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Digital Dividend Green Paper Potential Benefits of the Digital Dividend Questions

APCO Australasia has members and associates who are:

- Government and semi-government employees in the public safety sector;
- Telecommunications vendors and service providers supplying to the public safety sector;
- Industry and individual advocates for the development of public safety sector telecommunications;
- Tertiary learning and research institutions;
- Individual academics; and
- Local and international groups assisting in the development of telecommunications technology standards for public safety.

The views and opinions contained herein are the consolidation and alignment of views and opinions provided by APCO Australasia's members and associates.

Background

APCO Australasia is continually being reminded by its members that Australia is unique and this uniqueness needs to be considered in all discussions regarding spectrum utilisation.

The following are background items for consideration:

- 90% of Australia's population lives in ~15% of the Australian land mass;
- Australia has a population of ~25 million (less than 10% of the USA);
- public safety organisations in Australia are mainly State based, not local council/county based;
- public safety organisations have invested heavily in the 400-520MHz UHF and 160-170MHz VHF bands for mobile voice communications;
- all public safety dedicated narrow band mobile data systems are confined to major cities/towns and operate primarily in the 400-520MHz band; and
- most State public safety organisations are either operating within, upgrading to, or planning to implement APCO Project 25 compliant networks in the 400MHz UHF band.

In an attempt to address the inevitable convergence of voice and data on high packet rate platforms, APCO International has established and/or is participating in projects such as Project 34 and MESA.

Whilst APCO International is driving the input to these Project 34 and MESA projects, there is no doubt they are focused on and heavily influenced by the US public safety and spectrum environment. Consideration of the European public safety and spectrum environment is also having an impact in the standards development; the Australasian public safety environment, however, is not.

Australia is seen by APCO International as a follower rather than a leader, something APCO Australasia is changing, through the establishment of its own policy and standards group, to accommodate our individuality.

APCO Australasia is aware that some 700MHz spectrum has been made available in the US to assist in spectrum harmonisation for both voice and data. However APCO Australasia is not convinced that the US model is always the best fit for Australia.

APCO Australasia has taken a pragmatic approach to our response to this Digital Dividend Green Paper, as we wish to find a balance between satisfying the public safety sector and the dividend (financial and community return) from the auctioning of the 126MHz contiguous spectrum in the UHF Band V.

Our approach also attempts to address the fact that:

- State and Federal Governments have limited funds to invest heavily into large dedicated public safety networks;
- the ACMA has flagged part of the 400MHz UHF band for Government only use (outcome pending);
- mobile phone carriers are developing “open channel” functionality on their 3/4G platforms for future consideration by public safety users;
- the 126MHz being freed up in the UHF Band V band is the logical extension of existing mobile carrier spectrum and is ideally suited to LTE and IMT technologies; and
- some international products are already available in the 700MHz (US) band for public safety voice communications.

APCO Australasia has not responded to all the questions provided, however where we believe we could add value we have done so.

Mobile telecommunications and broadband

“Should digital dividend spectrum be used to provide mobile telephony and broadband services?”

APCO Australasia supports the use of Digital Dividend Spectrum (DDS) for mobile telephony and broadband services, on the proviso that public safety considerations are given to any services delivered on the related platforms.

“How much spectrum would be required to provide these services?”

We estimate the optimum use of the DDS for mobile telecommunications and broadband would be 50+50 MHz for LTE technology deployment and the remainder considered for IMT technologies, including WiMax.

In the event that the DDS is allocated as above, APCO Australasia would like to work with the department and/or in conjunction with the carriers operating in the purchased spectrum to define fit-for-purpose public safety sector broadband services.

APCO Australasia would also like the department to consider working with APCO Australasia to define something similar to the US Public Safety Broadband License. Hence, APCO Australasia would like the allocation of contiguous paired spectrum with special conditions attached, such that the new owner of the spectrum block agrees to provide a broadband technology platform that provides mobile voice, video, data capability and capacity to satisfy the public safety sector, particularly during emergency and disaster situations.

Unlike the US, APCO Australasia does not support the reservation of narrow-band data services in the 700MHz band, as we believe they are better suited to other bands, especially when a cost per bit transmission approach is taken. This narrow-band high cost per bit is calculated after consideration of high capital establishment costs, recurrent costs and the relatively high spectrum costs.

Some States, such as Victoria, are already including carrier based solutions as part of their mobile data delivery service; however this is just an add-on to dedicated legacy systems. The Victorian legacy mobile data system still is limited to metro areas; with regional areas being satisfied by carrier based mobile data solutions.

“When would this spectrum be required?”

The spectrum utilisation is dependent on the spectrum owners roll out plans.

“What would be the benefits of this use? Arguments should focus on the value this use of spectrum presents for the Australian community and economy”

APCO Australasia believes that some of the benefits would be as follows:

- the economic dividend (revenue) from the sale of the spectrum will assist the Government to fund other high priority community projects;
- the community dividend will be the provision of a ubiquitous service delivery across Australia that all Public Safety organisations can access, without the constant issues around disparate and incompatible State based deployment of mobile data solutions. A common mobile data platform for all public safety organisations will assist in optimising all communications aspects of emergency management activities. However, the use of carrier based solutions by public safety organisations cannot occur without extensive consultation, SLA development and standards around its use, and without these APCO Australasia cannot support the wholesale use of the UHF Band V by carriers;
- the high bit rate solutions possible with LTE and the associated mobility it supports;
- carriers (private sector) are better placed to inject capital in infrastructure to utilise the available spectrum. In some cases it is a matter of expanding existing infrastructure rather than green field builds; and
- implementation of broadband mobile data solutions in the available spectrum is likely to occur significantly faster than would be the case for dedicated systems.

Fixed wireless broadband

APCO Australasia has no comment on this section

National Broadband Network spectrum implications

APCO Australasia has no comment on this section

Mobile television and multimedia

APCO Australasia has no comment on this section

Improving the quality and scope of existing broadcasting services

APCO Australasia has no comment on this section

Migration to next generation broadcasting technologies – DVB-T2 and MPEG-4

APCO Australasia has no comment on this section

Retention of broadcasting spectrum for new broadcasting or similar services

APCO Australasia has no comment on this section

Other uses

Government uses

“Is access to digital dividend spectrum required for government purposes? If so, for what purposes?”

APCO Australasia believes there is a case for and against this, depending on the acceptance of APCO Australasia’s previous comments regarding public safety access to carrier based solutions.

For –

In the event that the department does not support the concept of a Public Safety Broadband License being associated with the UHF Band V spectrum, APCO Australasia would then argue that a spectrum block be reserved in the 700MHz band for public safety use (separate to any requests by the Australian Defence department).

The spectrum would be used to deliver dedicated mobile broadband data solutions to the public safety sector.

In the event that a spectrum block is allocated to public safety, APCO Australasia would request that the same spectrum block be provided here as that issued in the US. This spectrum alignment would permit Australian public safety organisations to enjoy economies of scale (hopefully) by purchasing off the shelf products and services. This is something the public safety sector does not currently enjoy, due to misalignment of defence spectrum in the 390-430MHz band with the European spectrum available for dedicated government use, hence making it near impossible to introduce other technologies fit for public safety, such as TETRA technologies, into Australia.

Another option is the use by public safety organisations of the 400MHz band CDMA450 mobile data services which are being looked at by the ACMA as part of the 400MHz band restructuring.

Against –

In the event that the department does support the concept of a Public Safety Broadband License being associated with the UHF Band V spectrum, then APCO Australasia would argue that a spectrum block be reserved, or a mandated service definition be provided to carriers to deliver public safety mobile broadband data services. APCO Australasia would be best placed to assist in the development of these service definitions.

“How much spectrum would be required for these purposes?”

A dedicated spectrum block for public safety (excluding defence requirements) would require 10+10MHz of spectrum.

“When would this spectrum be required?”

The dedicated spectrum would not be required before 2017, as this is the normal lead time required for government to develop user needs statements, obtain sign-off, develop business cases, seek funding approvals, prepare tenders, award tenders and implement the systems.

“What would be the benefits of this use? Arguments should focus on the value this use of spectrum presents for the Australian community and economy”

The main benefits of an allocated spectrum block for public safety use (i.e. not defence or other non-public safety government agencies) are as follows:

- provided the spectrum is aligned to US spectrum allocation for public safety use, economies of scale should provide government agencies with better value for money arguments and successful business cases;
- a dedicated network ensures that no external influences can easily “crack’ or penetrate the systems, which is especially important if secure data is being carried on the network;
- unlike carrier based systems whose infrastructure is often seen as “soft and clearly identifiable targets”, dedicated networks can be established innocuously with inherent and directly controlled redundancy;
- step-in rights under emergencies is easier with dedicated systems, hence the ability to restore systems and provide optimum emergency management services to the community will be possible;
- governments are not locked into technology refresh cycles of carriers, e.g. decommissioning of CDMA; and
- historically, dedicated mobile data systems have been very basic in function and limited in bandwidth, therefore a dedicated broadband solution for public safety would permit greater innovation and certainty around future applications development, ultimately facilitating safer and healthier communities.

Class-licensed uses

APCO Australasia has no comment on this section

Impact of restacking on viewers

APCO Australasia has no comment on this section