



**Spectrum Review
Potential Reform Directions
Response**

December 2014

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Introduction

We would like to thank the Department for the opportunity to comment on the *Spectrum Review Potential Reform Directions* consultation paper and what are generally welcome proposals to simplify the management of spectrum in the Australian market. As spectrum becomes an increasingly significant driver of our economy and national productivity, it is critical that the regulatory environment is able to be responsive and flexible to the needs of industry and the nation.

In our submission, we have constrained our responses to a subset of the tabled proposals, notably *Proposal 8: Facilitate greater user involvement in spectrum management* and *Proposal 11: The ACMA to continually review options for allocating spectrum to alternative / higher value uses and to ensure that barriers to achieving this are reviewed and removed where appropriate*.

In regards to Proposal 8, we are supportive of the concept of delegating specific ACMA functions to 3rd parties. The substance of our comments is that it is strongly preferable to have one or more parties that are trusted domain experts of a robust size, providing confidence to government and other stakeholders that these functions can be performed reliably and to the highest professional and technical standards. Further, we have made some suggestions as to the types of activities that could be undertaken by these parties.

Likewise in Proposal 11 we are supportive of the thrust of the proposal – being the continued evaluation of the best use of scarce spectrum resource. We argue that in considering the value of particular applications, specifically television broadcasting and emergency services, all economic and social benefits, not just direct monetary returns must be accounted for over the long term. Further, more efficient use of spectrum may remove the need for existing services to be shut down to allow new services to commence operation. Lastly, in driving to a more efficient use of applications, it is imperative that we make technology choices that will stand the test of time.

We look forward to continued engagement with the Department and would welcome the opportunity to discuss our submission further.

About BAI

BAI is a communications infrastructure group with operations spanning North America and Asia Pacific. BAI designs, builds and operates communications infrastructure and services. The company's Australian businesses include Airwave Solutions Australia, which operates nationwide critical communication services for emergency & public safety authorities and private networks; Broadcast Australia, which provides fully managed transmission services for radio and television, and site sharing, co-hosting and infrastructure services to the telecommunications, emergency services and broadcasting industries; and Hostworks, a leading provider of critical application management and hosting services to online, digital media, enterprise and government.

The company's businesses in Canada (BAI Canada), Hong Kong (RFE), and the USA (Transit Wireless), specialise in the design, installation and operation of cellular and Wi-Fi coverage in mass transit subway venues such as the New York MTA and Hong Kong Metro.

Responses to Questions Raised in the Discussion Paper

Proposal 8: Facilitate greater user involvement in spectrum management

BAI believes that a delegation of some of the ACMA's duties in regards to spectrum management is sensible and in line with international best practice. We note the following points:

- It is critical that any organisation(s) tasked with such a role has the necessary qualifications and scale to provide a reliable service to industry across all technologies
- The role played by Arqiva in the UK is a noteworthy example of a successful delegation of roles and responsibilities away from the regulator
- We have suggested a number of areas for further investigation

Any organisation that would perform the role would need to possess direct experience of successfully managing spectrum planning, licensing and interference management and be capable of understanding the broader spectrum landscape across telecommunications, broadcast, emergency services and private mobile radio (PMR). Finally, to provide certainty for the industry, any company selected should be of a scale and robustness suitable to perform the role over an extended period of time.

In the UK, Arqiva has successfully managed occasional use spectrum allocation through its Programme Making and Special Events (PMSE) business unit and has also heavily contributed to the development of white space policy and databases. Its role as a neutral operator (alongside other neutral Government departments) seems to be a desirable and workable model for the ACMA to adopt.

Transitional arrangements and the timelines for introduction of outsourced arrangements are heavily reliant upon settling the scope of the role to be taken on by the private sector. Some areas for further investigation that we have identified include:

- An expansion of the scope for Frequency Assigners
- License trading management
- Interference planning identification, management and resolution
- Development of new spectrum plans, such as the equivalent of existing band, channel and license area plans
- Development of new or revised Radio-communications Assignment and Licensing Instructions (RALI)
- Future white space database management

Through our recent experience completing the clearance of the 700MHz band (restack), we have learnt valuable lessons that could be applied to the development of the scope. We would welcome the opportunity to further discuss options and potential models with the Department and the ACMA.

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Proposal 11: The ACMA to continually review options for allocating spectrum to alternative / higher value uses and to ensure that barriers to achieving this are reviewed and removed where appropriate

BAI is broadly supportive of the concept of an ongoing and regular review of the existing use of spectrum. We note the following points in our response:

- Continual review of the highest value use for the spectrum is a positive and sensible direction for the management of spectrum and we do not foresee any issues with a short term implementation of the proposal
- Measuring the value of spectrum use should consider all economic and social forms of value and that broadcast transmission services are an excellent example of services that provide benefits far and beyond simple direct monetary returns to government
- Any higher value use case analysis should consider the current services in market and thus the *incremental* value that could be provided by introducing new or expanding/contracting existing services
- More efficient use of spectrum can facilitate additional services without the exclusion or removal of existing ones
- We support the employment of new technologies to increase the spectral efficiency in the broadcast sector but caution that due to the extended transitional timeframes required, 'future proof' technology choices need to be made

The consideration of economic and social as well as monetary value is critical for any analysis of spectrum use. Terrestrially delivered television and radio free at the point of consumption reaching over 99.6% of the population is a public good that informs, educates and entertains the nation (a unique national achievement when considering Australia vis a vis comparable countries). The free to air platform nurtures a creative industry locally that shares unique Australian stories in a way that is not possible with any other medium. It also has an important role in emergency service communication. For the foreseeable future the terrestrial platform represents the most cost effective mechanism to deliver broadcast television across Australia's vast land mass and creates pricing pressure for paid television services to ensure the best outcomes and choices for the consumer. Communications Chambers (on behalf of the BBC, ITV, Channel 4 and Arqiva) released a report in January 2014 reviewing the value of the UK digital terrestrial television (DTT) market which provides a more detailed explanation of the above concepts. As well as illustrating the additional value that the DTT platform provides, its other notable findings were that the marginal benefit from allocating broadcast spectrum to mobile data services was more than half the loss incurred from any corresponding reduction of broadcast services¹.

The consideration of the economic and social value of spectrum use also applies to Emergency Services. In this instance, better communications can lead to better patient outcomes; reduced property damage and improved public health and officer safety. In each case, there is a danger that a purely monetary view of value will fail to capture the full benefits to society.

Ensuring that currently allocated spectrum is used efficiently should also be a focus of any review. Efficient use of spectrum can be understood along two key parameters. Are the appropriate technologies being used to make the most efficient use of existing allocations (e.g. compression technologies in broadcasting and small cells in mobile data communications) and are existing allocations of spectrum being used?

¹Kenny, R, Foster, R, Suter, T 2014 *The value of Digital Terrestrial Television in an era of increasing demand for spectrum*, Available from: <http://www.commcham.com/pubs/2014/1/21/dtts-economic-case-for-spectrum.html>



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The broadcast industry is a salient example where better use of the spectrum (e.g. the shift from analogue to digital broadcasting) allowed the introduction of new alternate services without the exclusion of existing ones. Moving forward, the use of more modern compression technologies, such as MPEG-4 provides the option of broadcasting additional content or existing content in a more efficient manner. The use of the '6th Channel' to provide a transitional service is a sensible path forward.

At a high level, we would suggest that in lieu of a shift to MPEG-4, a review of emerging terrestrial broadcast compression and transmission standards is carried out to assess the most appropriate choice to evolve the platform. Our recommendation would be a progressive rollout of the H.265 or HEVC (Highly Efficient Video Codec) compression standard, which is 50% more efficient than MPEG-4 and an evolution to new transmission standards (a shift to DVB-T2, 30% more efficient than the existing DVB-T). We view these as a 'future proof' choice that maximises the competitiveness of the platform and provides flexibility to longer term decision making.

The broadcast industry is but one example and in our view other opportunities exist for more efficient use of existing spectrum allocations by way of technology upgrades and/or spectrum sharing. Emergency services are another area where spectrum and network sharing has led to significant improvements in spectrum use without compromising the quality of the service.

Spectrum is a scarce and valuable resource and it is imperative that it is both used for high value applications and that those applications utilise the spectrum assigned as efficiently as possible. What we must ensure is that in considering the merits of each application, we appropriately recognise not just the monetary but the broader economic and social benefits realised, epitomised by those that broadcast television provides to the community.

Contact

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