

19th July 2023



NSW Police Force
www.police.nsw.gov.au

The Manager
Spectrum Planning Section
Australian Communications and Media Authority
Online Submission

Dear Sir,

Submission for “Proposal to remake the Public Safety and Emergency Response Class Licence” - Consultation paper, June 2023.

NSW Police Force (NSWPF) welcomes the opportunity to provide feedback on the Australian Communications and Media Authority (ACMA) consultation paper on their Proposal to remake the Public Safety and Emergency Response (PSER) Class Licence.

NSWPF uses a wide range of radio communications technologies to support its frontline police officers' operational communications and situational awareness requirements. NSWPF is the major NSW State Government agency currently using the PSER Class Licence in New South Wales and is pleased to provide responses for following specific questions raised in the above consultation paper.

Question 1: Is the class licence needed? Why or why not?

Question 2: Is the class licence operating effectively and efficiently? Why or why not?

Question 3: How are Public Safety Bodies (PSBs) currently using the class licence? Are the current authorised services fit-for-purpose?

NSWPF currently uses the PSER Class Licence for wideband air to ground wireless communication (aircraft to fixed and portable ground receiver stations) and fixed point to point and mesh networks services to support major events and critical incident responses.

NSWPF uses 5 MHz channels within the 4940 MHz to 4990 MHz band for airborne video surveillance to support the investigation of major crime, for emergency management and dignitary protection operations. At least one channel will be used for 2-3 hours daily. These channels may be used for much longer periods to support police operations and for dignitary protection. The current fixed receiver sites allow NSWPF aircrafts to operate across the Greater Metropolitan Area and west to Bathurst. NSWPF aircrafts do operate across the state and temporary receive sites may be set up in rural NSW if operationally necessary. The demand for live video streaming police operations is increasing and NSWPF is looking to expand its coverage area.

Various units within NSWPF use the 4.9 GHz band for point-to-point fixed links and MANET mesh networks. While these are irregularly deployed, they are designed to stand up ad hoc networks rapidly in the event of a serious incident to support police operations. NSWPF also uses these fixed links for policing during major events such as V8 Super Car events across the state. These systems are used jointly with other law enforcement agencies/units within the country. NSWPF has these systems installed in the tactical armoured vehicles to immediately distribute the video products available.

Wireless Network Group

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Therefore, due to its ad hoc and rapid deployment requirements, NSWPF strongly supports the continuation of PSER Class Licence. NSWPF further believes that the class licence is currently used efficiently and effectively. With the increasing demand for live videos among PSBs including NSWPF, utilisation of this class licence band will continue to increase within next few years. Current authorised services are fit-for-purpose and support the intended policy objectives.

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?

Operation in the band from 4950 MHz to 4990 MHz within NSW and the ACT is significantly restricted by the operational limitations around the 4 radio astronomy sites within NSW and the ACT. A better operational plan for PSBs should be developed to allow the use of this band around the radio astronomy sites (given that two of the radio astronomy sites at Tidbinbilla and Siding Springs have been impacted by bush fires in recent years).

NSWPF supports maintaining the current emission masks and output power restrictions for protection from interference. However, NSWPF does not support a hybrid class/apparatus licensing model for this band. Any introduction of apparatus licence will hinder the intended objective of this band which is ad hoc and irregular use as part of PSBs public safety and emergency response.

Question 5. Should specific provisions for cellular mobile technologies be included in the class licence? Why or why not?

NSWPF understands the importance of cellular mobile technology including 5G for PSBs. However, at present, cellular technologies are yet to demonstrate that they can offer a high-quality service better than the systems PSBs currently operate in this band. NSWPF does not want a situation where there is a significant impact on performance because of interference. Reliability, quick deployment, and guaranteed throughput of communications solutions are highly critical for PSBs.

When this class licence is allowed for cellular mobile technologies, the most likely scenario will be the deployment of 5G base stations (or Cell-on-Wheels) operated in this 4940-4990 MHz band in high density areas (such as Sydney) during major events and serious incidents. Those are the exact situations where multiple public safety and emergency services agencies deploy their ad hoc communications systems in this band with the possibility of significant interference. When cellular mobile systems use a large chunk of spectrum for a single base station, other ad hoc rapid deployment systems must compete for spectrum.

Further in certain circumstances, cellular mobile base station signals can easily interfere with airborne mobile services, i.e., transmitters fixed on aircraft operating in the 4.9 GHz band with a detrimental effect on both systems. Therefore, the impact of emissions of cellular antennas on airborne transmitter and receiver systems should be better understood before including cellular mobile technologies in this class licence.

The State Coroner of NSW has made following recommendation about audio and video surveillance in relation to the inquest into the deaths arose from the Lindt Café siege in Sydney.

“Recommendation 13: Audio and video surveillance

I recommend that the NSWPF review its personnel arrangements and structures for the monitoring of surveillance devices, including number of officers allocated to a listening or reviewing post for monitoring purposes and the demarcation of roles, including primary monitor, scribe/log keeper, and

disseminator, I also recommend that clear communication channels be established for reporting data captured during such surveillance, including via integrated electronic intelligence sharing platforms or applications¹."

This recommendation was made with respect to the observation of time taken to set up adequate visual coverage of the incident scene. The report highlights the importance of situational awareness in the command centres with live video streaming with clear communications channels.

Currently PSBs alone do not have capability to use cellular technologies as an ad hoc rapid deployment to replace existing communications systems. Therefore, NSWPF is highly concerned about allowing the use of cellular mobile technologies in this class licence due to above reasons.

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?

Question 7. Are the proposed emission mask, power limit and EIRP limit for cellular mobile user equipment appropriate?

NSWPF understands that proposed emission mask P is less restrictive than the emission mask of currently authorised transmitters in this band. NSWPF is concerned about the impact of less restrictive transmitters on current authorised equipment. The effectiveness of proposed measures to mitigate interference is yet to be understood in real world use case scenarios such as operating multiple communication systems in close proximity. As such, NSWPF would prefer that all equipment operating in this band is required to meet the existing emission masks, power limits and EIRP.

Question 8. Are the emission masks, power limits and EIRP limits for existing services appropriate?

NSWPF supports the emission masks, power limits and EIRP limits for existing services as they are appropriate.

Question 9. Do the technical parameters proposed in the draft class licence restrict the use of any other technologies required by PSBs?

As raised in the Question 5, 6 & 7, the impact of operating cellular technologies (with less restrictive emission mask as well) on airborne surveillance systems is yet to be understood.

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?

NSWPF supports the current definition of "public safety bodies" and "public safety or emergency response function" and the authorisation requirements.

NSWPF strongly believes that the 4.9 GHz band should be allocated for public safety and emergency response purposes only. When this band is evaluated under public interest criteria, ACMA should

¹ State Coroner of NSW, May 2017, "Inquest into the deaths arising from the Lindt Café siege, Findings and Recommendations", pp. 22-23.
[<https://www.lindtinquest.justice.nsw.gov.au/Documents/findings-and-recommendations.pdf>].

consider the public benefits it generates and their enormous impact on the community safety under the existing class licence arrangements. NSWPF is firmly of the view that the economic and social benefits delivered to the community by PSBs using this band outweigh any commercial interest associated with it.

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?

NSWPF supports narrowing the 6-month authorisation period only for fixed point-to-point services.

Question 12. Which channel plan should be adopted in the class licence? Why?

As the major user of 4.9 GHz band in NSW, NSWPF supports channelling plan B of ITU-R published Recommendation ITU-R M.1826-1 with overlapping channel widths from 5 MHz to 50 MHz. Currently there are no use cases for 1 MHz channels. All communication systems that NSWPF operates in this band require 5 MHz or more bandwidth. These systems are primarily used for video transmission, and to achieve the required video quality (i.e., high-definition video), the minimum channel bandwidth requirement is 5 MHz. Most point-to-point and mesh networks require at least 10 MHz or 20 MHz of bandwidth.

Therefore, NSWPF supports adopting channelling plan B for this class licence which enables the flexibility needed for PSBs to support a variety of operational requirements.

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?

NSWPF believes that the current interference protection measures for radio astronomy sites are not fit-for-purpose. They restrict the use of the band within NSW and the ACT too much for PSBs. With the existing Class licence, a NSWPF aircraft cannot take off from Bankstown Airport using one of the channels above 4950 MHz. Therefore, as mentioned in Question 4, NSWPF believes that ACMA should reassess the interference protection measures with research organisations to make this band less restrictive in term of geographical areas for PSBs to operate.

Should you wish to discuss this submission, please contact [REDACTED], Manager - Engineering Services, Wireless Technology, Wireless Network Group, Communication Services Command, NSW Police Force on [REDACTED] or email at [REDACTED].

Yours sincerely

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NSW Police Force

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