we again strongly support the existing conditions of any fixed station requiring review of applicability after six months and if necessary, converting to full licensing rather than continue to operate under the class licence. Both of these factors will help to ensure that



spectrum remains available for PSA innovation and the implementation of new technologies that will improve the operations of the emergency operations. It would be a shame to see this spectrum absorbed into any larger communications network or planning and so limit the ability for PSA operations to be innovative and flexible in developing their response to critical incidents.

As we look at how technology has developed in the critical communications sector over the past ten years, we now see that there is a merging of technologies and that the benefits to emergency organisations are advancing in large steps. As an example, the development of mesh networking with Wi-Fi style services, and these being interconnected with other communications platforms has meant that many previous communications difficulties have been overcome. Perhaps the best example of this has been the development of the Vehicle-as a-Node (VaaN), whereby combining the onboard radio devices, wireless broadband through mobile communications networks, localised Wi-Fi devices on the vehicle and even the potential for a satellite terminal. We suddenly have a communications bubble that will cover almost all needs from one simple sub-network.

If we then look at some of the technology that will become available both locally and internationally within the 4.9 GHz spectrum block, we can see how many of these future developments will add even more to the VaaN concept and further improve both the operational effectiveness and safety of our first responders. In addition, these factors will also help improve the outcomes from a level of public safety for the community. The ability for the 4.9 GHz spectrum to be available for these exciting developments means that it should remain as technologically flexible as possible and not be encumbered with long term fixed network installations that would restrict both availability as well as flexibility.

With regard to the questions posed in the discussion paper, we offer the following information -

Question 1

Is the class licence still needed? Why or why not?

We believe that the licence is still needed, as it gives the PSA sector a chance to experiment with technology and work towards improving any communications problems they might find. In addition, it will give an opportunity for better implementation of technology to monitor the conditions of first responders at critical incidents with bio-mechanical and body-worn monitoring systems, much of which will be local area monitoring rather than a wide area requirement.

Question 2

Is the class licence operating effectively and efficiently? Why or why not?

From the information we have observed with several different applications, we believe the licence is working and, in many ways, as it was originally envisaged. There have been instances of blending technology to address operational issues from both ACT Bushfire Service and NSW Fire & Rescue that we have seen. We also believe that WA Police are presently exploring some opportunities to utilise the 4.9 GHz spectrum for improved safety for their officers. There is no doubt that individual agencies will be able to offer many more instances than those we have mentioned.



Question 3

How are PSBs currently using the class licence? Are the current authorised services fit-for-purpose?

Although we have mentioned a couple of examples above, we do not have any specific examples, but we do know that some suppliers are looking at providing systems for consideration by agencies.

We would not be in favour of the allocation of Area-Wide Licences (AWL) within this band as in our opinion this would potentially compromise the flexibility of PSA's being able to move equipment freely around to suit critical incident situations. Where applicable, it may be possible to permit allocation of apparatus licences where they do not constitute a significant portion of the spectrum plus any such licences should contain a proviso that the equipment may be required to be de-activated in the event of any critical incident or emergency situation within the area.

Regarding interference issues that may arise out of conflict between equipment operating on an apparatus licence and class licenced equipment, the underlying precept that the band is primarily for class licence operation should then mean that any equipment under an apparatus licence within that band should also be operated on the same 'no interference – no protection' mode. It would be difficult to identify and control interference when most users are operating under the class licence format.

Question 4

Is the current class licensing model fit-for-purpose? Why or why not? How would any interference protection or hybrid class / apparatus licensing arrangements work?

From our understanding of the public safety sector, we believe that the class licence format is working well, it gives flexibility for new technology to be developed, plus it opens the options for blended technology solutions to long-standing communications issues. With any form of class licencing there is always going to be a risk of interference, however the limited power levels and restrictions on fixed stations will lessen the risk of serious problems. Even under critical incident situations, utilising the VaaN approach for the spectrum devices will mean that in many instances moving the host vehicle a short distance will most likely ameliorate the interference problem, perhaps not completely removing it but certainly reducing to potentially workable levels. Under the class licence format that is generally accepted as the best form of interference protection, and we believe that without expensive filtering this option will remain as most preferred solution.

In addition to the above recommendation, the fact that fixed stations should be generally discouraged for anything other than temporary solutions will mean that sections of the band will not be subject to restrictive operating conditions. Fixed stations are generally located in areas that will give optimum performance, so therefore the possibility of interference becomes much higher in proximity to fixed stations. We would strongly support the concept outlined in the proposal that fixed stations (either P2P or WBB base stations) should be subject to review and re-evaluation at no more than six-monthly periods. If the demand is still there and will be for more than a consecutive six-month period, then the service should be licensed under a standard apparatus licence arrangement, and the frequencies permitted should be selected to have the minimal impact on other systems that may operate in the same spectrum band.



Question 5

Should specific provisions for cellular mobile technologies be included in the class licence? Why or why not?

This is one of the changes that should be included, there are always ongoing developments within the WBB product offerings, and this is one of the technologies that can help PSA operations and critical incident response solutions. However, we would caution the ACMA about putting together a band plan based on the 3GPP formats to cover the band as one of the major benefits of the 4.9 GHz spectrum is that it can be used for any format under the class licence. Creating a 3GPP band format might encourage a greater dependence on WBB and in so doing rule out the flexibility to explore other alternatives.

Question 6

Are the proposed emission mask, power limit and EIRP limit for cellular mobile BS appropriate? Does emission mask P, in conjunction with other proposed measures, sufficiently mitigate the risk of adjacent channel interference to other devices authorised under the class licence?

Other than cautioning the ACMA regarding the concerns regarding fixed stations we are not able to add meaningful information to answer this question.

Question 7

Are the proposed emission mask, power limit and EIRP limit for cellular mobile user equipment appropriate?

Refer to the answer to question 6 above.

Question 8

Are the emission masks, power limits and EIRP limits for existing services appropriate?

Refer to the answer to question 6 above.

Question 9

Do the technical parameters proposed in the draft class licence restrict the use of any other technologies required by PSBs?

At this point in time we do not believe that to be the case, however, as this portion of the spectrum is still being explored both locally and internationally, there is a strong likelihood of new technologies becoming available in the future. The present format with minimal restrictions and relatively simple guidelines would seem to be the best solution to ensure that future options could be explored. Setting up a band plan based on existing formats might limit future options, something that could be to the detriment of the PSA organisations.



Question 10

Do the current definitions of ‘public safety bodies’ and ‘public safety or emergency response function’ remain fit-for-purpose? Do the authorisation arrangements for other bodies remain appropriate? Why or why not?

We believe so and would caution the ACMA about making changes or reducing the requirements. Although modern business practices in many jurisdictions lead to them often employing outside bodies to manage PSA technology, we strongly believe that the actual agencies should be the ultimate responsible party. Delegation of management rights is suitable for maintenance and planning purposes; however, the actual PSA must be the authorising party and should be the ones to review and renew authorisations.

We would caution even giving carte blanche approval to other Government agencies to be responsible for making decisions regarding operational communications and safety as may seem to be the case in some Australian jurisdictions at present. The ultimate responsibility for the safety of our first responders rests with the actual PSA body, therefore they should retain the responsibility to oversee any authorisations, this would certainly be the basis in any Coronial inquest. In order to maintain continuity of the supervisory role, the authorisation of external agencies/organisations must be subject to renewal on a regular basis, we believe that six months is a reasonable period. This would prevent any external agency/organisation from undertaking planning or implementation of technology or communications system changes without the knowledge and approval of all of the relevant Public Safety Agencies involved.

We believe that the 4.9 GHz spectrum operating under a class licence is different to other managed communication services and must be managed accordingly, with separate authorisation requirements outside of the usual financial advantages gained from public/private partnerships.

Question 11

Is the 6-month limit for fixed point-to-point services appropriate? Why or why not? Does the 6-month limit prevent deployments of networks aligned with the purpose of the class licence?

We believe that as this portion of the spectrum was envisaged as being for critical incidents and ad-hoc operations, the time limit for fixed services is a realistic situation. Any situation where it is felt that the six-month period is restrictive should be evaluated with regard to the options that might be available, the location of the service and any restrictions it may place on critical incident communications should such happen close by, and the overall benefits that the service is providing to the emergency services in the area. We would suggest that in some instances the result of an evaluation like this might prove that the service should remain, then it could be licensed as an apparatus licensed service and perhaps with a condition of operation being that it may need to be de-activated for a short period during particular emergency incidents.

Question 12

Which channel plan should be adopted in the class licence? Why?

As indicated above, we would suggest that whatever channel plan is selected it should be flexible enough to enable any format of equipment to be accommodated (within reason), but that it should not form restrictions that would favour any one format over or to the exclusion of others.



Question 13

Are the current interference protection measures for radio astronomy sites fit-for-purpose? Are the proposed protection measures from cellular mobile BS and user equipment appropriate?

We are not able to offer meaningful response to this question, we defer to others with better knowledge.

In preparing our response to this proposal we have sought input from our members who are directly involved in Public Safety Organisations, as well as our equipment supply members. One item that was raised by one of the local companies who provide solutions to PSA communications issues, was the fact that as an international allocation for public safety usage, access to this band with very limited technology restrictions means that they can develop and provide communications solutions for the international markets. This is an opportunity for Australian industry to compete in a world-wide market, a great outcome and should be considered as a side benefit from renewing the present Class Licence.

We believe that the information within this response presents a balanced view of the options, and we commend it to your earnest consideration. As always, we are happy to explain our position and discuss the points raised at your convenience.

Yours sincerely,

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