Australian Government

Attorney-General's Department

Senate Standing Committees on Environment and Communications

Inquiry into emergency communications - The capacity of communication networks and emergency warning systems to deal with emergencies and natural disasters

Submission from the Commonwealth
Attorney-General's Department

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1. INTRODUCTION

The Attorney-General's Department (AGD) contributes to the Australian Government's commitment to a stronger and fairer Australia by striving to achieve a just and secure society through the improvement of Australia's national security and emergency management system[1]. In respect to emergency management, AGD provides national leadership to guide the efforts of all Australian governments enabling a whole-of-nation, resilience-based approach to preventing, preparing for, responding to and recovering from disasters.

While the Commonwealth has a national coordination role, primary responsibility for the protection of life, property and the environment rests with the States and Territories in their capacity as first responders during times of emergency. Therefore, State and Territory emergency management agencies have full autonomy in relation to: (i) whether and when to issue an emergency warning; (ii) which delivery mechanisms to use to disseminate the emergency warning, and (iii) the content of the warning. It is up to individual States and Territories to choose which warning technologies they adopt and when to activate them in accordance with the specific circumstances of an incident.

All States and Territories have disaster or emergency plans that include a communications component for the dissemination of rapid onset emergency warnings to the community. At the Australian Government level, the Bureau of Meteorology (the Bureau) issues warnings and watch notices via the broadcast media and the internet, directly to the public for weather alerts (such as severe thunderstorm warnings, high sea, flood and tropical cyclone warning) and, in conjunction with Geoscience Australia, also issues tsunami warnings. Warnings issued by these agencies inform the warning messages that State and Territory control agencies disseminate to the public.

AGD has assisted States and Territories to improve their emergency warning capacity by funding selected initiatives with national application and by facilitating and promoting national consistency. Commonwealth involvement can serve to overcome resource constraints that might otherwise prevent the rollout of programs by smaller jurisdictions.

However, AGD does not play a role in compiling warning messages or the instructional information they contain, nor in activating emergency warning delivery mechanisms, which may include television, radio, fixed and mobile telephone, loud hailers, community meetings and road signage.

AGD contributes to a range of activities that traverse the emergency warnings and communications arena. Where there is benefit in capabilities and programs extending across jurisdictional boundaries, AGD works closely in conjunction with State and Territory agencies, and relevant Commonwealth counterparts, to facilitate their cohesive and effective implementation. This work is outlined in this submission.

[1] Attorney-General's Department Portfolio Budget Statements 2010-11, p.1

1.1 National Emergency Warning Principles

In October 2008, the Ministerial Council for Police and Emergency Management – Emergency Management (MCPEM-EM), chaired by the Attorney-General, the Hon Robert McClelland MP, endorsed the following twelve national emergency warning system principles. The principles provide a framework that guides activities in the public warning sphere. Adhering to these principles also improves the effectiveness of emergency warnings and communications across all jurisdictions.

1. **Coordinated**: a warning system should avoid duplication of effort where possible and support a shared understanding of the situation among different agencies involved in managing the incident.

2. **Authoritative and accountable:** warnings are to be disseminated on the decision of an authorised person. Authorities should be able to interrogate the System components for later analysis.

3. **Consistent / Standards based:** the information content is coordinated across all of the mechanisms used for warnings. Messages must be consistent across different sources if they are to be believed by the general population. Conflicting messages tend to create uncertainty and will delay responsive action. Any relevant identified standards will underpin the agreed System Framework.

4. **Complete**: message content should include relevant pertinent details, including possibly a direction on the need to consult other sources, presented in a way that is easily and quickly understood by the population. This includes multiple languages in some cases, as well as the use of multi-media for those who are illiterate or people with a disability (eg. people who are Deaf or have a hearing impairment or those who are blind or have a vision impairment).

5. **Multi-modal:** warnings are to be disseminated using a variety of delivery mechanisms and in multiple information presentation formats that will, in some circumstances, complement each other to produce a complete picture, with planning and processes to allow for maximum reach to all members of the community and to provide for redundancies in the case of critical infrastructure failure (eg. power or telecommunications).

6. **All-hazards:** any emergency warning system developed will be capable of providing warnings, where practicable, for any type of emergency.

7. **Targeted**: messages should be targeted to those communities at risk in order to reduce the complacency that can result from people receiving warnings that do not apply to them – ‘over warning’.

8. **Interoperable:** have coordinated delivery methods, capable of operation across jurisdictional borders for issuing warnings.

9. **Accessible and responsive:** capable of responding to and delivering warnings in an environment of demographic, social and technological change. Recognise the criticality of adopting universal design and access principles, particularly in the development and acquisition of technologies.

10. **Verifiable:** the community is able to verify and authenticate the warnings to reduce incidents of accidental activations and prevent malicious attempts to issue false alerts to a population.

11. **Underpinned by education and awareness raising activities:** the System, any delivery mechanisms that constitute it and the language used in the warning messages it delivers, should be underpinned by appropriate education and awareness raising activities.

12. **Compatible:** with the existing telecommunications networks and infrastructure without adversely impacting on the normal telephone and broadcast system. The System should avoid any adverse operational, technical or commercial implications for the provision of current communications services to consumers and on the integrity of communications networks.

To underpin the implementation of the national telephone-based emergency warning capability, in 2009 States and Territories compiled a National Telephony Warning System Guideline document. The guidelines expand the scope of the National Principles to include the following two additional principles:

13. **Compliant with relevant legislation**: warnings should be compliant with relevant Commonwealth, State and Territory legislation, associated regulations and policy.

14. **Integrated:** warnings should be integrated to ensure timely notification to multiple organisational stakeholders and communication channels.

1.2 Multi-modal warning approach

No emergency warning mechanism is guaranteed to deliver warnings to all people in a given area at a given point in time. Thus it is critical that no single mode of warning or communication is relied upon solely, in times of emergency – either by the public to receive warnings, or by warning agencies to disseminate them. States and territories have a suite of delivery mechanisms at their disposal that they may use to issue warnings. These range from more traditional methods such as television and radio broadcast, community meetings and loud hailers to utilising the latest technology, such as mobile texting and social networking tools.

All Australian governments are supportive of a multi-modal approach to issuing emergency warnings. Adopting such an approach to warning the community is crucial in the event of critical infrastructure failure and also for reasons of saturation and accessibility. It maximises the likelihood that as many people as possible receive and comprehend a warning regardless of the activity they are involved in or the mode of communication they are reliant on or prefer. This in turn makes it more likely that people will be in a position to take appropriate action to protect against loss of life, or injury, and mitigate against damage to property.

1.3 The importance of Preparedness

Emergency management in Australia is underpinned by the concept of an integrated approach incorporating prevention, preparedness, response and recovery.

Preparedness activity includes a variety of measures designed to ensure that, should an emergency occur, communities, resources and services are capable of coping with the effects. These measures include different resources, services and actions.

The purpose of an emergency warning is to inform the community of an impending or current threat and to prompt an appropriate response or action. Warnings are most effective when delivered to an informed and prepared community, as they will be more successful in prompting an appropriate response to the impending risk.[2]

To assist in building the preparedness of the Australian people for emergencies and disasters, AGD publishes a number of resources, including *Preparing for the Unexpected* *http://www.ema.gov.au/www/emaweb/emaweb.nsf/Page/Publications_CommunityAwarenessPublications_PreparingfortheUnexpected*>. This brochure is a ready reference for Australian households and provides clear advice and practical actions to prepare for and deal with a range of emergencies. Preparation and planning at the individual, household and community levels assist informed decision making.

It is important that communities do not rely on receiving an alert or emergency warning when disaster strikes. Individuals should be prepared and have an action plan in case of an emergency. Warnings should act as a trigger for the activation of pre-existing emergency plans. Ideally, such plans would be in place prior to known disaster seasons, where this is applicable, and be something that all households are familiar with and have talked through. This is a key element in building the disaster resilience of Australian communities.

In addition, people should not ignore their observations and visual cues that alert of an approaching hazard because there are likely to be instances where authorities will not have the opportunity to warn of an impending emergency.

1.4 National Strategy for Disaster Resilience

Disaster resilience is the collective responsibility of all sectors of society, including all levels of government, business, the non-government sector and individuals. For a resilient nation, all members of the community need to understand their role in minimising the impacts of disasters, and have the relevant, knowledge, skills and abilities to take appropriate action. A disaster resilient community works together to understand and manage the risks that it confronts.

On 13 February 2011, the Council of Australian Governments (COAG) endorsed the *National Strategy for Disaster Resilience – Building the resilience of our nation to disasters* (the Resilience Strategy). The purpose of the Resilience Strategy is to provide high-level guidance on disaster management to federal, state, territory and local governments, business and community leaders and the not-for-profit sector. The Resilience Strategy focuses on priority areas to build disaster resilient communities across Australia and recognises that disaster resilience is a shared responsibility for individuals, households, businesses and communities, as well as for

[2] Fire Services Commissioner Victoria - Bushfire Safety Policy Framework – December 2010, p.15

governments. Endorsement of the Resilience Strategy is the first step in a long-term, evolving process to deliver sustained behavioural change and enduring partnerships.

Providing communities with information empowers them to make more informed judgements. Key to this is the availability and accessibility of transparent, accurate and trusted information sources in various forms and providing the tools to help communities understand and act on the material provided. While providing information and warnings is important, educating people how to respond is equally important.

Disaster resilient communities have sound and practiced emergency response arrangements. They also have the confidence to seek information from multiple trusted sources about local hazards and risks. The Resilience Strategy acknowledges that more work needs to be done to ensure communities receive and interpret disaster risk and warning information and take appropriate action.

2. EMERGENCY WARNING INITIATIVES

2.1 Telephone-based emergency warning capability

In June 2008, AGD established a national working group to examine a number of issues relating to the feasibility of implementing a national telephone-based emergency warning capability, to inform a report to COAG.

COAG considered the report in October 2008 and noted that a nationally-consistent community emergency warning system would enhance State and Territory capability to provide timely and accurate warnings in the event of emergencies, and provide useful information and advice on individual and community responses.

AGD proceeded to work in close consultation with States and Territories to: develop a business case for allowing access to the Integrated Public Number Database (IPND) to enable the delivery of telephone-based emergency warnings to the community; consider appropriate national access models, and inform the necessary legislative amendment.

Access to the Integrated Public Number Database (IPND) was required in order for a national telephone-based warning system to operate. The IPND is a telecommunications industry-wide database of all listed and unlisted public telephone numbers. To facilitate this access, the Commonwealth introduced legislative amendments to allow access to the IPND for warning purposes via the *Telecommunications Amendment (Integrated Public Number Database) Act 2009*, which commenced on 27 March 2009.

These amendments enable States and Territories to use telephone number and address information drawn from the IPND to deliver telephone-based emergency warnings to communities when they are at risk. To help protect peoples' privacy, name details from the IPND are not used or able to be accessed by State and Territory warning authorities as this information is not needed to deliver a warning. The use and disclosure of the IPND data is subject to the provisions of the *Telecommunications Act 1997*.

In April 2009, COAG agreed to take immediate steps to enhance Australia's natural disaster arrangements through the development of a telephone-based emergency warning system. This system would enable the States and Territories to deliver voice warnings to landline telephones and text warnings to mobile telephones based on the customer's registered service address. COAG also agreed that research would be undertaken into the feasibility of developing a capability to deliver emergency warnings based on the location of a mobile telephone handset at the time of an emergency. This was in acknowledgement of the significant enhancement to State and Territory warning capacity that implementation of such a capability would provide.

The Commonwealth committed $26.3 million towards, the development of a national telephone-based emergency warning capability. The key elements of the capability are:

- the national telephone-based emergency warning system, *Emergency Alert*, used by all States and Territories except Western Australia, and
- the Location Based Number Store (LBNS), which serves as the data source for *Emergency Alert* and Western Australia's system, *StateAlert*.

COAG's decision to prioritise the development of a telephone-based warning capability recognised that most Australians use and have access to landline and mobile telephones and that the percentage of the population who use a mobile telephone continues to increase.

Some of the key benefits of telephone-based warnings, relative to other warning methods, are that they can:

- be intrusive and can be delivered 24/7 as telephony-based components are not reliant on the radio, television or computer being turned on; or being in hearing range of a fixed or mobile public address system
- augment existing State and Territory warning capability through providing an additional mechanism or warning tool
- supplement the emergency warnings and information delivered by the primary broadcast communication mechanisms of television and radio
- be delivered quickly, accurately and to mass numbers; and to more people than existing mechanisms
- be sent to phones linked to properties within a specifically targeted geographical location (minimising over-warning to individuals and communities not at risk, which can result in complacency)
- be cost effective with fewer personnel resources required (as opposed to door knocking)
- protect the safety of emergency service personnel, by minimising the need to enter a dangerous area to warn the public (door knocking)
- warn tourist and transient populations (a location-based mobile telephone emergency warning capability will facilitate this)
- improve access to emergency warnings to people with a disability, through incorporating two different communication formats - voice warnings to fixed line telephones and text warnings to mobile telephones
- be audited and verified, and
- take advantage of the increasing trend to mobile phone ownership and emerging technology options and ensure that Australia keeps pace with and capitalises on next-generation capability and international developments, best practice and technological advances.

Location Based Number Store (LBNS)

The LBNS serves as the data source for both *Emergency Alert* and Western Australia's warning system, *StateAlert.* The LBNS holds telephone number and address data drawn from the IPND and assigns it a latitude and longitude value (geo-coding), using information from the Geo-coded National Address File (G-NAF®).

Geo-coding of the telephone numbers and addresses enables the LBNS to determine which telephone numbers it needs to 'send' to *Emergency Alert* and *StateAlert* when these systems query the LBNS using their warning system's mapping tools.

AGD led the procurement process for the LBNS and continues to be responsible for managing the LBNS contract. Intech Solutions operates the LBNS under contract to AGD. The LBNS was made available in October 2009 for *Emergency Alert* and Western Australia's *StateAlert* to connect to for testing purposes and has supported the operation of these systems since their launch.

Business continuity and system resilience were afforded high priority in the design and building of the LBNS. The LBNS system is duplicated at two geographically separate data centres, over 300 kilometres apart. Each data centre provides high levels of reliability and redundancy for network connectivity and power. Nightly backups of the LBNS system and data are also performed, providing restoration capability. The availability of the LBNS is monitored 24/7 basis by data centre staff and the LBNS contractor.

Emergency Alert and *StateAlert* have connections to both LBNS sites, so that the other can be accessed in the event of one site failing or losing connectivity. The data centre and LBNS system comply with relevant sections of the Protective Security Manual and Information Security Manual to ensure the physical and electronic security of the system.

Emergency Alert

Emergency Alert enables States and Territories to issue telephone-based warnings to landline and mobile telephones linked to properties in an area identified as being at risk. It works across all telecommunication carrier networks in Australia.

Prior to the establishment of *Emergency Alert,* AGD sought advice on the potential impact of an emergency warning system on the capacity of the telecommunications network. This was to ensure that appropriate technical considerations were taken into account in the development of the system to minimise the risk of the system's operation adversely impacting network congestion.

Emergency Alert was launched on 1 December 2009 by the Commonwealth Attorney-General, the Hon Robert McClelland MP and the then Victorian Minister for Police and Emergency Services, the Hon Bob Cameron MP.

The Commonwealth provided $15 million for the development of *Emergency Alert.* Participating States and Territories are responsible for the ongoing operational and usage costs associated with the capability.

The *Emergency Alert* website www.emergencyalert.gov.au contains information about the system's capabilities and includes frequently asked questions and links to emergency service agency websites in each jurisdiction. The website provides the public with detailed information in respect to how the system operates, when and why it might be used, the importance of not being reliant on the receipt of a telephone-based warning and the limitations of the capability.

Since *Emergency Alert* became operational on 1 December 2009, it has been used 280 times and issued in excess of 6.54 million messages.[3] The system has been used in New South Wales, Victoria, South Australia, Queensland and the Northern Territory for flood, tsunami, bushfire, storm surge, chemical incident and missing person emergencies.

Consistent with the concept of multi-modality, telephone-based warnings should not be relied upon in isolation as no single warning mechanism is able to reach all individuals who may be at risk in an emergency. These technologies can only supplement emergency warning and information that is delivered primarily through television and radio, and also through a number of other mechanisms. Warnings delivered through the mediums of television and radio have the benefit of being able to be regularly updated.

To support the work of the National Emergency Management Committee (NEMC), AGD provides funding through the National Emergency Management Projects (NEMP) program to enable eligible agencies to undertake projects of national significance in the emergency management sector. Through the NEMP 2010-11 program, the South Australian Fire and Emergency Services Commission is leading a project which aims to assess the effectiveness of *Emergency Alert* by examining its technical effectiveness and levels of system user and warning recipient satisfaction. The project is expected to be completed by 30 June 2011.

Location-based mobile telephone emergency warning capability

The Commonwealth funding for the development of the national telephone-based emergency warning capability also provided $1.35 million for research into the feasibility of developing a location-based mobile telephone emergency warning capability. This capability would issue warnings to mobile telephones based on the physical location of the handset at the time of an emergency, rather than the customer's registered service address.

Once this research confirmed that development of a location-based mobile warning capability was technically feasible, on 14 September 2010, the Prime Minister, the Hon Julia Gillard MP and the Attorney-General jointly announced that the Commonwealth would assist the States and Territories to fund the establishment costs associated with the development of the capability as an enhancement to *Emergency Alert* and *StateAlert*. As the States and Territories will own and operate this capability in their capacity as first responders, the Commonwealth does not have a direct role in the procurement. This process is being led by Victoria on behalf of the States and Territories.

The timing of the deployment of the location-based mobile telephone emergency warning capability is subject to negotiations with each of the three national mobile telecommunications carriers.

[3] As of 25 March 2011. Source: <www.emergencyalert.gov.au>

2.2 Standard Emergency Warning Signal (SEWS)

The Standard Emergency Warning Signal (SEWS) is a distinctive audio signal that has been adopted by the States and Territories to alert the public to the broadcast of an urgent safety message relating to a major emergency or disaster. It is meant to attract listeners' attention to the fact that they should take notice of the impending emergency message.

AGD played a lead role in the development of SEWS and, in October 2009, began developing a visual identity to accompany the existing SEWS sound. This incorporates a logo, slogan and brand development for use in various media. A SEWS visual identity ensures greater understanding and awareness of, and also a nationally consistent identity for SEWS. An information kit for emergency services agencies and the media has been developed, which includes guidelines on the printing and use of the SEWS visual identity. These have been distributed nationally. The electronic media has received community service announcements that are to be used to educate the public about the SEWS signal. *Emergency Alert* warnings to landlines commence with the SEWS signal.

Further information about SEWS is contained on the Commonwealth's national emergency management website 'Emergency Management in Australia' (EMiA) at <www.ema.gov.au>.

2.3 National Broadcast of Emergency Warnings Project

AGD notes the benefit of national consistency in respect to warning arrangements, including with the media industry and national broadcasting networks.

Through the National Broadcast of Emergency Warnings project, AGD worked in consultation with the Australian, State and Territory government agencies and national peak media broadcast bodies to improve the effectiveness and consistency of national arrangements between government and the media for the broadcasting of emergency warnings. The outcomes of this project include:

National Best Practice Guidelines for the Request and Broadcast of Emergency Warnings

The *National Best Practice Guidelines* were endorsed by all jurisdictions and the Commonwealth through MCPEM-EM in 2007. They were also endorsed by the peak broadcast media bodies representing all sectors of the industry: Free TV Australia, Commercial Radio Australia, SBS, ABC, Australian Subscription Television & Radio Association and Community Broadcasters Association Australia.

The guidelines aim to provide a simple, consistent and clearly defined process across all emergency services and broadcast media for issuing, verifying, updating and terminating broadcast requests.

In the four years since their endorsement, the guidelines have been used by all jurisdictions and peak broadcast media as a primary source document when developing new or revised Memorandums of Understanding or procedures relating to broadcast warnings. This has resulted in increased national consistency and effectiveness while ensuring control remains with States and Territories and that local needs are accounted for. All States and Territories now have improved processes and

formal agreements with commercial broadcast media, and many are currently progressing formal arrangements with pay and community broadcast media.

Emergency Warnings – Choosing Your Words

In 2007, an issue identified by both media and jurisdictions was the lack of information to guide the effective wording of warnings. Accordingly, in 2008, communication research was conducted nationally and as a result AGD produced the *Emergency Warning – Choosing Your Words* guide. This guide and the associated research report were distributed nationally to all stakeholders. This initial project was followed by further work in 2009 to provide guidance on how warnings could take into account the communications needs of people without strong English speaking skills, including indigenous Australians. The results of this research were then incorporated into the second edition of the guide.

The guide was recommended in the First Interim Report of the Victorian Bushfires Royal Commission (VBRC)[4] as an excellent source document to guide warnings. It is being used as a reference document nationally by media and emergency services, including for *Emergency Alert*.

Training module

The National Broadcast of Emergency Warnings Project also identified that there was a lack of understanding between the media sector and emergency managers about each other's priorities, pressures and restrictions during an emergency and that this was a barrier to productive working relationships and effective warning processes. To address this issue, AGD developed the *Working Together in Emergencies* training module which was successfully piloted in Sydney in 2010. This pilot brought together representatives from all of the broadcast sectors and emergency management agencies from each State and Territory. It encourages an understanding of the differing roles and priorities in emergencies and the building of greater cooperation between the media and emergency management agencies. The training module was finalised following this trial and is being made available to all States and Territories and all broadcast sector peak bodies for their use as appropriate.

Further, through this project, increased contact and engagement between the peak bodies for the broadcast sectors and all States and Territories has been initiated and maintained. This has included annual combined stakeholder functions, input and participation in joint projects and events. Establishing this communication and relationship between the broadcast bodies and the jurisdictions has significantly aided the negotiations for developing the various jurisdictional agreements. It has allowed broad and productive discussions on issues affecting all parties in relation to warnings, and encouraged the broadcast industry to make the issuing of emergency warnings a higher priority. A reflection of this was the inclusion in late 2008 of a specific commitment to broadcast emergency warnings in the Code of Practice for the Community Broadcasters Association of Australia.

Development of a shared web presence <www.ag.gov.au/nbew> in late 2008 has allowed easy access for stakeholders and the public to information on relevant resources and the parties involved in the National Broadcast of Emergency Warnings Project.

[4] Recommendation 4.2

2.4 Common Alerting Protocol

The Common Alerting Protocol (CAP) is a "write-it-once, use everywhere" data format for exchanging emergency warning messages between various alerting technologies. CAP is an open-standard created by the international emergency management community and is available free-of-charge through the OASIS group[5]. It is being adopted by warning agencies internationally.

CAP enables a single warning message to be disseminated simultaneously over a wide variety of warning system technologies that understand and are able to process CAP-formatted messages. This allows warnings to be directed more effectively.

AGD is leading a project, in consultation with the States and Territories, for the national rollout of CAP to enhance interoperability between jurisdictional agencies and streamline and standardise the emergency warning process.

CAP enhances interoperability between emergency warning agencies, jurisdictions and governments as it enables the creation of warning messages that can be automatically actionable by machines and are thus not entirely reliant on human action. The benefits of CAP include that it:

- extends the reach of and enhances the effectiveness of all-hazard emergency warning messages
- is compatible with a broad range of information management and emergency warning systems, including broadcast radio and television, data networks, landline and mobile phones, internet, fax, pagers, sirens, billboards and electronic road signs as well as new and emerging technologies
- reduces costs and simplifies the work of emergency warning authorities by using a write-it-once method for issuing warnings over multiple dissemination systems without the need to duplicate effort, and
- can benefit those with specific communication requirements, including people who are Deaf or have a hearing impairment, people who are blind or have a vision impairment and non-English speakers who will be better served by consistent delivery of warnings and public-safety information through all available technology-based devices.

The provision of NEMP funding in 2009 allowed for completion of the CAP stage I project. Outcomes from this were that the Australian Government adopt the OASIS CAP standard, and that AGD be assigned responsibility to act as Custodian for the Australian profile of CAP.

The CAP Stage II project is currently underway and is intended to deliver a national standard for the CAP Australian Profile (CAP-AP) and establish a CAP Custodian resource within AGD. The CAP Standard produced in Stage II will be the product that is to be deployed to jurisdictions, government agencies and industry in 2012.

The planned introduction of the Australian Government standard for CAP-AP in 2011, will allow consistent cross-jurisdictional use of CAP messaging within future upgrades of State and Territory alerting system technologies. It will also enable Australia to contribute to the development of the future international CAP standards.

[5] Organization for the Advancement of Structured Information Standards, http://www.oasis-open.org/home/index.php

2.5 Best practice guidelines on communication needs of people with a disability

In February 2009, the National Forum on Emergency Warnings to the Community (NFEWC) agreed on the need to develop best practice guidelines on the communication needs of people with a disability across the prevention, preparedness, response and recovery phases of emergencies, including in respect to emergency warnings.

These guidelines are to be used as a tool to help emergency managers understand the requirements of people with a disability during an emergency. They are intended to be used in conjunction with existing State and Territory policies and procedures to enhance the delivery of public information and emergency warnings to people with disabilities.

AGD established a small working group, which it chairs, to draft the guidelines. The working group has representation from the: Victorian Department of Justice; Western Australia's Fire and Emergency Service Authority; Australian Federation of Disability Organisations (AFDO); Australian Communications Exchange (ACE); Australian Communications Consumer Action Network and Auslan (Australian sign language) Interpretation Services.

AGD is currently collaborating with ACE and AFDO to identify the best way forward for the drafting of the guidelines for consideration by the NFEWC. It is anticipated the final draft will be available for comment by stakeholders early in the new financial year.

2.6 The emerging role of social media in emergency communications

Recent disaster events, in Australia and internationally, have demonstrated the importance of social media, not only in delivering vital information to the community during emergency events, but in building relationships during the preparedness and recovery phases. Around Australia, emergency management organisations; government and non-government, public and private, are developing projects, publishing protocols and working with a whole web-full of new media tools to engage, inform and support Australian communities' disaster resilience.

New and emerging technologies offer opportunities to build stronger relationships across all stages of prevention, preparedness, response and recovery, however it is important that the opportunities, challenges and risks presented by these new tools are understood.

Connect! Workshop – new media in emergency management

A workshop on community resilience, emergency management and new media was convened by AGD at its Australian Emergency Management Institute on 14-15 April 2011.

This workshop enabled the emergency management sector to explore the way new media impacts on how they work, communicate, engage and inform. It was an opportunity to bring people together to showcase projects, brainstorm opportunities

and challenges and develop shared values in using new media for building disaster resilience. The workshop included case studies from the 2010/11 summer of disaster events. An outcome of the *Connect! Workshop* will be the publication of a roadmap of new media strategies across the emergency sector.

Further information about the Connect! workshop is available on the EMiA website at <www.ema.gov.au>

2.7 Australian Tsunami Warning System

AGD, Geoscience Australia and the Bureau of Meteorology jointly developed the Australian Tsunami Warning System (ATWS), at a cost of $68.9 million, following the 2004 Indian Ocean Tsunami. AGD had responsibility for the tsunami disaster risk reduction aspects of the project. This focussed on community and industry awareness raising, education and training.

The activities undertaken by AGD included national tsunami workshops for emergency managers and producing a suite of tsunami publications including brochures and activity sheets for children; an action guide; information sheets; Tsunami Community Education Kits for Aboriginal Australians in Remote Coastal Communities, and for Torres Strait Islanders; tsunami presentations and DVDs; an interactive CD rom and electronic game, and targeted education for Culturally and Linguistically Diverse groups and people with disabilities.

AGD also led the development and implementation of Exercise Ausnami in June 2009, a national ATWS exercise to test the system from the initial notification process through to the activation of response plans and arrangements. AGD assisted the Bureau to assess the ability of 14 Southwest Pacific countries to receive and respond to tsunami warnings.

In addition, AGD worked in partnership with Geoscience Australia to complete the National Tsunami Hazard Map and Inundation Modelling Project of three States and Territories. The next stage of the Hazard Map and Inundation Modelling Project is currently being progressed through AGD's NEMP program.

3. OTHER EMERGENCY COMMUNICATIONS INITIATIVES

3.1 Triple Zero Emergency Call Service

The Triple Zero Emergency Call Service (ECS) assists Australians in life threatening and time critical emergency situations by linking them to Police, Fire or Ambulance services. Responsibility for the ECS is shared between the Commonwealth[6] and the States and Territories in their capacity as first responders.

Under legislation, the Emergency Call Person (ECP), which is Telstra for 000 and 112 and the National Relay Service (NRS) for 106, initially receives and handles calls before transferring them to the relevant state or territory Emergency Service Organisation (ESO) for police, fire or ambulance response. Responsibility shifts from the Commonwealth domain to the States and Territories at the point that the ECP transfers the call through to the State and Territory ESO.

State and Territory ESO's are responsible for the organisation of emergency services communications in their jurisdictions, including staffing levels for their respective Triple Zero call centres, and for the dispatch of emergency assistance.

AGD is working with States and Territories to improve the effectiveness of the ECS, particularly in large scale emergencies and disasters, in line with recommendations of the VBRC[7] and related MCPEM-EM directives. In 2010, AGD enhanced and relocated the Triple Zero website to a more accessible domain, via the Australian Emergency Management Institute (AEMI) website, <www.triplezero.gov.au>.

AGD also coordinated the introduction of a National Protocol for the use of Tailored Recorded Voice Announcements in large-scale emergencies and disasters. This is designed to direct Triple Zero callers seeking information to an appropriate information source, such as a bushfire information line. Use of these announcements could assist to reduce the number of non-emergency calls made to the Triple Zero ECS and provide those with a genuine emergency need a faster and more effective response. All States and Territories and Telstra signed up to the National Protocol in 2010.

[6] The Minister for Broadband, Communications and the Digital Economy has portfolio responsibility for the regulation of Telstra's role as the ECP. The Australian Communications and Media Authority is the regulator for the 000 and 112 as well as the NRS 106 emergency call number (000 and 112 equivalent) for callers who are Deaf or have a hearing or speech impairment.

[7] Recommendation 12.3 of the VBRC's First Interim Report called on Victoria, through COAG, to promote more effective emergency call service arrangements throughout Australia.

3.2 Enhancing the resilience of critical communications infrastructure

The Attorney-General launched the Critical Infrastructure Resilience (CIR) Strategy on 30 June 2010. The aim of the CIR Strategy is the continued operation of critical infrastructure – including communication networks – in the face of all hazards, as this supports Australia's national defence and national security, and underpins our economic prosperity and social wellbeing. The CIR Strategy also supports disaster resilience efforts, as disaster resilience is strengthened where communities have continued access to essential services provided by critical infrastructure.[8]

3.3 Business-Government Partnerships Approach – Trusted Information Sharing Network

A significant proportion of Australia's critical infrastructure is privately owned or operated. The Australian Government recognises that the owners and operators of critical infrastructure are best placed to manage risks to their operations and determine the most appropriate mitigation strategies, through an intelligence-led, risk informed approach.

The Australian Government engages with the owners and operators of critical infrastructure through the Trusted Information Sharing Network (TISN) for Critical Infrastructure Resilience. The TISN is a forum in which the owners and operators of critical infrastructure work together and share information on threats and vulnerabilities and develop strategies and solutions to mitigate risk, and build resilience capacity within organisations.

The Australian Government also has the unique ability to bring critical infrastructure sectors together in a non-competitive environment to discuss and address cross-sectoral vulnerabilities within supply chains on a national and cross-jurisdictional basis. This cross-sectoral work makes a significant contribution to critical infrastructure resilience by recognising and addressing the cascade or knock-on impacts that can spread from one sector to another. Through the TISN, business is also able to bring issues to government that are seen as impediments to achieving critical infrastructure resilience.

The TISN comprises seven critical infrastructure Sector Groups (Communications, Energy, Banking and Finance, Health, Food Chain, Transport and Water Services) and two Expert Advisory Groups (Resilience and IT Security). Under the CIR Strategy, the Department of Broadband, Communications and the Digital Economy is the lead agency for the Communications Sector Group through which it works with carriers, broadcasters and other industry stakeholders to enhance the resilience of the sector.

[8] Attorney-General's Department website "Critical Infrastructure Resilience Strategy" - http://agate.agdnet.ag.gov.au/newsandevents/Pages/Departmental-News/In-Focus/In-Focus-2010/Launch-of-Critical-Infrastructure-Resilience-Strategy.aspx

3.4 Radiocommunications spectrum allocation

AGD represents the Australian Government on the National Coordinating Committee for Government Radiocommunications (NCCGR) and is also a member of the Law Enforcement and Security Radio Spectrum Committee (LESRSC). Both bodies are composed of representatives from across all jurisdictions, and they collectively represent the needs and interests of Australia's police, fire, emergency health and emergency services agencies (collectively, our public safety agencies (PSAs)).

AGD is actively involved in the arrangements to support the National Framework for Government Radiocommunications Interoperability which was endorsed by COAG in December 2009. That Framework aims to ensure that (among other things) all PSAs across Australia will have harmonised and interoperable radio systems and networks by 2020.

AGD is coordinating a nation-wide process regarding Australian PSAs' requirements for a mobile broadband communications capability. The PSA's require a capability that will provide first responders with mission critical support with applications that provide and support live high quality video (at, or above, the scene of an emergency) and imagery (including photographs, floor plans location information); the ability for first responders to send video from emergency scenes to decision makers; mobile command and control; telemedicine to provide remote and frontline medical assistance; real-time surveillance of incident scenes and persons; real-time image recognition (for example, photos of incidents, mass gatherings, persons-of-interest); real-time monitoring of personnel during operations; mobile robotics to assist in high-risk environments, and computer aided dispatch capabilities in the absence of fixed infrastructure. Although work is ongoing to further develop the best national approach, such a capability will need to meet the following high-level requirements:

- provide sufficient bandwidth to quickly exchange large amounts of data now and in the future, noting that during emergencies video streaming services alone will place high demands on specific points on a mobile broadband network
- enable interoperability throughout Australia and internationally. Australian PSAs will increasingly need to both offer assistance to, and receive assistance from, its international public safety partners – as seen by American fire-fighters supporting the 2009 Victorian bushfires, and Australian PSAs supporting the 2011 New Zealand earthquake and Japanese earthquake/tsunami response and recovery operations
- provide sufficient security to maintain the integrity of sensitive operational information, and
- meet Quality-of-Service parameters including sufficient coverage, and network resiliency and redundancy requirements for continuous and sustained high-volume communications throughout an emergency.

GLOSSARY

ACE	Australian Communications Exchange
AFDO	Australian Federation of Disability Organisations
AGD	Attorney-General's Department
ATWS	Australian Tsunami Warning System
CAP	Common Altering Protocol
CAP-AP	CAP Australian Profile
CIR	Critical Infrastructure Resilience
COAG	Council of Australian Governments
ECP	Emergency Call Person
ECS	Emergency Call Service
EMiA	Emergency Management in Australia
ESO	Emergency Service Organisation
IPND	Integrated Public Number Database
LBNS	Location Based Number Store
LESRSC	Law Enforcement and Security Radio Spectrum Committee
MCPEM-EM	Ministerial Council for Police and Emergency Management – Emergency Management
NCCGR	National Coordinating Committee for Government Radiocommunications
NEMP	National Emergency Management Projects
NFEWC	National Forum on Emergency Warnings to the Community
NRS	National Relay Service
OASIS	Organization for the Advancement of Structured Information Standards
PSA	Public Safety Agency
SEWS	Standard Emergency Warning Signal
TISN	Trusted Information Sharing Network for Critical Infrastructure Resilience
VBRC	Victorian Bushfire Royal Commission