ACMA Consultation Paper Second Round – June 2019

Review of the Telecommunications (Emergency Call Service) Determination 2009

Submission from University of Melbourne
Centre for Disaster Management and Public Safety

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Introduction

The University of Melbourne's Centre for Disaster Management and Public Safety (CDMPS)[1] welcomes the opportunity to provide a further submission responding to the Australian Communications and Media Authority (ACMA) Consultation Paper – June 2019 - *Review of the Telecommunications (Emergency Call Service) Determination 2009 – Second round consultation paper.*

This second round Submission from the CDMPS remains consistent with the CDMP's strategic intent to support multi-disciplinary collaboration between researchers, government, industry, public safety and national security agencies and the community in delivering enhanced decision-making capabilities resulting in increased community safety resilience and public safety outcomes.

Submission Context

The purpose of the ACMA's First round Consultation Paper was to "*consider whether, in light of technological, environmental and other changes, the Emergency Call Service (ECS) Determination 2009 remains relevant and effective in contemporary Australia or whether changes should be made that better assure Emergency Communication Services (ECS)-related community protections".*

The ACMA's Second-round Consultation Paper states that the purpose of the Paper is to *facilitate a public consultation process on a draft new Telecommunications (Emergency Call Service) Determination 2019.*

The Second round Consultation Paper is appropriately supported by the ACMA's summary of the issues identified from the 10 Submissions received in response to the First round of consultation together with a draft of the Telecommunications (Emergency Call Service) Determination 2019.

This CDMPS Submission continues to build upon advice offered previously to the ACMA and previous CDMPS Submissions responding to a range of Australian Government and Federal Government Department Discussion Papers relating to the on-going development of the *mission critical public safety communications ecosystem.*

The CDMPS supports the approach being taken by the ACMA to consultation because the ECS is one important piece of legislation and regulation relevant to the total ecosystem.

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[1] http://research.unimelb.edu.au/cdmps

In the CDMPS First round submission the increasing complexity of the ecosystem was illustrated as shown in Figure No1 as being driven by new and evolving next generation technologies requiring a legislative and regulatory framework for the mission critical public safety communications ecosystem in which the ESC Determination will need to be embedded and interfaced with other supporting legislation.

Figure No 1 – Next Generation Emergency Management Infro-structure (Griffin)

In the past eight months the rate of technology development in the consumer market has not diminished e.g. the launch of 5G networks, further necessitating the need for evidenced based research into how the public safety communications community may leverage through innovation the products and services continuing to feed the consumer appetite for 24/7 connectivity.

In this context the CDMPS supports the action taken by the ACMA to include a set of objectives and a restructure of obligations in the draft ECS Determination which should allow the development of a Performance Measurement Framework to assess and report the level of service available to citizens when accessing the current ECS and importantly during the transition to the Next Generation Triple Zero service when it becomes available.

However the CDMPS reaffirms in this Second round Submission its position that any review of the ECS Determination, now or in the future, cannot effectively consider the impact of future technological, environmental, social and governance changes *without considering the broader Government policy framework which will drive changes in the emergency services policy framework and subsequently both government and Australia's Public Safety Agencies (PSAs) response to these changes.*

The following advice provides evidence supporting the need for a whole of ecosystem approach to policy development, legislation and regulation further reinforcing the argument that *the mission critical public safety communications ecosystem should be recognised as part of Australia's critical infrastructure*:

Public Safety Mobile Broadband

The provision of a public safety mobile broadband (PSMB) capability for Australia's Public Safety Agencies (PSAs) has continued to progress and is in the process of evaluating a Proof of Concept (PoC) for a service delivery model to deliver this capability with the expectation of an approach to the market later in 2019/20 or 2020/21.

Australia's Mobile Network Operators (MNOs) are expected to perform a significant role in the provision of this capability but it needs to be recognised that the network(s) providing this capability will be the same network(s) used by Australians for consumer and commercial services as well as to access the Triple Zero Service in times of emergency in accordance with the ECS Determination. In the latter case it is expected that the MNOs will be capable of providing network(s) with Quality of Service (QoS) prioritisation and pre - emption in the delivery of the request for access to the ECS and the PSA response.

Evidence Based Research and Needs Analysis

Internationally the United States Public Safety Communications Research (PSCR)[2] Broadband Stakeholders meeting in Chicago last week reconfirmed the primary needs of America's public safety communications community and its First Responders to be Location Based Services, Data Analytics and User Equipment/User Experience with Security and Resilience as cross cutting issues and that future research funding will be invested in these priorities.

Resilience

It is expected that the primary needs (of the public safety communications community) confirmed by the PSCR will be reflected globally across the ecosystem and bring further transparency to the need for high levels of network resiliency.

The nationwide Telstra network failure on Thursday 11 July lasting five hours which Telstra blamed on *"a surge of traffic"* caused by *"unusual volumes on the network"* is an example of the importance network resiliency in the architecture of the mission critical public safety communications ecosystem and the role that the private sector (MNOs or possibly a Mobile Virtual Network Operator MVNO) will need to perform in both the provision and operation of components of the ecosystem.

It is assumed that the ACMA will undertake an investigation into the cause of the problems encountered with the Telstra network from the perspective of both resiliency and potential impact upon the Triple Zero service.

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[2] https://www.nist.gov/communications-technology-laboratory/pscr

The National Disaster Risk Reduction Framework produced by the Department of Home Affairs released in 2019 identifies both *telecommunications* and *critical infrastructure* as key components in the National Disaster Risk Reduction Framework and notes that the Framework is situated in the broader disaster *resilience* policy context.

Data - Internet of Things

The draft ECS Determination 2019 still focuses on access to the Triple Zero service by *voice* rather than *data* when both current and future communications capabilities are now largely based upon data.

One example is the development of the capture, analysis and use of data through the emerging presence of the Internet of Things (IoTs) as a segment in the consumer market. This capability now being recognised within the public safety communications community as the Internet of Public Safety Things (IoPSTs) will equally impact all components of the ecosystem.

The National Public Safety Telecommunications Council (NPSTC) in the USA released in June 2019 its publication *"Public Safety Internet of Things (IoT) Use Case Report and Assessment Attributes"*[3] to provide guidance to the public safety communications community and its First Responders about their engagement with this emerging technology which is expected to interface with Public Safety Answering Points (PSAPs).

Cyber Security

Recognising the importance of the need to protect data from a privacy and security perspective the National Institute of Standards and Technology (NIST) within the US Department of Commerce released in June 2019 its publication *"Consideration for Managing Internet of Things (IoT) Cyber Security and Privacy Risks"*[4].

The PSCR meeting in Chicago received presentations on the first year's research undertaken into De-identifiable Data in the context of its use with Personal Identifiable Information (PII) further establishing the links between the ecosystem and the data it will carry, cybersecurity and national security.

The re-elected Australian Federal Government has further recognised the importance of cyber safety by its inclusion in the ministerial responsibilities for the Minister of Communications *Cyber Safety* and the Arts. This recognition should provide portfolio connectivity to the Minister for Home Affairs; the Department of Home Affairs; the Critical Infrastructure Centre in relation to cyber security and national security; and the Telecommunications Sector Security Reform (TSSR) Legislation arising from the recognition of telecommunications as part of Australia's critical infrastructure.

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[3]
http://npstc.org/download.jsp?tableId=37&column=217&id=4195&file=NPSTC_PSIoT_Use_Cases_Report_190616.pdf
[4] https://nvlpubs.nist.gov/nistpubs/ir/2019/NIST.IR.8228.pdf

Legislation

The ECS Determination 2019 needs to be recognised as legislation that needs to be considered and reviewed in the context of other associated legislation through the parliamentary process because of the transition to the carriage of data as well as voice during the life of the legislation once passed.

The Parliamentary Joint Committee on Intelligence and Security appears to be the Committee to review the Determination as it is currently reviewing the Mandatory Data Retention Scheme (ensuring telecommunications data is retained for two years making the data available for law enforcement and national security investigations) and amendments to the Telecommunications and Other Legislation Amendment (Assistance and Access) Act 2018 (TOLA) (empowering law enforcement and national security agencies to request, or compel *telecommunications providers* to assist them to deal with ubiquitous encryption) to ensure legislation is keeping pace with *community expectations* regarding appropriate decision making and oversight.

Given the continuing changes that are occurring in the mission critical public safety communications ecosystem it is suggested that a nationally integrated and co-ordinated approach needs to be taken to a legislation and regulatory framework for the ecosystem in the manner being suggested for major Australian infrastructure projects.

Terminology

Given the matters raised in this Submission to "Data" relevant to the ECS Determination it is suggested that the term "Call" be replaced by the term "Communications" allowing for the transition of the ECS as the Next generation Triple Zero services become available. It is understood that this approach would be consistent with the approach taken in European Legislation.

CDMPS does not support the use of terminology or the concept of 'Best Efforts' or 'Greatest Extent Possible' as this in the past has not provided the required level of services consistent with community expectations.

At the very least common acceptable, understandable and non-ambiguous terminology should be used in the drafting of both legislation and regulation within the recommended legislation and regulatory framework should be used across the ecosystem.

Time Frame

The ACMA Review of the Telecommunications (Emergency Call Service) Determination 2009 covers a decade of change in community expectations relating to the way communication with service providers (public and private sectors) are undertaken and the type of technologies underpinning both the method of communications and service delivery.

In the context of the issues raised in the Submission it is the view of the CDMPS that *the Telecommunications (Emergency Call Service) Determination 2019 cannot stand alone* but must be considered in the context of broader government policy at both Federal and State level that reflects the increasingly complexity of the mission critical public safety communications ecosystem and community expectations for the Next Generation Triple Zero service when it becomes available.

The regular review of the Determination needs to be anticipated as the transition to the Next Generation Triple Zero service and the PSMB capability is established. The COAG has approved an initial PSMB RoadMap[5] that can provide guidance in this matter.

The Draft Emergency Call Service Determination

The key issues of the draft Emergency Call Service Determination (ECS) are supported as they appear to be a logical progression of the current service provisions however they are limited in their provision for future services.

Adoption of other digital technologies is already widespread within the general community consistent with generational change. There have already been instances of attempts to contact emergency services via social media (some successful) and it has been recently reported in the USA that both wearable devices and home digital assistant devices have attempted to contact PSAPs.

Recognition of the ECS as an integral component of the public safety communications ecosystem means no exemptions and there should be a pre-determined level of resilience and redundancies provided to remove spurious applications for exemptions.

As identified by PSCR research the potential for improved location based services is welcomed and CDMPS concurs with the provision of the best location data possible to the ECS in all cases. However, the ability to locate a device in the three dimensions will future proof location data as other technologies and processes mature.

Digital three-dimensional building and city models already exist and are becoming more common. Governments via their land administration bodies are rapidly moving towards three-dimensional building information models (BIM) allowing these government bodies to provide foundation spatial data to emergency services, industry and other governmental bodies.

CDMPS's sister Centre, the Centre for Spatial Data and Land Administration (CSDLA) is already working with the Victorian Government to develop and implement BIM within the land planning arena; it is also working with the Victorian Government on a 'Digital Twin'[6] of the new Fisherman's Bend urban re-development precinct.

All these innovations will have a direct relevance to the ECS and PSA responses to the community using location based information.

Next Generation Triple Zero initiatives

SMS to Triple Zero

CDMPS cannot comment on the technical requirements of the various carriers to provide this capability but it will be a welcomed development. SMS to PSAPs in the USA has been a reality for some years now but it is acknowledged that the USA is conducting a staged rollout of this ability as PSAPs acquire the required technology.

Advanced Mobile Location

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[5] https://www.coag.gov.au/sites/default/files/communique/public-safety-mobile-broadband-strategic-roadmap.pdf
[6] https://www.itnews.com.au/news/vic-govt-to-build-states-first-digital-twin-528187

This issue has been largely addressed in previous comments about the importance of the accuracy of location of mobile phones being used to access the ECS.

CDMPS proposes that any trials of Advanced Mobile Location be conducted with appropriate subject matter experts with experience in advanced spatial visualization tools. The efforts of BT in the United Kingdom in conjunction with British APCO should also be acknowledged.

Technologies such as these needs to be addressed in the context of the PSMB Proof of Concept and its requirement for roaming capability within the mission critical public safety communications ecosystem to meet the needs of the PSAs and the capability of the PSAs PSAPs to be able to receive and process emergency calls from both a technology and human resources perspective.

This latter comment raises the need for an assessment of the "Fit for Purpose" readiness of State and Territory PSAPs for both Next Generation Triple Zero and the PSMB capability.

SIM-Less Call Handling

This initiative to reduce unwelcome calls to the ECS is supported on the basis of both current need and the past experience of the contributing authors to this Submission with the original IVR solution for no-voice calls.

For further information about this Submission please contact the following:

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