Next Generation Triple Zero (NG000) Strategy Proposal

1 May 2014

Forward

The National Emergency Communications Working Group –Australia and New Zealand (NECWG-A/NZ) and the project Steering Committee, are pleased to present the outcome of the project known as the 'Development of Emergency Communication Services (Triple Zero) Policy, Framework, and Standards to Address Current and Future Community Expectations'. This outcome is the Next Generation Triple Zero Strategic Plan.

The plan has been developed with the support of the Australian and New Zealand Emergency Management Committee and funded through the National Emergency Management Program.

The plan builds upon an extensive a global environmental scan; and stakeholder engagement, to deliver a vision of the Triple Zero Service; the current challenges; and key actions required to ensure the Service continues to be a sustainable. national community focussed service.

The plan identifies nine key actions and recommends, in part, the development of a Business Case to incorporate strategies required to meet the Action Statements, including the Operating, Governance and Financial Models, and Engagement Framework to deliver the Next Generation Triple Zero (NG000).

The realisation of this plan will represent a generational change in the manner in which the Australian community and key industry stakeholders will interact with a future Emergency Communications Service, known as Next Generation Triple Zero (NG000).

The project Steering Committee, through NECWG-A/NZ, are committed to continuing the journey toward the Next Generation Triple Zero and commend the Strategy document to you.

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Glossary

AMSA	Australian Maritime Safety Authority
CAD	Computer Aided Dispatch
Community	All people in Australian territories and geography
CSP	Carrier Service Provider
ECP	Emergency Call Person
ECS	Emergency call service, currently delivered by Telstra and ACE
ECSAC	Emergency Call Service Advisory Committee
EENA	European Emergency Number Association
ESO	Emergency service organisation (Fire, Police, Ambulance services)
ESTA	Emergency Services Telecommunications Authority (Victoria)
Interoperability	The agreed standards to allow sharing of information and capacity between all parties (ECP/ESO)
ISP	Internet Service Provider
LCCSC	Law Crime and Community Safety Council
NECWG-A/NZ	National Emergency Communications Working Group - Australia/New Zealand
NEMP	National Emergency Management Program
NENA	National Emergency Number Association
NG000	Next Generation Triple Zero
PSAP	Public Safety Answering Point
Responders	The most appropriate ESO resource for an emergency
SCPEM	Standing Council for Police and Emergency Management
SES	State Emergency Service
SLSA	Surf Life Saving Australia
TZWG	Triple Zero Working Group

Executive Summary

Preamble

Established in 1961, the Emergency Call Service (Triple Zero) has served the Australian community effectively in managing emergencies and critical incidents. The resilience and success of the ECS can be attributed to: a national approach; one provider for Triple Zero (000) and one provider for 106; and, a strong collaborative approach between governments, Emergency Service Organisations, providers and carriers. The future success of the ECS will be guaranteed by enhancing this national collaborative approach, which will be leveraged to ensure the successful coordinated development, implementation and governance of NG000. The Next Generation Emergency Call Service will enable any person requiring emergency assistance to use any device anywhere anytime to connect to emergency services.

Situation and challenge:

- Today, only voice communications are available for communicating with emergency services operators, however the community is increasingly expecting more
- Rapidly changing technology means better quality information is available to better service the community. NG911 and NG112 in the US and Europe have taken advantage of these technologies to deliver a multi-channel capability resulting in improved community outcomes
- The current model, which remains effective, relies on service provision via an ECP however timing of ECP contract negotiation in 2016 presents an important opportunity to adapt to changing needs
- Failing to deliver on community expectations, remaining reactive and falling behind international best practice will affect public trust in Emergency Service Operators and the Government

Vision and benefits of NG000:

- Revolutionise the current Triple Zero service with a vision that any person in Australia requiring emergency assistance can use "any device, anywhere, anytime" to contact emergency services; to be known as NG000
- The NG000 vision is underpinned by three strategic pillars: (1) a multi channel approach, (2) interoperable systems and enabling technology and (3) an agile operating model which are supported by common principles of change management, regulation and employee capability and training
- Engagement, governance and funding are key enablers to the strategy and proposed framework for NG000
- To leverage the success of the current service which operates as a national system, the strategic pillars and enablers will deliver a common national approach
- Delivery of NG000 will result in improved outcomes for the community and continued value and integrity of the Emergency Call Service

Executive Summary

Key findings

This strategy proposal identified six key findings that defines the case for change; the requirements to deliver on community expectations; and, the requirements to develop the NG000:

Finding 1: Technologies are changing community expectations and global practices requiring a comprehensive omni-channel capability for ESOs.

Finding 2: Rapidly changing technologies are impacting the way people communicate requiring interoperable systems to support seamless and accurate communication of information between ESOs, and the community.

Finding 3: Triple Zero needs to be more innovative to ensure customer requests for emergency assistance are quickly actioned to reach the appropriate responder(s).

Finding 4: The Government, ESOs, community, vendors and industry all recognise the importance and need for the NG000; and support the vision of a dynamic, coordinated engagement model which elicits collaboration and innovation.

Finding 5: The gap in the current ECS environment is the lack of a multi-jurisdictional body that provides ongoing governance to the operating capability.

Finding 6: To encourage continual innovation, a transparent and flexible funding model that incorporates blended funding streams is required.

Executive Summary

Actions

These key findings led to the development of nine separate action statements:

1. Deliver a comprehensive omni-channel capability for receiving information which offers a consistently high quality of service and continually improves with emerging technologies

2. Develop interoperable and cost effective systems to support seamless and accurate communication of information across channels and between ESOs, respondents and the community

3. Develop an innovative framework to ensure customer requests for emergency assistance are received from multiple channels and quickly actioned to reach the appropriate responder via simple processes with multiparty involvement

4. Develop a dynamic, coordinated engagement model which elicits collaboration and innovation

5. The establishment of a multi-jurisdictional body that provides ongoing governance of the NG000

6. To develop a transparent and flexible funding model that incorporates blended funding streams

7. LCCSC endorse the continued development of standards and policy development via NECWG-A/NZ

8. Align with NENA to leverage current NG911 and existing policies and standards

9. Develop a Business Case for Next Generation Triple Zero (NG000)

Recommendations:

- That the Law Crime and Community Safety Council (LCCSC)

    - Endorse the vision and strategy of Next Generation Triple Zero (NG000)

    - Endorse the development of the Business Case that incorporates the development of strategies required to meet the Action Statements, including the Operating Model, Governance Model, Financial Model and Engagement Framework to deliver Next Generation Triple Zero (NG000)

    - In line with the SCPEM endorsement for the Next Generation Triple Zero (NG000) strategy proposal recommended by the Triple Zero Working Group (in June 2013), LCCSC endorse the continuation of NECWG-A/NZ as the responsible party for delivery of the Business Case.

(1) Context and vision

Context and Background

Development of the Next Generation Triple Zero (NG000) initiative was recommended by the National Triple Zero Working Group and endorsed by SCPEM to be progressed by NECWG-A/NZ

In Australia, currently only voice communications (other than 106) are available for communicating with emergency services operators, however based on community adoption of new technologies the community is increasingly expecting more	- Other than 106, the Emergency Call Service (ECS) has operated by relying on voice communications since its inception in 1961. In contrast, the community is increasingly using data driven emerging technologies for communication - Recent national events such as the Victorian Bushfires (2009), Queensland Floods (2011) and NSW Bushfires (2014) have evidenced the importance and benefit of social media in allowing emergency services to communicate and connect with large communities - There is a growing public expectation that ESOs can interact and use these technologies to support notification, alerting, response, and preparation between the community and the ESOs
Next Generation 911 and Next Generation 112 have been developed in the US and Europe in response to community needs for more diversified access to emergency services	- International events such as the Virginia Tech shootings (2007), Norwegian shootings (2011), and Hurricane Sandy (2012) have evidenced the power and community reliance on alternative communication channels (e.g. SMS, social media) during an emergency and dire consequences of these technologies not being available - These events, among others, have motivated ESOs globally to act in developing Next Generation emergency services. Specifically, next generation emergency services strategies have been developed internationally, both in the United States and the European Union (Next Generation 911 and Next Generation 112 respectively)
The development of NG000 is seen as a key focus and the project has gained funding through the National Emergency Management Program (NEMP) to progress the initiative. The National Emergency Communication Working Group – Australia and New Zealand (NECWG-A/NZ) has been endorsed to support delivery	- The Triple Zero Working Group (TZWG) was established in 2010 as a result of the Victorian Bushfire Royal Commission. In 2011, Triple Zero underwent an enterprise architecture review from which recommendations were made to the Standing Council on Police and Emergency Management (SCPEM) to explore NG000 - The NECWG- A/NZ was supported by National Emergency Management Program (NEMP) with funding to progress the future of NG000. The NECWG-A/NZ consists of representatives from Australia, New Zealand, ESOs, Commonwealth representatives and telecommunications providers - The NG000 project was initiated in 2010 through a series of workshops to scope the concept of NG000 and to seek funding for further development. In February 2014, NECWG-A/NZ facilitated a NG000 workshop the output of which included endorsement of this strategic document

Approach to proposal development

The development of the strategic proposal for NG000 and future state blueprint was supported by an environmental best practice scan, stakeholder consultation and a stakeholder workshop

To develop the case for change, recommended governance framework, standards and national policy for NG000 and Future State Blueprint

1
Conducted an **environmental scan** of ECS governance models, best practices, development, standards and community influences both Nationally and Internationally

2
Consulted with key stakeholders across the ECS sector regarding the objectives of the NG000 project including a 2-day workshop with 33 participants representing a cross section of emergency, federal government, carriers and community organisations

3
Deliver a **proposal for change** which supports the vision of "any device, anywhere, anytime" and sets out common design principles for three strategic pillars: (1) a multi channel approach, (2) interoperable systems and enabling technology enabled through (3) an agile operating model

- This document identifies the case for change and provides a strategic proposal for NG000 and future state blueprint including:
  - A vision for NG000
  - Recommendations for a sustainable model for NG000 and design principles relating to:
    - Operating model, people and capabilities
    - Systems and technology
    - Governance
    - Funding
    - Channels
    - Engagement
- The strategic proposal addresses digital and mobile technologies, available now and into the future, and achieves the balance between delivering customer and Emergency Call Service's benefits, while maintaining the important quality, accuracy, and sustainability requirements of this critical service

Vision and framework

This document focuses on the vision of NG000 by addressing the drivers of change, strategic pillars to deliver the future vision and key enablers to the strategy

NG000

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Vision for NG000

Any person in Australia requiring emergency assistance can use "any device, anywhere, any time" to contact emergency services

Drivers for Change

| Community expectations are changing | Technology is rapidly changing | Better quality information is available to service the community | Global practices are shifting | Timing of ECP contract presents an opportunity to address changing needs |

Strategic pillars and vision for the future

Strategic Goal 1: Multi channel approach

Customers can contact Triple Zero via a multitude of channels through a comprehensive omni-channel capability which offers a consistently high quality of service and continually improves with emerging technologies

Strategic Goal 2: Interoperable systems and enabling technology

Interoperable systems are in place to support accurate and efficient communication of information between ESOs, ECP and the community which maximise available systems and data

Strategic Goal 3: Agile operating Model

Customer requests for emergency assistance can be quickly actioned by the appropriate responder via simple processes with multiparty involvement

Consistent underlying principles:

Employee capability and training
Regulation / legislation
Change management

Enablers to strategy

Key Enabler 1: Engagement

Government, ESOs, the community, carriers, vendors and industry all understand and support the vision of NG000 supported through a dynamic, coordinated engagement plan which elicits collaboration and innovation

Key Enabler 2: Governance

A multi-jurisdictional body, that provides ongoing governance to the operating capability ensuring a trusted system and service excellence

Key Enabler 3: Funding

A transparent and flexible funding model that incorporates blended funding streams and enables innovation

(2) Drivers of change

Why do we need to transform the current Triple Zero service?

The delivery of a sustainable emergency call service to meet community expectations and rapidly changing technology is not possible under the current operating model

Drivers for Change

Technology is rapidly changing

Better quality information is available to service the community

Community expectations are changing

Global practices are shifting

Timing of ECP contract presents an opportunity to address changing needs

The development of NG000 is key to responding to the drivers for change. Government, ESOs, carriers, industry and the community must work together to deliver a NG000 service or risk:

- Adverse outcomes for community

- Remaining at status quo which is not cost effective

- Having no control over new contact channels resulting from emerging technology

- Loss of value and integrity of the Emergency Call Service (Triple Zero service)

- Increased risk to public safety

- More incidents resulting in loss of life due to failure to connect with emergency services

- Having no drive or process for continuous improvement to meet ever increasing community expectations

Drivers for Change

| Community expectations are changing | Technology is rapidly changing | Better quality information is available to service the community | Global practices are shifting | Timing of ECP contract presents an opportunity for change |

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Why do we need to transform the current Triple Zero service?

The Triple Zero service does not currently meet changing communication expectations for being able to communicate via channels other than voice

Community expectations are changing

- Research into callers of Triple Zero, Crime Stoppers, and non emergency patient transport together with PwC's research on emerging consumer and technology trends confirm that community behaviours and the desire for alternative methods of communication have significantly shifted

- Improvements in mobile and digital technologies mean that for many customers, capturing and transmitting text, images, video and data are common practices and with this comes the expectation that businesses and government services keep pace

- High reliance on voice limits access to emergency services in certain situations. There are many situations where members of the community are unable to use voice, reverting to other means to contact emergency services. For example, during the Virginia Tech University shooting in 2007, dozens of students and staff attempted to send texts to 911 trying to get help, however this capability was not available . In these types of situations transmitting text, images or video would expedite ESO response and increase public safety, in addition to providing evidentiary and other information needs

- Today, Gen X/Y are seeking alternatives to voice communications using emerging technologies which may result in the creation of unreliable communication channels (e.g. inappropriate apps or using Facebook to ask friends to contact emergency services)

- The Emergency Call Person (ECP) currently lacks the required infrastructure to meet the needs of diverse community groups. Specifically, there is no capability for foreign languages nor for specific requirements of disability groups. Today, deaf or hearing impaired persons are extremely limited in accessing Triple Zero. These communities greatly benefit from the use of emerging technologies including text and image to communicate in other aspects of their lives
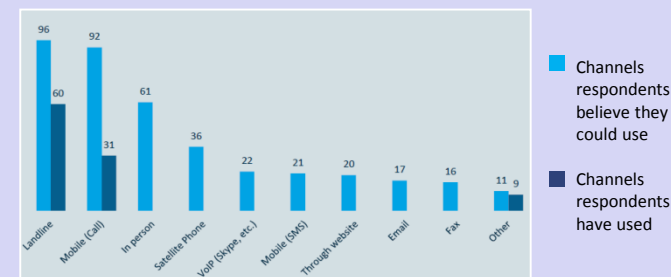
What does this mean for NG000?

Failure to respond to the changing expectations of the community is resulting in emergency communications not being received and diverse community groups not being able to access Triple Zero services. Failure to act may result in a failure of communications and cost increases to mitigate damage.

Case studies

There is uncertainty in the community around how the Triple Zero service operates and the process involved. Some members of the community believe they are able to contact Triple Zero via SMS, website, email and fax which are not currently available[1]

Legend:
- Channels respondents believe they could use
- Channels respondents have used

Data values: Landline 96 / 60; Mobile (Call) 92 / 31; In person 61; Satellite Phone 36; VoIP (Skype, etc.) 22; Mobile (SMS) 21; Through website 20; Email 17; Fax 16; Other 11 / 9

In Australia, there is lower awareness of Triple Zero services among younger age groups and members of the community from non-English speaking backgrounds[1]

When a gunman was prowling the halls of Virginia Tech University on April 16, 2007, on a shooting rampage… dozens of students and staff attempted to send texts to 911 trying to get help, however this capability was not available[2]

On 22 July in Norway, Anders Breivik fatally shot or wounded numerous students on Utoeya Island, many of those students attempted to text 112[2]

References:[1]Woolcott Research, DBCDE Triple Zero Research Study, June 2012, [2]Next Generation Triple Zero, A more effective emergency call service throughout Australia, Presentation Document, 2013

Community expectations are changing | Technology is rapidly changing | Better quality information is available to service the community | Global practices are shifting | Timing of ECP contract presents an opportunity for change

NG000

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Why do we need to transform the current Triple Zero service?

Taking advantage of rapidly changing technology for better quality information, would allow Triple Zero to more quickly assist people in need

Technology is rapidly changing	Better quality information is available to service the community
• The Emergency Call Service (ECS) has operated by relying on voice communications since its inception in 1961. In contrast, the community is increasingly using data driven emerging technologies for communication. In Australia and globally, making use of new technologies has proven vital to communication with communities during large scale natural disasters • Technology is rapidly changing with new smartphones and tablet devices being released every every year which offer increasing sophistication and capabilities. Moreover the environment of technology is changing allowing organisations to deliver more targeted digital solutions at lower costs. To adopt modern technologies, private sector and government need to have flexible platforms and mechanisms in place to allow for innovation and integration • Current legislation and regulation have not kept pace with the proliferation of new technologies. For example, there are currently no consistent standards for VoIP and as new communication channels are introduced, consistent standards will be needed to minimise risk to emergency responders and the public	• The ECS is experiencing challenges due to the current voice only telephony and limited data channels. Today, in Australia, it is not possible to automatically identify the location of callers using mobile phones. As calls have shifted from fixed and land line sources to mobile and VoIP technologies, the ECS and emergency responders are losing visibility of caller location, inhibiting emergency response. Enabling these technologies will allow for a greater quality of information to better service the community • A broader range of channels will increase the ability to locate callers, providing greater situational awareness, enhance reporting and evidentiary needs, ultimately saving time and cost. For example, greater information may lead to increased success of prosecutions, reduced court cost, increased intelligences for agencies and better health outcomes • Increasing sophistication of technology gives greater access to information (big data) which may allow for better profiling of calls and prediction analytics to optimise response teams and reduce wait times

Case studies

The community strongly support that SMS, Apps, Web and video calling should be available in the future[1]	More than 41,000 calls were made nationally to the Triple Zero line on the day of the Victorian bushfires, of which 10,678 went unanswered. In contrast, during the 2011 Queensland Floods, Police used Facebook to communicate with the community resulting in 170,000 "friends" kept aware of issues and over 40,000,000 hits to the site[2]	…in Terrey Hills, NSW, a man stumbled upon the collapsed body of a jogger who had had a heart attack. He called Triple Zero, but wasn't sure exactly where he was…because it was so hard to pin down the jogger's location, it took an hour for emergency services to find him. The man died[2]	The Next Generation 911 and 112 systems provide location-based routing to the appropriate PSAP to allow for dynamic diversion of traffic and acquires and integrates additional data useful to call routing and handling[3]

What does this mean for NG000?

Making better use of available technologies has allowed emergency services to better address community needs during natural disasters. Failure to keep pace with technology results in services which do not meet the needs of the community	*Through the use of technology, better quality information will be available to the ECS and responders which would rapidly enhance location information, leading to more accurate and efficient dispatch and an increased chance of saving lives.*

References: [1]Woolcott Research, DBCDE Triple Zero Research Study, June 2012, [2]Next Generation Triple Zero, A more effective emergency call service, throughout Australia, Presentation Document, 2013, [3]PwC, Next Generation Triple Zero, Environmental Scan, Nov 2013

Drivers for Change
Community expectations are changing | Technology is rapidly changing | Better quality information is available to service the community | Global practices are shifting | Timing of ECP contract presents an opportunity for change

NG000

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Why do we need to transform the current Triple Zero service?

Ability to leverage solutions and learnings from NG911 and NG112 and the 2016 ECP contract renegotiation provides an opportunity to implement change

Global practices are shifting	Timing of ECP contract presents an opportunity to address changing needs
• In response to changing community needs, the United States and the European Union are evolving their emergency call services under the banner of Next Generation 911 and Next Generation 112 respectively. These initiatives are aimed at updating the service infrastructure to improve public emergency communications services. The services rely on application functionality across an emergency services IP network to deliver voice, video, text, calls to Public Safety Answering Points (PSAPs) driving flexibility in channel use • Australia can learn and benefit from the strategies of Next Generation 911 and 112. Moreover the service solutions can be leveraged which should result in a reduction of costs and accelerated delivery of NG000. For example, leveraging their communication plans, training materials or system designs to accelerate delivery • Furthermore, a recent alliance between NECWG-A/NZ and next generation supporting organisations specifically, the National Emergency Number Association (NENA, 911) and the European Emergency Number Association (EENA, 112), will enable sharing of experiences allowing strategies and solutions to be leveraged	• Next Generation emergency services require an increasingly agile, multi-skilled workforce who are able to take on new or altered responsibilities. All involved staff will be expected to undertake new training on a regular basis in line with technical rollout as part of the NG000 operating model. Staff serving the existing traditional channels will need to be trained for the full suite of new services to be able to combine and transfer media, and to provide callers with alternative channel information when necessary • The Emergency Call Service contract is expected to be released for tender in 2015/16. This offers the ECS an unique opportunity to incorporate alternative channels for communication, designed in line with the new operating model for NG000

Case studies (Global practices are shifting)

Next Generation 9-1-1 and 112 services have delivered significant benefits to their communities, notably:
- Greater interoperability to support coordinated incident response
- Support for changes to address future needs and new technologies
- Adding flexibility for PSAPs and authorities through transfer between channels
- Location information is transmitted with the call (real time) [3]

Case studies (Timing of ECP contract)

Core learnings relating to people and operations from NG9-1-1 include:
- Education is an integral part of implementation
- Almost all emergency communication and response workers will be expected to take on new and/or altered responsibilities
- Training roll out should be ongoing alongside project technical rollout
- All staff will require knowledge of all channels to facilitate sharing of information across channels [3]

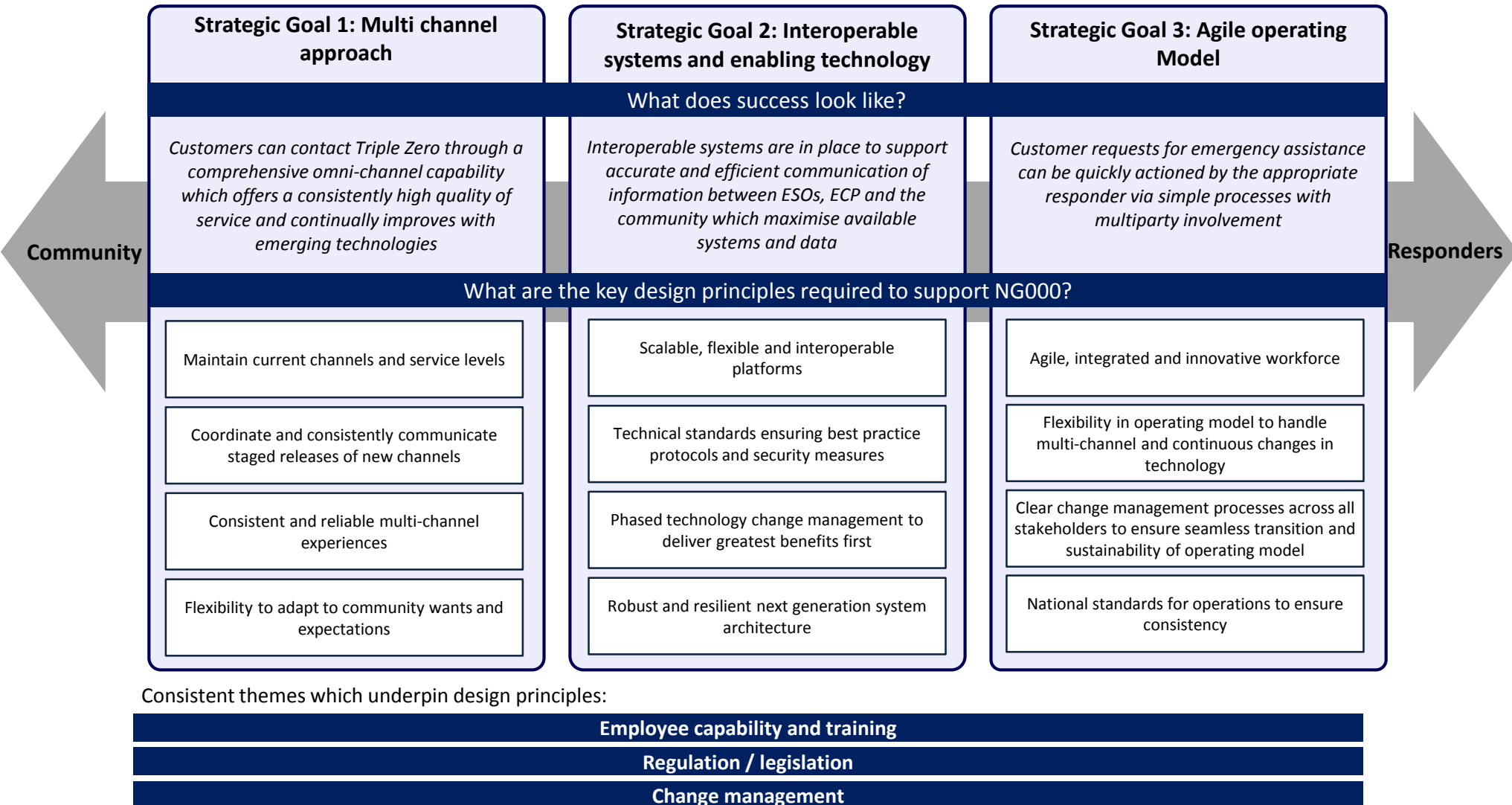| What does this mean for NG000?	
Australia has significant opportunity to leverage solutions and strategies from US NG911 and European NG112 in the delivery of NG000 services to ensure a best practice approach, greater efficiencies and minimise delivery costs	*Australia has a timely opportunity to renegotiate ECP contracts to prepare their service for a next generation operating model*

References: [3]PwC, Next Generation Triple Zero, Environmental Scan, Nov 2013

③ Strategic pillars and key design principles
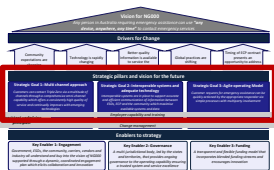
Strategic pillars and vision for future

Delivery of the NG000 vision is dependent upon achieving three strategic goals enabling seamless multi-channel communication from the community to responders

Community → **Responders**

Strategic Goal 1: Multi channel approach	Strategic Goal 2: Interoperable systems and enabling technology	Strategic Goal 3: Agile operating Model
What does success look like?		
Customers can contact Triple Zero through a comprehensive omni-channel capability which offers a consistently high quality of service and continually improves with emerging technologies	*Interoperable systems are in place to support accurate and efficient communication of information between ESOs, ECP and the community which maximise available systems and data*	*Customer requests for emergency assistance can be quickly actioned by the appropriate responder via simple processes with multiparty involvement*
What are the key design principles required to support NG000?		
Maintain current channels and service levels	Scalable, flexible and interoperable platforms	Agile, integrated and innovative workforce
Coordinate and consistently communicate staged releases of new channels	Technical standards ensuring best practice protocols and security measures	Flexibility in operating model to handle multi-channel and continuous changes in technology
Consistent and reliable multi-channel experiences	Phased technology change management to deliver greatest benefits first	Clear change management processes across all stakeholders to ensure seamless transition and sustainability of operating model
Flexibility to adapt to community wants and expectations	Robust and resilient next generation system architecture	National standards for operations to ensure consistency

Consistent themes which underpin design principles:

Employee capability and training

Regulation / legislation

Change management

Strategic pillars and vision for the future

| Strategic Goal 1: Multi channel approach | Strategic Goal 2: Interoperable systems and adequate technology | Strategic Goal 3: Agile operating Model |

Strategic Goal 1: Multi channel approach

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What does success look like?

Customers can contact Triple Zero through a comprehensive omni-channel capability (e.g. SMS, VoIP, Social Media, Video and Mobile Applications) which offers a consistently high quality of service and continually improves with emerging technologies

What is driving this goal?

Improving technologies to meet changing community expectations and global practices towards delivering emergency services

Design principle	Description	Considerations
Maintain current channels and service levels	Ensure traditional emergency services (voice over landline and mobile) are maintained without disruption as voice is likely to remain the most common channel for contact response centres	• Development of an implementation roadmap, governance structure and risk mitigation strategy for building new channel capabilities with channel delivery prioritised based on community impact, service improvement potential (i.e. prioritise channels which provide location data) and cost/time to deliver (i.e. considering how to best leverage currently available technologies) • National education and awareness program to advise availability of channels while highlighting any limitations • Quality monitoring of channels (voice, text, video) using business endorsed partners
Coordinate and consistently communicate staged releases of new channels	Ensure a staged release of new technology which is consistent across states/territories paired with sufficient communications to ensure public awareness of the availability of technology	
Consistent and reliable multi-channel experiences	Ensure service equivalence irrespective of channel, understand how channels will work together, build capability to facilitate communication across all channels and allow multiple conversations to exist concurrently, at the discretion of the service operator, especially over SMS and live text. This needs to be paired with adequate staffing and training to ensure reliability of services and seamless transitions	• An engagement framework between key players within the sector to ensure processes, roles and responsibilities are clearly defined • Opportunity to leverage NG911 approach to define emergency calls in this model and how they are handled • Regulation as an enabler to ensure consistency in service provision and experience
Flexibility to adapt to community wants and expectations	Ensure channel offerings keep up with new and changing technology and meet expectations of the community with particular emphasis on people with disabilities and non-English speakers. Understand key benefits of individual technologies and leverage each channel to maximise its capability (e.g. social media to communicate with large groups during a natural disaster)	• Opportunity to leverage key learnings from international experiences for developing capability and ensuring success across all channels • Cost benefit assessment of delivering new channels which includes an assessment of community needs, demand impacts and broader societal benefits in developing a business case for change • Outsourcing and monitoring of social media

Key risks to multi channel approach and mitigation

Risks	Varying functionality and reliability due to inherent technology/systems risks	Potential for longer processing time by ESOs due to complex channel model	Options result in confusion for the public and/or they are not aware of limitations of individual channels	Sufficient staffing/monitoring across channels	Greater potential for non-genuine communications due to more access channels
Mitigation strategy	*Centrally managed implemented systems run in parallel to existing infrastructure*	*Implement KPIs to monitor quality and processing times*	Undertake coordinated and consistently communicated staged release of new channels	*Undertake recruitment and work-force re-engineering to pool /combine resources to ensure efficient operations*	*Industry to review unwanted calls code for non-genuine response penalties*

Strategic pillars and vision for the future

| Strategic Goal 1: Multi channel approach | Strategic Goal 2: Interoperable systems and adequate technology | Strategic Goal 3: Agile operating Model |

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Strategic Goal 2: Interoperable systems and enabling technology

What does success look like?

A cost effective, agile and interoperable system is in place that meets the needs of a contemporary community now and into the future to support seamless and accurate communication of information across channels and between ESOs

What is driving this goal?

Rapidly changing technologies impacting the way people communicate and enabling better quality information to service the community

Design principle	Description	Considerations
Scalable, flexible and interoperable platforms	NG000 requires common interoperable platforms supported by a standard IP network, common data structures between ESO and the community, CAD systems and customer data analysis streams, in all states and jurisdictions. Systems and protocols to be flexible (to allow for call routing and adding participants), scalable and resilient with the ability to evolve over time as needs change which is cost-effective to deliver	• Leverage NENA and EENA systems architecture and standards in design • Engage with vendors/suppliers to understand capacity and best approach to deliver • Monitoring of capacity, transaction times and message sizes as KPIs
Technical standards ensuring best practice protocols and security measures	Standards should be defined for ESO, networks and customer equipment in line with technical standards which consider interfaces, resilience of systems, capacity of transactions, message size and data management responsibilities (centrally routed or locally stored). Moreover, standards should ensure IP protocols leverage current best practice security measures	• Working group with identified champions to develop technical standards which are aligned to the operating model and support the development of the portal leveraging NENA and EENA material • Potential to adopt a national web portal with inherent functionality to allow a coordinated release across all states and jurisdictions
Phased technology change management to deliver greatest benefits first	Formal change management practices should be implemented across all affected systems and technologies with decision making ensuring the outcomes that deliver the greatest benefit are rolled out first. This means prioritising gathering location information as quickly and accurately as possible, especially as location will not always be verbally (or otherwise) explicitly provided	• A formal change management strategy • Engage stakeholders to agree phasing of systems and technology changes
Robust and resilient next generation system architecture	Robust and resilient next generation systems have back-up systems in place, with duplication of components running in parallel, communications routing over multiple geographies/paths where possible and use cloud architecture where possible to facilitate a reduction in physical hardware, inter-connected architecture and potentially faster repairs	• Upfront system design specification including back-up systems to ensure robustness and assessment of ability to achieve communications routing or cloud architecture • Monitoring of systems availability

Key risks to systems and technology and mitigation

Risks	Lack of funding will inhibit the successful implementation of systems and technologies	Inability to co-ordinate nationally will risk response times for emergency situations	Inability to deal with more complex and greater scale of information in a timely fashion may slow response times	Finding and retaining resources and skills for technical support	Voice service support suffers with adverse outcomes
Mitigation strategy	_Implement a flexible funding model that can draw funding from multiple sources_	_Develop a national working group to take ownership of national co-ordination and implementation with a central solution_	_Run implemented systems in parallel to existing infrastructure and allow longer engagement for vendors and agencies requiring more integrated solutions_	_Develop appropriate lead time, adequate training and resource management_	_Longer lead time, greater engagement, ensure maintenance of existing KPIs and ensure carriers are ready and/or funded for change_

Strategic pillars and vision for the future

| Strategic Goal 1: Multi channel approach | Strategic Goal 2: Interoperable systems and adequate technology | Strategic Goal 3: Agile operating Model |

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Strategic Goal 3: Agile Operating Model

What does success look like?

Public requests for emergency assistance can be quickly actioned by the appropriate responder via simple processes with multiparty involvement

What is driving this goal?

Changing community expectations means Triple Zero needs to be more innovative in the future and the timing of ECP contracts presents an opportunity for change

Design principles	Description	Considerations
Agile, integrated and innovative workforce	An agile approach to system design focuses on developing a working base model which iterates through continuous rounds of improvement. By taking this approach, NG000 will anticipate changes to customer needs, stay abreast of technology and continuously innovate and improve through Research and Development to provide increasingly better services leading to stronger abilities to detect non-genuine messages, customer analytics and predictive analysis	• Engaging with community to understand needs and wants from a next generation system and co-design the end user experience • Engaging with vendors/suppliers and encourage the private sector to drive innovation
Flexibility in the operating model to handle multi-channel and continuous changes in technology	NG000 requires an operating model which can adapt to changes in technology and user habits with flexibility in people, process and methodology. Moreover, flexibility needs to be applied to ensure capability for disparate legacy and next generation systems to operate simultaneously	• Comprehensive, on going training programmes for understanding the operating model and principles, as they evolve, to ensure efficiency • SLA's allowing for sufficient flexibility to cope with changing services
Clear change management across all stakeholders to ensure seamless transition and sustainability of operating model	To deliver NG000, change management strategies and key principles for future fundamental changes to the operating model need to be articulated. This includes identification of all stakeholders (including ECPs), their roles within NG000 , responsibilities and interrelationships. Communication plans for all affected stakeholders are required to boost awareness and involvement and inform them of what, how and when next generation services will be available and how they will be affected	• Clear change management and communications strategy • Help/assistance centre focused on supporting local authorities and end-users during transition • Ongoing planning to ensure sustainability by having sufficient human, physical, financial and information resources
National standards for operations to ensure consistency	Consistency in process guidelines among states /territories and other communities is important for ensuring the effectiveness of NG000 by allowing for simple centralised analysis of operations. Consistency can be created through regulation, local involvement and active provision of information. Moreover, agreed standards to allow sharing of information and capacity between all parties supports interoperability of systems	• Review of domestic and international guidelines and legislation / regulation • Standards which demonstrate best practice and meet needs of all jurisdictions • Ongoing monitoring against quality and technical standards

Key risks to operating model and mitigation

Risks	Insufficient funding to support development and maintenance of operating model and ongoing costs of R&D	Operating model becomes too complex and large to simplify for all key stakeholders to understand	The operating model is not applicable for end to end users including ECP, ESO, carriers and government and/or not all states/territories adopt NG000	Inability to re-establish SLA's for new model as current regulatory model cannot be applied	Limitations of current people and capacity
Mitigation strategy	*Implement a flexible funding model that can draw funding from multiple sources*	*Simplify the operating model and engage frequently and consistently with all stakeholders throughout the transition to ensure understanding and alignment*	*Undertake detailed operating model design with consideration of all stakeholder groups in change management to ensure widespread applicability*	*Engage with vendors and regulators early to ensure the operating model design is in keeping with SLA's which can be established*	*Define new skill sets, undertake work for re-engineering, targeted recruitment and ongoing training*

Strategic pillars and vision for the future

| Strategic Goal 1: Multi channel approach | Strategic Goal 2: Interoperable systems and adequate technology | Strategic Goal 3: Agile operating Model |

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Key considerations across the strategic pillars for SMS, mobile apps and video

SMS

Benefits:
- Ability to communicate without audibly raising alarm
- Cater to minority groups (e.g. hearing impaired, tourists)
- Ability to efficiently manage multiple calls related to the same emergency with less strain on call centre resources
- Widespread popularity of SMS to communicate

Challenges:
- Accesses and character limitations
- Potential for lag times in conversation and/or messages get out of sync
- Ability to manage multiple conversations
- Unknown costs to ESOs and third parties
- Identifying location (i.e. no MoLi)
- Difficulty to deliver within legacy system

Actions to address:
- Potential to educate the public on the limitations and challenges (above) thus making other channels more attractive
- Cost benefit analysis including assessment of current infrastructure/systems capabilities (NRS)

Design principles:
- Assess options for provision of location data
- Define process including connections to ECP/3rd party, direct connection to carriers and confirmation of message being received by caller and 3rd party
- Utilise existing NRS service where possible

Draft scenario operation:
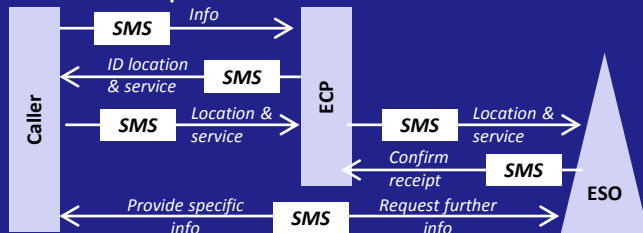
Mobile apps/ Real time text

Benefits:
- Ability to communicate without audibly raising alarm
- Near-infinite capabilities in programming
- Improved communication and coordination for large scale emergencies (e.g. with large scale emergency events, communication from one source to many recipients would allow centralised alerts to go to many responders and the community where appropriate)
- Ability to combine media to validate identity and ascertain location details via push GPS

Challenges:
- Consistency of business rules and validation of "caller" info
- Management of large numbers of applications to execute messaging
- "Call taker" skill set including language and preparedness for exposure to graphic images through video
- ESO capability uplift in systems, technology and resources

Actions to address:
- User registration at login/download
- Requirement for increased support, training and preparation
- Data management policy and "centralised" data storage
- National certification
- Commitment to technology improvement program

Design principles:
- Flexibility across all platforms and applications
- Video quality control
- System capable of handling data, video and voice
- Connection to real time data sources such as IPND

Draft scenario operation:
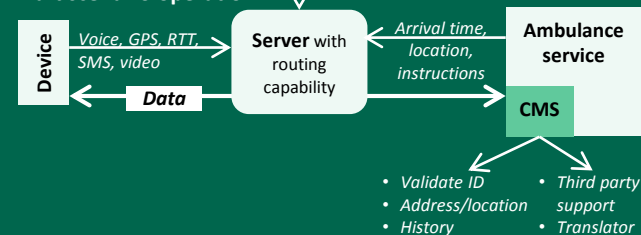
Video

Benefits:
- Ability to communicate visually for people with disabilities
- Ability to send rich real-time information to responders

Challenges:
- Channel abilities to cater to those with disabilities
- Ability to transmit compressed video on cellular networks
- ESOs require text/voice initiation and verification to enable correct response
- Video may have multiple purposes beyond request for services (e.g. information, evidence for later use)
- Training of call takers
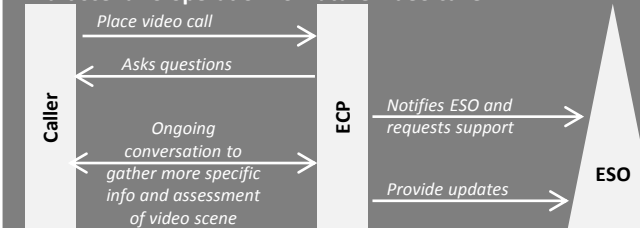- Management of community expectations for immediate response to videos sent

Actions to address:
- Role of 'video' (e.g. as supplementary mechanism), the role of ECPs and ESOs
- Video sharing principles (e.g. with all ESOs, ECP will not see video) and the return image for 2-way conversation
- Data storage, archiving and privacy considerations
- Authentication of images and management of abuses

Design principles:
- Standards for latency, jitter, picture resolution, file size limitations and back-up channels in case of fault
- Interoperability of FTP between ECP & ESO
- Adequate verification capability

Draft scenario operation for future video caller:

Strategic pillars and vision for the future

| Strategic Goal 1: Multi channel approach | Strategic Goal 2: Interoperable systems and adequate technology | Strategic Goal 3: Agile operating Model |

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Key considerations across the strategic pillars for social media and Web/VoIP

Social media

Benefits:
- Open/public nature to communicate with a large group with shared interests
- Improved communication and coordination for large scale emergencies (e.g. 1 to many interactions)
- Ability to communicate without audibly raising alarm
- Cater to individuals with certain disabilities

Challenges:
- Managing communications and risk of raising panic or delivering false perceptions
- Identifying location
- Defining benefits versus potential higher costs to deliver (e.g. technical, HR moderator, analytics capability)
- Capability may be limited under federal control
- Ability to facilitate a 2-way conversation
- ECP and ESO capability for text and social media monitoring

Actions to address:
- Conduct research of benefits to drive evidence based business case for change giving consideration as to whether social media should be a contact model or offer proactive responses
- Establish national model for social media capability, including decision whether to mandate or encourage use

Design principles:
- Text enabled ECP
- Social media capability and monitoring at ESO level

Draft scenario operation for one way conversation:
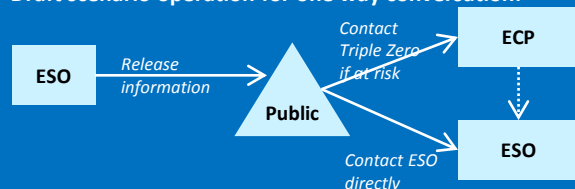
Web/VoIP

Benefits:
- Ability to ascertain location data, nature of event and maintain ongoing communication
- Wide-spread use of voice communication which is expected to continue to be the primary form of communication

Challenges:
- Triple Zero adopting VoIP technology
- Obtaining up-to-date customer data from the CSP
- Every VoIP service provider would need to know the address of the appropriate ESO to send call to
- ESO would need to communicate unique ID for premises that can produce accurate address
- Ability to use IVR to determine ESO required (e.g. police, fire)

Actions to address:
- Legislate that VoIP devices must have a registered device ID and address
- Ability for ESO's to gain direct read access to ECLIPS and ability to use IVR to determine respondent
- VoIP service providers need to update control database with customer information e.g. address and have unique ID

Design principles:
- VoIP service providers must be able to receive Triple Zero calls and forward to appropriate ESO based on devices location
- ESOs need to be able to accept location information from VoIP service providers

Draft scenario operation for VoIP call to Triple Zero:
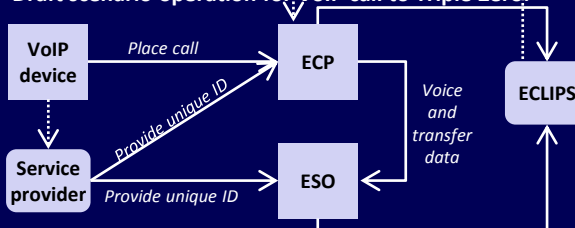
Case Study:
Next Generation 9-1-1 and 1-1-2

International events such as the Virginia Tech shootings (2007), Norwegian shootings (2011), and Hurricane Sandy (2012) have evidenced the power and community reliance on alternative communication channels (e.g. SMS, social media) during an emergency and dire consequences of these technologies not being available.

These events, among others, have motivated ESOs globally to act in developing Next Generation emergency services. Specifically, next generation emergency services strategies have been developed in the United States and the European Union (Next Generation 911 and Next Generation 112 respectively).

These next generation emergency services include functionality across multiple channels (voice, video, text, calls to PSAPs) driving flexibility in channel use with systems enabled to processes all types of emergency calls including non-voice multi media messages.

The combination of various channels also allow a "conversation" to originate via one channel and grow to others (this is the concept of "total conversation") and allows additional participants to be added and removed seamlessly (e.g. language interpreters).
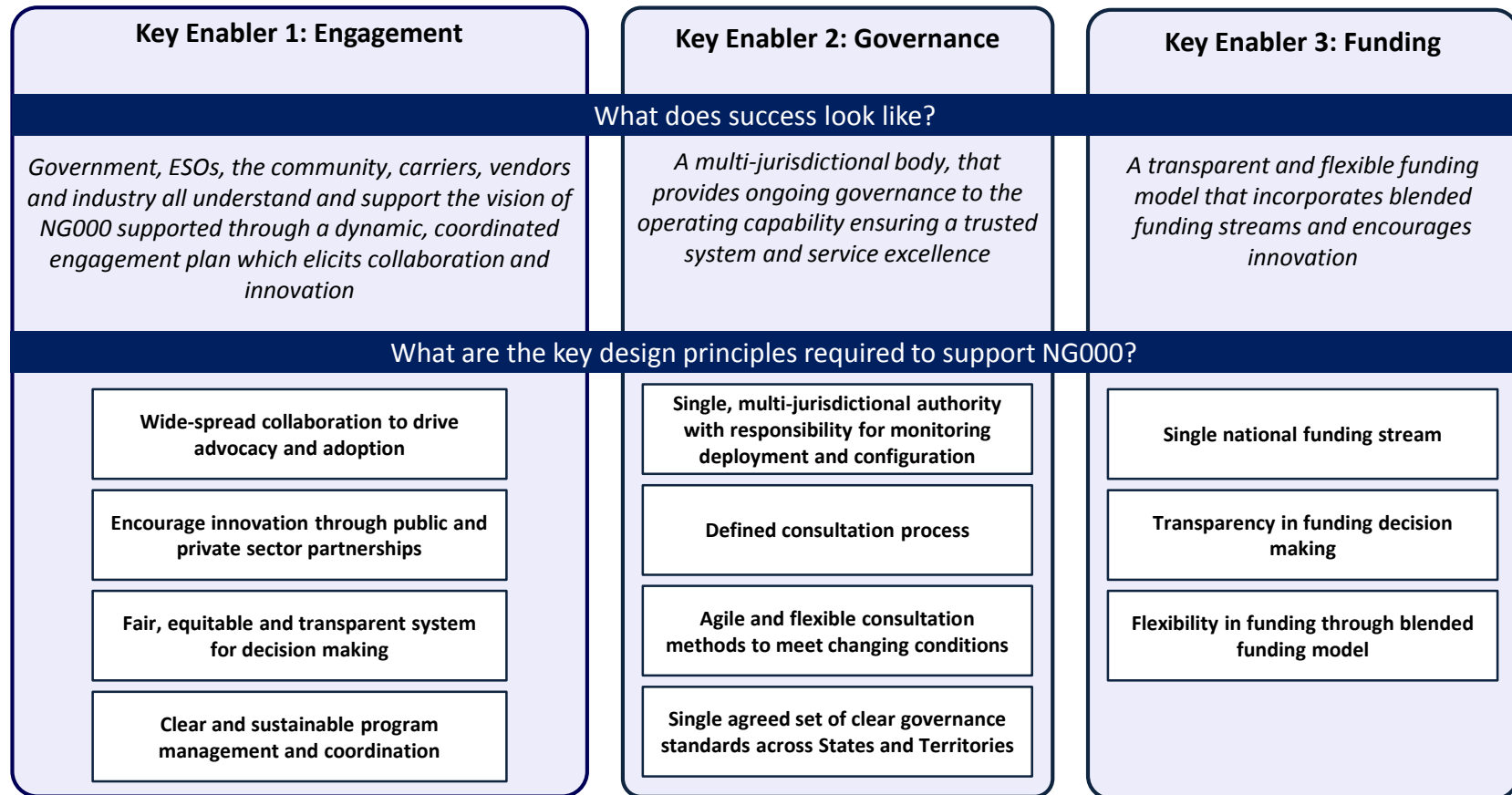
Implementation of next generation services has lead to positive community outcomes both in the US and Europe.

4 Enablers to strategy
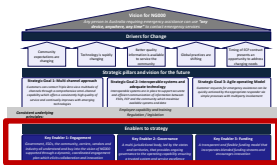
Key enablers

The NG000 strategic goals are enabled through stakeholder engagement, clear governance and a transparent and flexible funding model

Key Enabler 1: Engagement	Key Enabler 2: Governance	Key Enabler 3: Funding
What does success look like?		
Government, ESOs, the community, carriers, vendors and industry all understand and support the vision of NG000 supported through a dynamic, coordinated engagement plan which elicits collaboration and innovation	*A multi-jurisdictional body, that provides ongoing governance to the operating capability ensuring a trusted system and service excellence*	*A transparent and flexible funding model that incorporates blended funding streams and encourages innovation*
What are the key design principles required to support NG000?		
Wide-spread collaboration to drive advocacy and adoption	**Single, multi-jurisdictional authority with responsibility for monitoring deployment and configuration**	**Single national funding stream**
Encourage innovation through public and private sector partnerships	**Defined consultation process**	**Transparency in funding decision making**
Fair, equitable and transparent system for decision making	**Agile and flexible consultation methods to meet changing conditions**	**Flexibility in funding through blended funding model**
Clear and sustainable program management and coordination	**Single agreed set of clear governance standards across States and Territories**	

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Key Enabler 1: Engagement

What does success look like?

Government, ESOs, the community, carriers, vendors and industry all understand and buy into the vision of NG000 supported through a dynamic, coordinated engagement plan which elicits collaboration and innovation

Design principles	Description	Considerations
Wide-spread collaboration to drive advocacy and adoption	Collaboration with Government, ESOs, the community, vendors, carriers and industry will ensure partners are engaged, government policy is better informed, the vision of NG000 is understood and stakeholders understand the value of the program overall and to them individually to drive adoption and advocacy. Politics should be minimised to ensure wide engagement is not constrained.	• Timely communication about current activities clearly articulating the burning platform e.g. via media release, spokes person or the web • Forums for information dissemination and open dialogue with the community • Government buy-in by identifying champions within local council and Territory/State /Federal governments • ESO Champions identified • Promotion and awareness of the next generation program by leveraging citizens and organisations as community champions
Encourage innovation through public and private sector partnerships	A collaborative design environment engaging both members of the public and private sector focussed on innovation will drive best in breed ideas, foster cost effectiveness for the benefit of ESO and Government and will assist in driving the sustainability of NG000.	• Industry collaboration events (e.g. "hot house") involving public and private partners to yield innovations through an open and collaborative environment • A panel of researchers to foster information and knowledge sharing within the emergency services sector • Expert panel of members to guide and accelerate implementation and inform policy and funding decisions
Fair, equitable and transparent system for decision making	A fair and equitable procurement policy which is commercially inclusive, transparent and independent to drive corporate and community trust. In addition, ensure integrity in decision making to drive engagement of partnerships. Actions need to demonstrate professionalism with decision making that is free from bias and self interest to ensure continued support.	• Standard information and key messages for dissemination to ensure consistency and fairness in information provided
Clear and sustainable program management and coordination	Provide a sustainable and dynamic program which is coordinated, efficient and well managed. Ensure a clear communications strategy and plan is in place which is flexible and dynamic in approach to adapt to the changing requirements and needs.	• Advisory board to align objectives and ensure continued focus on citizen • Clear engagement strategy and protocols for stakeholder groups • Work with Federal Departments communications to modify USO and STS • National engagement approach which demonstrates value to partners

Key risks to engagement and mitigation

Risks	Lack of funding/budget would limit engagement program impacting messaging, buy-in and collaboration events	Communications and messaging are complicated and misinterpreted leading to community confusion in emergency situations	Commercial conflict leads self interest and hidden agendas, reducing the impact of the program and optimal outcomes community	Elements of NG000 fail and lead to community distrust
Mitigation strategy	*Implement a flexible funding model that can draw funding from multiple sources (see funding enabler)*	*Develop clear and consistent national communications by trialling campaigns with customers and actioning feedback*	*Set up an expert panel of members to guide and accelerate implementation and inform policy and funding decisions*	*Develop appropriate strategies including response and communications for any failures in the system*

Enablers to strategy		
Key Enabler 1: Engagement	Key Enabler 2: Governance	Key Enabler 3: Funding

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Key Enabler 1: Engagement

Community

The community encompasses the population who could use the NG000 service including non-English speakers and people with special needs. Ubiquitous reliable access, network coverage, quick response times and adaptability to changing technology are important to the community to enable them access to all ESO's by multiple channels. The community need to be made aware of channel availability and consulted to co-create solutions which offer a user friendly experience.

For the community, NG00 means unrestricted access to ESOs, greater patient outcomes, increased public safety and increased accessibility to public resources.

Policy / regulators

In designing NG000, policy is not to be prescriptive with states/territories implementation, but rather to follow consistent standards and principles and adhere to policy outcomes. Policy bodies include the Department of Communications, Attorney-General's Department, State policy departments (i.e. DPC, Justice, ESO, Health, Transport) and other international bodies. Regulators include ACMS, ACCC, State Consumer Affairs and the Productivity Commission. The policy bodies and regulators are interested to understand the 'why', 'what', and risks of the NG000 vision including risks of market disruptions, any new regulations required and cross purposes of policy. In addition, engaging with them will provide opportunity for international collaboration, ensure appropriate power to set clear policy directions and alignment to community outcomes.

Responders

Responders include Ambulance Services, Fire and Rescue, Police, ESTA, SES, AMSA, SLSA, Border Protection Agencies and essential utilities. For responders, NG000 means having a more informed appropriate response, improved efficiencies, greater engagement with the community, new technologies, policies and procedures and a new model of operations leading to better community outcomes. As part of NG000, responders will require new information (e.g. location), technology and methods of engaging with the community across channels. Responders are likely to be concerned with issues relating to change management and failure to achieve national standards.

Vendors

Vendors include CAD systems providers, service providers and telephony systems providers. For vendors, NG000 means an opportunity for new business, to increase their customer base, to develop a partnership and increase revenue. Vendors will be focussed on making a decision as to whether they can and should invest based on the projected revenue streams, level of investment required and compliance. In designing NG000, vendors will need visibility of standards and agreed SLA's. Vendors will be concerned with complexity, level of demands, achieving clarity on standards and their competitive position.

Future players

Future players include callers, users, technology vendors, developers of apps and systems, designers and other agencies. Future players seek innovation and will need to be met with a framework which encourages innovation, offers a flexible and empathetic approach however has clear regulation and decision making process. For them, NG000 means an opportunity to think outside the box and to help to better meet community needs.

Carriers

Carriers include major telecommunications companies, Carriage Service Providers (CSPs), Internet Service Providers (ISPs), content service providers and other access providers who manage packets of data and have capability to access the ECS.

Understanding of customer expectations, project feasibility, costs, projected volumes, links to ESOs, standards, liability and timelines (minimum 9-12 months) are most important to carriers to allow them to assess their capability to participate in NG000.

Case Study: NG911 Industry Collaboration Events (ICE)

Vendor testing through NENA sponsored events bring together vendors in an open, supportive, and collaborative environment fostering technical cooperation. Next generation ICE Steering Committee seats represent the vendors, government users and buyers, other industry associations, government organizations, NENA Technical and Operations Committee Leadership and NENA Senior Staff. Benefits of the industry collaboration events include innovation in solutions, cost effectiveness of implementation and robustness of standards.

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Key Enabler 2: Governance

What does success look like?

A multi-jurisdictional body, that provides ongoing governance to the operating capability ensuring a trusted system and service excellence

Design principles	Description	Considerations
Single, multi-jurisdictional authority with responsibility for monitoring deployment and configuration	A multi-jurisdictional body will provide overarching governance to drive consistency in state action. Local state and territory leaders will retain primary responsibility in their area for deployment and configuration of NG000 and governance to provide technical and operational expertise with support from the commonwealth. The multi-jurisdictional body will be connected but independent of legislators and regulators.	• Long term governance body arrangements • Champions and advocates to drive endorsement and adoption • Leverage existing bodies such as NECWG-A/NZ and the Emergency Call Service Advisory Committee (ECSAC) to support the initiative
Defined consultation process	Engagement with community and industry will be required at certain times. This can be managed through routine/standing consultation with government liaisons and advisers, specialists in operations, technology and law. Technical sub committees will define next generation architecture / design and a working group will be responsible for operational standards.	• Immediate opportunities for conversation e.g. via external website • Emergency Number Association (or similarly-named body) with wide-ranging membership including emergency services reps, solution providers and Members of Parliament
Agile and flexible consultation methods to meet changing conditions	Minimal resource overheads will be contributed to the multi-jurisdictional body with membership at appropriately senior level. Flexibility in membership and/or consultation methods will be required to meet changing conditions and gaps in subject matter knowledge.	• Implementation Committee structure to assist in rapidly incorporating new programs and organisations into the departmental environment. The use of 'oversight committees' in addition to the formal 'standing' committee structure can be effective in a large department
Single set of clear governance standards across states	States and territories need to agree on elements of governance relating to setting standards, resolving disputes, approving funding, monitoring and evaluating systems.	• National plan for NG000 to align against standards, principles and measures of success of the new framework and operating model • Ongoing monitoring and compliance of NG000 against standards

Key risks to governance and mitigation

Risks	Loss of independence and influence	Conflict of interest leading to division among state and body members	States/territories not supporting governance model	Bureaucracy inhibits progress
Mitigation strategy	*Monitor and assess success of governance framework*	*Clear standards are set and signed off*	*States and territories to sign off on initial governance model*	*Multi-jurisdictional governance body to sign up to key deliverable timelines to drive outcomes*

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Key Enabler 3: Funding

What does success look like?

A transparent and flexible funding model that incorporates blended funding streams and encourages innovation

Design principles	Description	Considerations
Single national funding stream	A national financial model will be needed to sustain the operation of NG000 into the future.	• Agreement on single national funding stream
Transparency in funding decision making	To ensure equity and transparency, an agreed funding models needs to sustain the present position and provide for the future state, factoring in items such as research and development (R&D) and promotion. Identify the links to state communication strategy projects and gain agreement at the individual state level	• Documentation of current funding model • Analysis of benefits, limitations and gaps of current model to future state
Flexibility in funding through blended funding model	Blended funding streams incorporate flexibility in budget between operating and capital expenditure which encourages innovation. A blended model may be suggested for enhancements and include contributions from end users, grants, ESOs and industry levy's.	• Articulation of alternative flexible models and benefits with funding drawn from multiple sources • International models to devise example options within a blended model • Plan to manage paradigm shift around who pays

Key risks to funding and mitigation

Risks	Gaining public, industry, federal and state buy-in and acceptance	Increased costs using a blended model	Timelines for review may be lengthy if they need to go across departments
Mitigation strategy	*Engage in extended consultation which identifies benefits to stakeholders*	*The national funding model will operate to ensure that funding through a blended model is managed efficiently*	*Assess options for reviews to minimise delays*

⑤ Findings and Actions

Finding 1:

Improving technologies are changing community expectations and global practices towards delivering emergency services requiring a comprehensive omni-channel capability for receiving information which offers a consistently high quality of service and continually improves with emerging technologies

Actions

Develop an implementation roadmap, governance structure and risk mitigation strategy for building new channel capabilities with channel delivery prioritised based on community impact, service improvement potential and cost/time to deliver

- Develop an engagement framework between players within the sector to ensure processes, roles and responsibilities are clearly defined

- Leverage NG911 approach to define emergency calls in this model and how they are handled

- Identify and advocate for appropriate Regulation as an enabler to ensure consistency in service provision and community experience

- Establish a model for cost benefit assessment of delivering new channels which includes an assessment of community needs, demand impacts and broader societal benefits in developing a business case for change

Finding 2:

Rapidly changing technologies are impacting the way people communicate and enabling better quality information to service the community requiring interoperable and cost effective systems to support seamless and accurate communication of information across channels and between ESOs, respondents and the community

Actions

Leverage NENA and EENA systems architecture and technical requirements in platform design

- Develop active and agile engagement framework with vendors/suppliers to understand capacity, best approach to deliver, and monitoring of development roadmaps

- Establish working group/s with identified champions to develop technical standards which are aligned to the operating model and support the development of the portal leveraging NENA and EENA material

- Develop a national web portal with inherent functionality to allow a coordinated release across all states and jurisdictions

- Establish a governance framework including a formal change management and communication strategy and engage stakeholders to agree phasing of systems and technology changes

- Ensure and influence system design specifications including back-up systems to ensure robustness and assessment of ability to achieve communications routing or cloud architecture

Key Findings and Recommendations

Finding 3:

Changing community expectations means Triple Zero needs to be more innovative in the future to ensure customer requests for emergency assistance are received from multiple channels and quickly actioned to reach the appropriate responder via simple processes with multiparty involvement

Actions

- Develop an active and agile engagement framework with the community to understand needs and wants from a next generation system and co-design the end user experience

- Develop and work with ESOs to develop comprehensive, on going training programmes for understanding the operating model and principles, as they evolve, to ensure efficiency

- Advocate for SLAs allowing for sufficient flexibility to cope with changing services

- Develop a help/assistance centre focused on supporting local authorities and end-users during transition to new service capability

- Develop a governance model that continually monitors and reviews domestic and international guidelines and legislation / regulation and define standards which demonstrate best practice and meet needs of all jurisdictions

Finding 4:

The Government, ESOs, community, vendors and industry all recognise the importance and need for the NG000 and support the vision of a dynamic, coordinated engagement model which elicits collaboration and innovation

Actions

- Develop an engagement model that provides timely communication about current activities clearly articulating the burning platform e.g. via media release, spokes person or the web

- Establish State/local forums for information dissemination and to foster open dialogue with the community

- Identify champions within local council and state government for the promotion and awareness of the next generation program

- Develop and industry collaboration events (e.g. "hot house") involving public and private partners to yield innovations through an open and collaborative environment

- Establish and maintain a panel of researchers to foster information and knowledge sharing within the emergency services sector

- Establish and maintain an expert panel of members to guide and accelerate implementation and inform policy and funding decisions

- Ensure the engagement model aligns objectives and ensures continued focus on citizen

- Engage and work with Dept. of Communications to modify USO

Finding 5:

The gap in the current ECS environment is the lack of a multi-jurisdictional body that provides ongoing governance to the operating capability to a trusted system and service excellence

Actions

- Establish a multi-jurisdictional body that will provide overarching governance to drive consistency in action. Local state and territory leaders will retain primary responsibility for deployment and configuration of next generation 000 and governance to provide technical and operational expertise with support from commonwealth. The multi-jurisdictional body will be connected to but independent of legislators and regulators
- Develop a business case to establish this body leveraging existing capability and alliances through the National Emergency Communications Working Group (NECWG-A/NZ) and the Emergency Call Service Advisory Committee (ECSAC)
- Ensure the long term governance arrangements require minimal resource overheads to be contributed to the multi-jurisdictional body with membership at appropriately senior level.
- Establish immediate opportunities and avenues for NG000 conversation e.g. via external website

Finding 6:

To encourage continual innovation, a transparent and flexible funding model that incorporates blended funding streams is required

Actions

- Develop a national financial model to sustain the operation of NG000 into the future.
- Ensure the financial model demonstrates equity and transparency, an agreed funding model needs to sustain the present position and the future state, factoring in items such as research and development (R&D) and promotion. Identify the links to state communication strategy projects and gain agreement at the individual state level
- Ensure the financial model incorporates blended funding streams enabling flexibility between operating and capital expenditure which encourages innovation. A blended model may include contributions from end users, grants, ESOs and industry levy's

6 Next steps

Next steps
To progress NG000, the priority next step is to gain endorsement of the vision and strategy from the NECWG-A/NZ and other stakeholders

FY14-15	FY15-16

• Develop and submit the Business Case for the NG000 model including:
   • The operating model
   • The financial model
   • Engagement framework
 	
• Establish immediate opportunities and avenues for NG000 conversation (e.g. via external website)
 	
• Coordinate the multi-jurisdictional requirements for inclusion in the 2016 ECP market test exercise
 	
• Finalise development of NG000 standards / guidelines for:
   • SMS
   • Mobile apps / Real Time Text (RTT)
   • Video
   • Social Media
   • Web / VoIP
 	
• Develop and equip NECWG-A/NZ members to allow internal dissemination and clearly articulate burning platform
 	
• Leverage alliance between NECWG-A/NZ, NENA and EENA to further undertake research and development strategy
	• Complete establishment of the NG000 strategy and proposed model (assuming Business Case is endorsed)
	
	• Develop and implement change management strategy (if not earlier)
	
	• Finalise communication and marketing strategy
	
	• Media engagement for NG000
	   • Community forums
	   • Stakeholder
	   • Champions
	   • ESO
	
	• Monitor further development in emergency communications market including industry research/projects
	
	• Trials on SMS to Triple Zero
	
	• ECP Tender goes to market

⑦ Appendix

Participants

Key stakeholders were consulted across the ESC Sector regarding the objectives of the NG000 project including a 2-day workshop with 33 participants representing a cross section of emergency, federal government, carriers and community organisations

Attendees at Wellington NECWG-A/NZ workshop

Craig	Anderson	Public Safety Business Agency QLD
Chris	Beatson	NSW Police
Tony	Bedington	Fire & Rescue NSW
Kevin	Blake	NT St John Ambulance
Glen	Brown	VIC Fire
Simon	Davey	ACE
Jane	Elkinson	Telstra
Peter	Ferguson	VIC Police
Will	Glenn	VIC Fire
Nicky	Green	NZ Ambulance
Glenn	Horton	QLD Police
Jim	Jeffrey	SA Police
Jeff	King	QLD Fire and Emergency Services
Michael	Kiernan	ESTA
Kieran	Kortegast	NZ Police
Richard	Lane	NZ Ambulance
Iain	Lynn	NZ Fire
Lance	Martin	WA Police
Steve	Moir	SA Fire
Steve	Moore	QLD Ambulance
Ashley	Morris	WA St John Ambulance
Mark	Morrow	ACSES
Ben	Piper	VIC Ambulance
Paul	Reason	NSW Police
Tania	Shackleton	NZ Telecom
Andrew	Strachan	TUSMA
Dave	Trappitt	NZ Police
Matthew	Vanderbyl	QLD Police
Jamie	Vernon	NSW Ambulance
Don	Wallace	NZ Police
Katy	Wilkinson	NZ Ambulance
Stephen	Wilson	NZ Intergraph

Attendees at PwC 2-day workshop

Craig	Anderson	Public Safety Business Agency QLD
Jim	Anderson	Attorney Generals Department
Chris	Beatson	NSW Police Force
Kevin	Blake	NT St John Ambulance
Peter	Bull	National Broadband Network (NBNCo)
Steve	Cameron	SA Ambulance
Jane	Elkington	Telstra
Michael	Elseggod	Optus
Peter	Ferguson	VIC Police
Wayne	Hawkins	Australian Communications Consumer Action Network
Michael	D'Alton	TAS Fire
Glenn	Horton	QLD Police
Michael	Kiernan	VIC ESTA
Damian	Mahoney	Dept of Communications
Lance	Martin	WA Police
Steve	Moir	SA Metropolitan Fire Service
Steve	Moore	QLD Ambulance
Ashley	Morris	WA St John Ambulance
Mark	Morrow	ACSES
Joe	Murphy	ACT Emergency Services Agency Communications
Greg	O'Ryan	ACT Police
Alexander	Osborne	Vodafone Hutchison Australia
Ben	Piper	VIC Ambulance
Brendan	Smith	TAS Ambulance
Keith	Staniforth	AFP
Andrew	Strachan	TUSMA
Peter	Sutton	ACMA
Jamie	Vernon	NSW Ambulance
Greg	Wild	Fire & Rescue NSW