

**Response to the ACMA Options Paper**

Reconfiguring the 900 MHz band April 2019

**Submission from**

**University of Melbourne Centre for Disaster Management and Public Safety (CDMPS)**

**28 May 2017**



**Introduction**

The University of Melbourne’s Centre for Disaster Management and Public Safety (CDMPS) welcomes the opportunity to respond to the Australian Communications and Media Authority (ACMA) Options Paper – *Reconfiguring the 900MHz band*.

**The University of Melbourne Centre for Disaster Management and Public Safety (CDMPS)**

The CDMPS is a Centre established by the University of Melbourne in November 2013 to specifically focus on research associated with disaster management and public safety. Mission critical communications infrastructure essential to the management of major emergencies and disasters is a specific component of the Centre’s Research Agenda. (<https://unimelb.edu.au/cdmps/home?referrer=301_redirect>).

This Submission is consistent with the CDMP’s strategic intent to support multi-disciplinary collaboration between researchers, government, industry, agencies and the community in delivering exceptional public safety outcomes.

**Purpose**

The purpose of this Submission is to identify in the context of the ACMA’s Option Paper:

1. The need to recognise the existence and importance of Australia’s Public Safety Communications Ecosystem (the ecosystem);

(b) The need to recognise the ACMA Options Paper as one of a series of Government and Department Discussion Papers independently addressing matters that will impact and/or influence the policy, strategic and regulatory settings associated with the evolution of the ecosystem;

(c) The need to continue to raise the profile, understanding and awareness of the ecosystem in the public safety market and amongst its key stakeholders.

**Australia’s Public Safety Communications Ecosystem**

For the purpose of this Submission the ecosystem will be considered to comprise the following components:

• Australian citizens and their use of communication devices

• The Emergency Call Person (ECP) service

• Public Safety Agency Answering Points (Control Rooms)

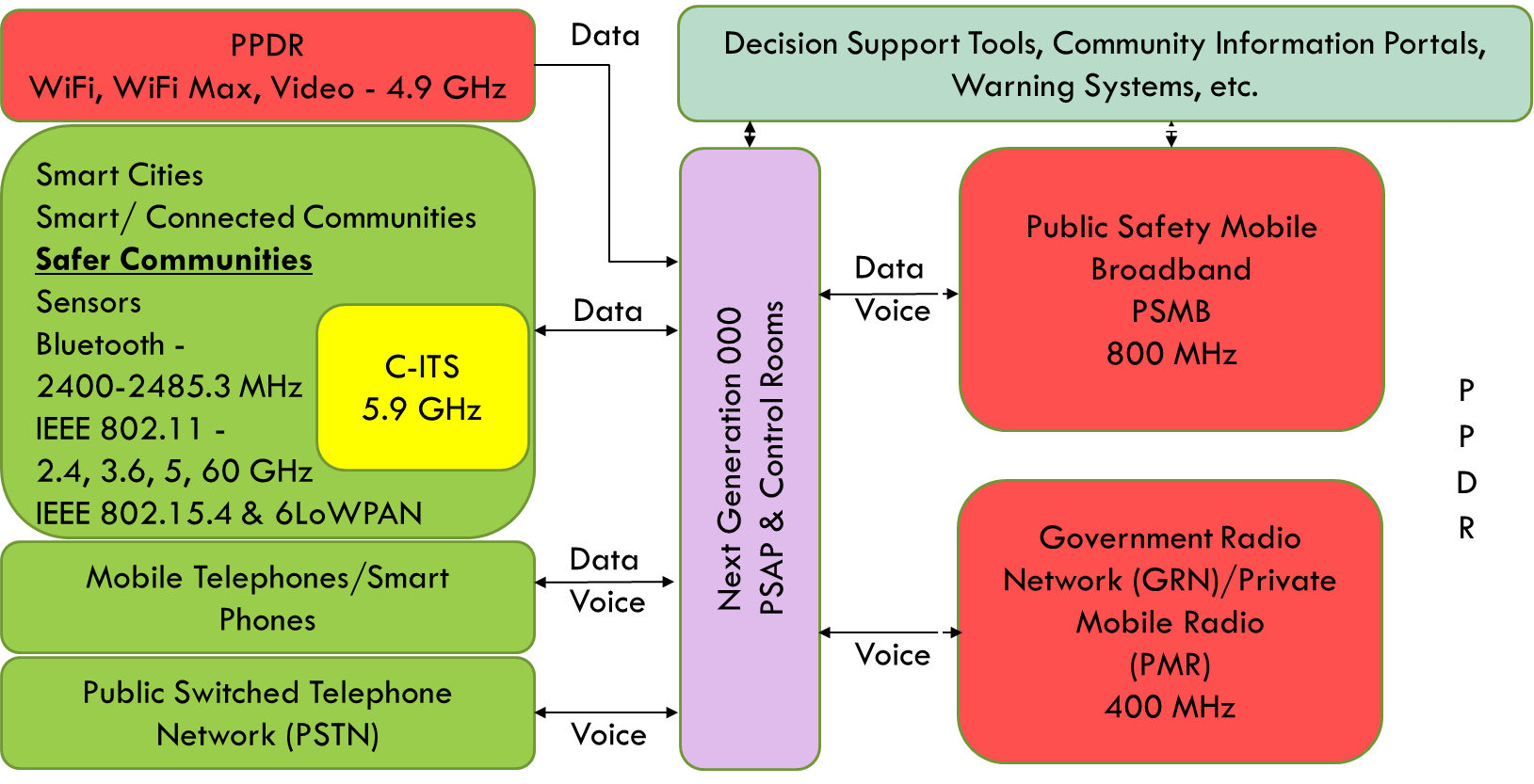
• Public Safety Mission Critical Land Mobile Radio (LMR) Networks

* Public Safety Mission Critical Long Term Evolution (LTE) Networks (under development)
* The interfaces between each of these components that provide the interoperability capability and capacity that facilitate the receipt and transfer of information between each of these components.



The ecosystem is progressively transitioning from a complicated i.e. analogue – voice based environment, to a complex i.e. digital, data and IP based environment within mainstream information and communications and technologies.

The CDMPS has developed a simplified illustration of the ecosystem shown in Figure No1.



**Figure No 1 – Simplified Illustration of the Public Safety Communications Ecosystem**

The ecosystem transition is being driven by stakeholders able to produce next generation public safety communications capabilities leveraging technologies developed to meet consumer/citizen expectations of being continuously connected anywhere anytime.

The transition will also recognise the extended response community e.g. utilities and the shared responsibility of stakeholders beyond police and emergency services like fire agencies and emergency medical responders ensuring a greater return on investments made in the ecosystem.

Likewise the ecosystem must expand its services beyond the traditional emergency services sector and include a broader range of stakeholders, for example the owners and operators of critical infrastructure and their communications requirements as they pertain to public safety.

Emergency Management Australia (EMA) within the Department of Home Affairs is understood to be working towards a national program for the public safety communications ecosystem. CDMPS expects the provision of spectrum will be recognised as a critical resource enabler to the efficient and effective operation of the ecosystem.

**Context**

The Council of Australian Governments (COAG) at its meeting on 12 December 2018 considered an Agenda regarding progress being made on priority *economic, social* and *national security* issues to improve the lives and *ensure the safety of all Australians*.

As mentioned in the ACMA Options Paper COAG took a significant step towards achieving a federated national PSMB capability with all jurisdictions agreeing to the adoption of a “Strategic Roadmap” that sets out a plan to design, implement and operate PSMB and *to continue to work together to resolve the supporting spectrum arrangements in parallel with Proof Of Concept (POC) trials.*

The COAG endorsed PSMB Strategic Roadmap recognises the PSMB capability is a *game changer* for the public safety communications ecosystem enabling the development of both a Framework and Timetable that can be used to monitor progress with PSMB and the evolution of other technologies in the ecosystem e.g. the Public Safety Internet of Things together with supporting legislation – regulation.

Importantly it also allows alignment with global timetables for open standards e.g. 3GPP and the anticipated release of standards based products and services to the market and its component sectors.

In making this decision it appears that COAG did not make the connection between other matters on the COAG Agenda i.e. COAG made the decision relating to PSMB under the heading of *“Crisis and Emergency Management”* whereas the PSMB capability also related to several other agenda items e.g.

* *Better equipping our agencies to deal with the threat of terrorism and organised crime*
* *Enhancing cyber capability and resilience*
* *Increasing collaboration on national security*
* *Ensuring the wellbeing of Australia’s young people*
* *Reducing violence against women and their children*
* *Improving population planning and management*

These items can be included in the development of the PSMB Framework to raise the level of understanding amongst key stakeholders of both PSMB capability and the importance of the ecosystem itself.

In May 2019 the National Disaster Risk Reduction Framework (NDRRF) was released. This Framework was a multi-sector collaboration led by the National Resilience Taskforce within the Department of Home Affairs.

The NDRRF identified the following as components in disaster risk reduction and provided a Five Year (2019-2023) for strategy implementation:

* *Critical Infrastructure*
* *Telecommunications*
* *Standards*

* *Emergency Management*
* *Essential public services*

The Critical Infrastructure Centre (CIC) within the Department of Home Affairs has previously identified the following as Australia’s Critical Infrastructure sectors:

* *Electricity*
* *Water*
* *Gas*
* *Marine*
* *Telecommunications*

The CIC noted the complexity of the *telecommunications* sector and the need for special legislation in the form of the Telecommunications Sector Security Reform (TSSR).

The above examples are intended to demonstrate the linkages that are emerging between government policy and strategy in which *telecommunications* is a common element where the appropriate allocation and use of spectrum is of fundamental importance to a range of outcomes related to the *economic, social* and *national security* issues that need to be addressed to improve the lives and *ensure the safety of all Australians*.

The PSMB capability is proposed to be delivered as a service by private sector participants in the *telecommunications* sector (as is the Next Generation Triple Zero service). Following the COAG decision the NSW Telco Authority on behalf of all jurisdictions issued a Request For Proposal (RFP) from the *telecommunications* industry to participate in a POC trial of a national PSMB capability. The POC will test 3GPP standards based services including Prioritisation, Pre-emption and Quality of Service (PPQoS) predicated upon access to *dedicated spectrum*.

The outcomes of these trials *may* be considered as an input into the decision over allocation for the spectrum used to establish a PSMB capability. At this time the Australian Government has agreed to set aside 2 x 5 MHz of spectrum in the 850 MHz expansion band for this capability in which Australia’s PSAs will become consumers of mobile broadband services provided by a Virtual Mobile Network Operator (VMNO).

As there are a number of economic models which would make adequate spectrum available for the PSMB capability the selection of a spectrum model which takes into account the economic and broader social impacts is necessary to provide certainty to suppliers and governments, allowing them to create accurate investment proposals which form part of any detailed PSMB Business Case at both Federal and State/Territory level.

The outcomes from the above discussion are as follows:

* The mission critical public safety communications ecosystem needs to be recognised as Critical Infrastructure by Australian Government(s).
* Spectrum allocation across the ecosystem needs to be based upon the needs of Australia’s PSAs and take into account both current and emerging technologies used in conjunction with global open standards.



* The policy decision to apply Highest Value Use or Opportunity Cost Pricing to spectrum allocation in the ecosystem should be revisited to ensure outcomes are related to the *economic, social* and *national security* issues that need to be addressed to improve the lives and *ensure the safety of all Australians*.

In the context of the above discussion this Submission provides the following responses to the ACMA’s Consultation Questions:

**Consultation Questions:**

1. The ACMA identified a set of outcomes from this process that would indicate the success of the reform—are these appropriate? Are there any other additional outcomes that should be included in this analysis?

Response: A specific question regarding the impact of the outcomes proposed by the ACMA on the successful delivery of a PSMB capability in the context of the public safety communications ecosystem could set a precedent for assessing the outcome of spectrum allocation with other components of the ecosystem e.g. the Public Safety Internet of Things (PSIoTs) in the context of Smart Cities and as technologies and the associated standards evolve and mature.

1. Are the reform options presented in this paper appropriate, and are there any implementation issues or suggestions that haven’t been identified?

Response: The ACMA’s preference for the “encumbered auction” because it maintains the price based allocation of spectrum assumes the use of Highest Value Use or via Opportunity Cost Pricing being applied to spectrum allocation.

In the fuller understanding of the importance of the PSMB capability and COAGs decisions it is suggested that the use of Highest Value Use or via Opportunity Cost Pricing in relation to the allocation of spectrum associated with the mission critical public safety communications ecosystem needs to be revisited in conjunction with thePSMB POC and the testing of the integration of dedicated PSMB spectrum intrinsic to the proposed delivery model and associated Use Cases and Business Plans.

1. Stakeholders raised concerns that the mid-2021 clearance date will result in consumer service discontinuity; does the proposed mid-2024 clearance date provide enough time to create an alternative pathway for the deployment of services at risk?

Response: As stated in the Options Paper the “encumbered auction” option involves extension of the full clearance of the 850 MHz expansion band licenses until 2014.

Reference to the PSMB Strategic Roadmap indicates that spectrum will be required by December 2022 to support the *“individual jurisdiction procurement and implementation of enhancements such as hardened infrastructure and dedicated spectrum RAN”*.



If this assessment is correct then a 2 year delay to the delivery of a PSMB capability is likely unacceptable to key stakeholders associated with the provision of the PSMB capability.

This new PSMB operational capability and delivery model will require a fundamental change to PSA Concepts of Operations resulting from a shift from traditional radio voice command and control to a new data driven command and control system and hence the time required to achieve this change.

1. Can stakeholders provide up-to-date information on consumer migration to 4G compatible handsets, including estimates of the numbers of consumers yet to migrate, and information on the timing and speed of consumer migration?

Response: It would be expected that the PSMB Functional Working Group will be able to provide this information relative to Australia’s PSAs.

1. The encumbered auction option includes an approach whereby incumbent apparatus licences and spectrum licences would potentially ‘overlap’. Do stakeholders have any concerns with this approach being employed in this context?

Response: Refer to the response to Question 2. COAG has accepted the PSMB Strategic Roadmap and the associated timetable for implementation therefore any option to delay the allocation of dedicated spectrum for the POC and/or the PSMB capability should be avoided or mitigated as much as possible.

1. Are there any issues associated with the hybrid option that raise any concerns for stakeholders?

Response: Refer to the responses to Questions 2 and 5. Both ACMA options should be assessed to determine which better supports the provision of the PSMB capability for PSAs in accordance with implementation of the PSMB Strategic Roadmap.

1. Are there any other mitigation techniques that will see the reconfiguration of the band into 5 MHz configuration whilst mitigating risks to consumer services?

Response: No response.

**Contact for Information Regarding this Submission**

**Geoff Spring**

**Senior Industry Advisor**

**Center for Disaster Management & Public Safety**

**172 Bouverie Street, Parkville**

**The University of Melbourne, Victoria 3010 Australia**

**Mob: 0411 130 184**

**E-Mail: geoff.spring@unimelb.edu.au**

