INFRAWORKS
Mission Critical Services

Submission to Queensland Government Enquiry Brisbane Flood Event 2011

Community warning system technologies

Overview

InfraWorks Pty Ltd is a 100% Queensland owned company that specialises in mission critical services and critical technology developed for the community safety areas of Australia.

InfraWorks combines its own personnel with extensive police and emergency services experience with industry partnerships including APCO Australasia and National Safety Agency as a technology integration and supply partner. It also has engaged with Emergency Management Australia to better understand the requirements to support national and international disaster support for multiple agencies.

As a R&D company involved in community and alerting technologies we have developed supplier partnerships in various areas of technologies to combine intelligent and resilient community warning designs suitable for use in all disaster risk locations.

In 2007 InfraWorks using knowledge and experience gained from events such as Canberra Bushfire, Cyclone Larry and internationally Hurricane Katrina to develop a first generation public safety remote communications service as NSA01. This allowed satellite access and wireless communications to allow all agencies access to broadband services in disaster areas and was warmly welcomed in the industry.

Based on the business intelligence gained from discussions with NSA and government agencies including the CFA InfraWorks began development of NSA02 the second generation solution. One of the major issues was the transfer of business requirement from emergency services to community safety in emergency alerting and community recovery /resilience.

NSA02 Development (community warning and resilience)

After the Victorian Fire Emergency in 2009 InfraWorks began an extensive review of business requirements and technologies which included information gained from the Victorian Fire Emergency Royal Commission where a number of issues were identified. This was done in partnership with APCOA and NSA.

It was noted that community alerting required that was real time and factual containing information on the threat, the required action for the community and steps for recovery were covered. This was also developed in response to the speed and delivery of the mobile solution in allowing more time for

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valuable police and emergency services resources to assist in areas of evacuation including hospital, nursing homes and safe exit route traffic management which were all covered in the report.

Key items considered included:

- Inter operatability to support local communities, Centrelink, Local Government, Utilities etc
- Mobility to deploy emergency alerting and community recovery in areas of most need, assed daily and to cover a wide range of fire and flood and other situations including protection for large community events
- Resilience to mobile phone network congestion or outages through power loss or heavy use
- Multiple local alerts with real time wide area PA and LED signs with escalating threat warning lights, allowing for warnings and alerts and general safety messages post event in recovery phase
- Ability to deliver emergency alerting with long term community recovery and resilience support
- Ability to cover large groups of people in flexible environments
- Ability to connect full mobility with UHF radio, PABX and wireless to increase on ground intelligence
- Ability to cover multiple formats for disability groups and multi language support
- Ability to provide local area live video feed and support security of property in post disaster recovery phase including in community recovery areas for long term support
- Integration with ABC local radio to provide PA coverage extension of ABC emergency and recovery information

Additional GSM phone Emergency Network:

As part of the technology InfraWorks together with NSA identified a remote satellite to GSM mobile phone solution which provides for the following:

- Allow for multiple carrier access including international phones carried by overseas visitors with no hardware handset changes
- Intelligent routing of 911,999, 112 dialed numbers to 000
- Full independent of subscriber account details
- Intelligent restricted access during event to 000 and SES 132500 and post event to additional numbers including centrelink and phone banking support.
- Remote satellite access in areas where no mobile phone coverage is available or services are disrupted
- Ability to provide emergency alert sms to all handsets in the local area regardless of network

ACMA Trial approval process:

This service has in principle support from ACMA for evaluation licensing (6 month) which would be licensed under NSA and made available for evaluation use in various situations. The ACMA license also

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requires government agency support to ensure an appropriate business requirement is established under ACMA policy.

InfraWorks believes the additional GSM service would be most valuable in Queensland due the wide range of risks and multi cultural society areas.

QLD Government Services

Since development various demonstrations have been undertaken of the technology to local government with state government agency interest welcomed as well. A demonstration at Gold Coast City Council identified the need for such solution however it was referred to state agencies for adoption.

A number of offers to Queensland Government to have the technology deployed and evaluated have been made to various government agencies in light of the severe threat assessment over the summer period of 2010/2011. This included cyclone, storm, flood and fire risks over the period.

In response emails indicated that the existing provisions for emergency alerts would be sufficient during this time and InfraWorks has continued to provide the technology on both stand by and pre deployment to Queensland Government for Brisbane flood and Cyclone Yasi events.

InfraWorks has developed the solution under its own funding (approx. 300K) to which some service costs to cover deployment are indicated through NSA as non for profit would allow further R&D and services to be added. Service costs with full deployment support were provided and balanced on the delivery and support of the services again with emphasis on freeing up police and emergency services resources.

Brisbane Flood response

Whilst working with QLD Water Police in St Lucia during the Brisbane Flood event InfraWorks personnel were present when a group of Chinese students were having difficulty understanding the alert warning and evacuation message. This was one of the areas of NSA02 design which allowed for multiple language support to assist emergency services and police in these situations and could have assisted.

We would reasonably expect that deployment of NSA02 into the Gatton into affected areas could have been achieved with sufficient time to assist in the urgent evacuation of the area with details on safe exit routing. The mobile application would have allowed large areas of coverage in support of local police and emergency services resources. It must be highlighted the use of NSA in demo mode could have assisted in this area and provided valuable assistance and heightened the importance of evacuation immediately to the wider community.

Fixed and mobile community warning system development

InfraWorks has been working on the development of resilient community warning solutions which includes the key recommendations of the Victorian Fire Royal Commission for intelligent warning system which provide multiple alerts from warnings to urgent alerts and provide the community with valuable

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safety direction information on how to evacuate and what to do post event for safety and movement. These in high risk areas where risks are identified can be over fixed systems with multiple communications path resilience and power systems to ensure delivery and survival. Standardised warnings systems including SEWS delivery into mine and resource areas where large groups of mobile workforces exist with little local knowledge are our priority. These have been based on engineered developed from NSA02 to extend on coverage into remote areas. We fully support adoption of intelligent warning systems rather than simple siren systems which have been shown to create confusion and lack of detailed information to the community. Re broadcast of approved SEWS use into areas such as remote mine sites and other areas is part of this development and this includes use of the SEWS to indicate the level of urgency for the community to take note and immediate action.

The current adoption and development of the mobile and fixed telephone services provided under the COAG funded Emergency Alert program and also private systems such as the Emergency Warring Networks we believe is best supported with additional technologies to ensure best delivery of community alerts.

- Areas where power is turned off for community safety
- Areas where high pre disaster communications traffic slows or prevents delivery of alerts
- Areas where mobile phone coverage is not available
- Higher public use of VoIP and other phones requiring back up power
- Areas where NBN service reliant on power supplies maybe affected
- High use of multiple carriers by users and high visitor rates with overseas SIM services

As has been evident in both the Brisbane Flood and Cyclone Yasi events both power and telecommunications are linked and maybe affected for long periods of time. These are areas where the delivery of information can be improved both pre and post event when community members.

Community Broadcasting:

We believe greater assistance with technologies to ACMA licensed community broadcasters can also provide increased warning delivery to multi cultural non English speaking community groups in the future.

NSA02 was developed to allow for PA rebroadcast of community radio where required.

Resources:

Flood alerting demonstration with NSA02 http://www.infraworks.net.au/ercu You tube video file

NSA web site http://www.nsa-aust.com.au/

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Additional Information:

InfraWorks Mr. Mark Parsons and NSA senior management Mr. Des Bahr are available to provide evidence before the enquiry on any of these areas under discussion to assist.

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