

## **RadComms Conference Melbourne April/May 2008 – Bob Waites**

### **Introduction**

You have heard Tony Gates representing NCCGR talk about the need for interoperability of radio, at the same time spectral efficiency for radio use, and the inferred preference for whole of government, and therefore more efficient and effective use of government funding for the purchase and maintenance of radio systems.

For all of us there is a need to look at how that works within and across governments. Impacting on government users are our own internal departmental policies and practices, the competition for government funding, and the availability of government funding in a society that operates with limited tax payers and high community expectation, with often dramatic areas of radio coverage requirements.

### **Police Position - History**

For policing in particular this conundrum is one which has been conscientiously considered but not really challenged until recent rapid growth in radio use and spectrum requirements.

In the 1970s following Cyclone Tracy in Darwin there was an awareness of the problems created without radio interoperability between police jurisdictions and other Emergency Management systems. The response to that disaster was led by police organisations jointly from right across Australia. Because of the damage to the NT police systems and equipment, the various police and emergency organisations not only responded with personnel, but also with vehicles and communications equipment. The level of devastation was such that there was little infrastructure to provide a common network. Consequently the various responding emergency groups, for a considerable period of time, operated in communications silos. For this reason a decision was taken after Cyclone Tracy to provide common radio spectrum for all public safety organisations across Australia in the area of 450 to 470MHz band. The intention at that time was that all public safety organisations would move their radio

networks into that band so there was the potential and capability for interoperability across such organisations for the whole of Australia.

Police organisations right across Australia then began to move into that band of radio spectrum, which became known as the “64 Channel Block”, more recently named as Law Enforcement and Public Safety (LEPS) Spectrum.

Following the first recognised Terrorist attack in Australia, The Hilton Bombing in 1978, and the growing awareness of terrorism which was highlighted by a number of airline high-jackings overseas, there was recognition of a need for interoperable radio spectrum specifically for counter terrorism response operations under the National arrangements. In the 1980’s eleven radio channels were established, and with the acknowledgement that they needed to be reserved for immediate use, a decision was taken to place them outside the 450-470MHz band and they were allocated in the 480-490MHz band. As terminal equipment predominately operates across a 70MHz band span it meant that equipment used in the 450-470mMHz band could still reach the 480-490MHz band, in the event that it was required.

Planners in the 1970s should be congratulated for this foresight however what they could not take into account, nor control in the future, was decision making at all levels of government, based around factors other than radio interoperability. For whilst police radio groups might argue that they needed, for the purposes of interoperability, to remain within this band of spectrum, government fiscal managers and/or contract negotiators, often made decisions for other reasons, most frequently economic ones, to purchase radio equipment or systems that operated outside the designated 450-470MHz band. The protests of radio technicians at functional level within police organisations were disregarded in the decision making process on the basis that the likelihood for interoperability needs were rare or remote.

### **Current Police Position**

Interoperability for police organisations in Australia today is even more necessary than it was in 1970 and more complex than many others in government either acknowledge or understand. Police interoperability needs are both vertical and

horizontal and also need to be prioritised. The interoperability necessity for police is possibly best explained given an understanding of today's operational priorities in a changing law enforcement and security environment. There is a need for firstly vertical interoperability within each specific police organisation, for the conduct of normal day to day business. There is a need for horizontal integration across law enforcement and security throughout Australia, and even Australasia as New Zealand police are now becoming a regular participant in Australian mainland operations.

In recognition of this trend, and the need for national police interoperability Police Commissioners and Police Ministers established the Law Enforcement and Security Radio Spectrum Committee in 2003, with a goal of achieving and retaining the level of interoperability required to ensure the safety and security of the Australian Community.

Then there is the now rapidly growing need for interoperability across emergency organisations within firstly, the State for normal operations and secondly, interstate organisations. This is prefaced on the understanding that with major incident response in the 21st century more than just blue light responders are involved from the outset.

This interoperability spectrum issue is further exacerbated when you look at the operational configuration of individual police organisations across Australia. In New South Wales for example, the police use a digital UHF system in the greater metropolitan area, in the country areas of the State both UHF and VHF systems are used in different radio regions, and in the remote far west HF and satellite systems are in use. Obviously these systems, with present technology cannot directly relate to each other, so there is a need to run a liaison system which is controlled in a centralised operational communications model. At the same time, standard police practice today, with ongoing criminal and security investigations, operates in task force mode, where borders are seamless. At any one time in the State of New South Wales there are many operations running, involving police officers from right across Australia working together in parallel teams.

An example of this occurred in a major investigation during late 2006. This lengthy investigation involved monitoring a large number of suspects in both Sydney and Melbourne. The size of the investigation was such that large numbers of surveillance officers and investigators were required. Trained surveillance operators and their equipment were needed from virtually every police organisation in Australia, as well as others who were co-opted from other government departments, who had trained expertise. During this investigation there were a number of incidents where there was the likelihood that individual investigative teams could have interfered with other teams unknowingly, as each was not always aware of the others presence nor operational imperatives, because many were operating on their own radio systems without any interoperability capacity.

The use of other communications technology such as public telephony or commercial service providers are not always practical nor in many cases secure. But what also should be borne in mind is that during times of critical distress, these services are also not likely to be available. Notable instances of the failure of mobile telephone systems are 911 in New York in 2001, and the London bombings in 2005. Closer to home as recently as June 2007, during the floods on the north coast of NSW, the mobile telephone network failed in a greater part of the Hunter region when infrastructure was damaged by flooding. Quite clearly government organisations with a priority for security and safety cannot rely upon commercial systems and have to both maintain and improve their own communications systems so that they maintain priority and security at all times.

### **Future Requirements**

The complex world within which police and other emergency services operate now requires much more detailed and relevant information for decision making. For Police officers the reality is that decisions they make quickly, and with limited information, are later debated and researched in great detail. Often with the result that officers and their work are either questioned and or criticised. This is quickly leading to a fast growing demand for greater volumes of real time accurate data to assist in decision making.

This translates into a rising expectation that officers in the field have secure and prioritised access to high speed data networks to seek information, or to stream video to decision makers in major situations, or urgent and escalating incidents. We are now in a situation where officers and their industrial representatives are beginning to lobby for access to these services to ensure their own safety and that of the community. To satisfy these demands we need to access spectrum and develop networks that have built in redundancies to move into the next era of public safety and security with a rigorous wireless data platform.

How do you achieve this given we are in a time of fiscal restraint, spectrum scarcity, but with increasing community expectations relative to performance and response?

Whilst technology is moving forward at a rapid pace, it is not necessarily keeping abreast of demand for radio/wireless growth or spectrum availability. The answer in the medium term for government departments is to join together in whole of government radio networks and utilise trunking systems where possible. This creates a more cost effective method of radio communications but not necessarily a more technically efficient or functionally optimum radio network. There is an increasing acknowledgement amongst police organisations across Australia of the need to utilise government radio networks to improve their cost effectiveness, and local interoperability needs for emergency management. But we cannot risk the mistakes of the past, where decisions were taken only on the lines of cost effectiveness, if those decisions do not support law enforcement and public safety national interoperability.

For Police, our main business, which is crime, safety, and security, is now so nationally spread and related that we have to ensure that decision makers understand the implications for individual police officers, and the safety and security of the community, if radio interoperability is not achieved and maintained.

The future decisions for the allocation of radio spectrum are central to the future of radio networks for police organisations in relation to future technology usage and interoperability. Given the decisions of the World Radio Conference in 2007 to designate our present LEPS radio spectrum in the 450MHz to 470MHz band for Telecommunications use, the police and other organisations currently using that band

will have to be moved. This will have a very high monetary cost, which State governments will be reluctant to fund in the immediate future. Therefore any urgency for the relinquishing of this spectrum for commercial allocation will likely have to be funded from some other source.

The decisions taken regarding the allocation of new spectrum for this group will dictate both the level of interoperability and the technical options that might be available. Spectrum for future police and security needs would be optimal if it was within the switching range of government radio network allocations and at the same time in a block which covered sufficient contiguous spectrum that provided for the needs of every police organisation regardless of its size and area of coverage.

In this paper I have only addressed the requirements for police operational and response activity; the other growing need is for radio spectrum in areas of covert evidence gathering and operational security responses. These needs are growing with the advancement of technology and the increasing technical awareness and utilisation by criminal groups and international terrorist groups. These spectrum needs are such that their location and utilisation must be secure and in many cases both discreet and secret.

The future needs and use of radio spectrum across governments at State, Territory and National levels can only be achieved through ongoing negotiation and collaboration. I believe that these goals can be achieved nationally but it will require considerable planning and in some cases levels of acknowledgement tempered with understanding and compromise.