

Spectrum Management and the Future of the “Sixth Channel”

Sarah Strasser looks at the status of spectrum management in Australia, focusing on the future of the last unallocated channel of spectrum reserved for broadcasting purposes.

During 2010, Australian broadcasters SBS, Nine Network, and Seven Network conducted trials of 3D television broadcasting in seven locations across Australia. These trials, which tested production, transmission, and reception technologies, were reportedly the first non-subscription 3D television broadcast trials in the world.

To enable the trials to take place, the Australian Communications & Media Authority (ACMA)—the government regulator of radiofrequency spectrum—granted the broadcasters scientific apparatus licenses under section 100 of the *Radiocommunications Act 1992* (**Radiocommunications Act**). These temporary trial licences permitted limited use of radiofrequency spectrum designated for broadcasting purposes, otherwise known as broadcasting service band (BSB) spectrum.¹ The ACMA has allowed such trials for a range of purposes, including mobile television, digital radio, and datacasting—as well as the 3D television trials themselves.

Once analog television broadcasting ceases in late 2013, only one 7 MHz “channel” of highly sought-after BSB spectrum will remain unassigned to a particular use on a long-term basis.

The spectrum in which these trials operated is of particular interest because despite its value, it has not been permanently allocated to a specific use. Once analog television broadcasting ceases in late 2013, only one 7 MHz “channel” of highly sought-after BSB spectrum will remain unassigned to a particular use on a long-term basis. This piece of spectrum is commonly referred to as the “sixth channel”.

Community television licensees are currently using some of this spare capacity to broadcast digital services, but these licences are not guaranteed to continue after the end of 2013. This uncertainty is primarily due to the fact that the Government has not made any policy decisions on the use of the sixth channel following analog television switchoff.

A range of possible broadcasting-related uses for the sixth channel is considered below, in the context of the overall regulation of spectrum in Australia and the switch to digital television broadcasting.

1. Planning, licensing and allocation of spectrum

Before considering how the sixth channel might be used, it is first necessary to note technological and regulatory aspects of spectrum use in Australia.

Radiofrequency spectrum refers to that part of electromagnetic spectrum used to deliver various types of wireless technologies, including television and radio broadcasting, radar, WiFi, and mobile telephone

communications. Sections of radiofrequency spectrum are referred to as “bands”, within which 7 MHz “channels” are allocated.

Spectrum is a limited resource, and certain types are more valuable than others for particular uses. Not all spectrum is born equal - both the amount and location matter. Often only certain ranges of radiofrequencies are appropriate for particular purposes or types of devices. In some situations particular bands or channels may be useful for a number of applications, but for technological reasons it may not be possible to use the spectrum simultaneously for multiple purposes.

Mechanisms have been established in Australia to ensure that spectrum is managed to meet a number of aims, which include both efficiency and public good objectives that must be balanced. For example, while spectrum management must maximise the overall public benefit from using spectrum (by ensuring its efficient allocation and use), it must also encourage use that enables the provision of “a wide range of services of an adequate quality”.² Accordingly, rules exist to determine how to allocate valuable spectrum to competing users, and in certain situations to guard against interference between uses. While some of these rules establish that certain bands may be used only for certain general purposes (such as for broadcasting or by Government defence agencies), others require users to gain licenses, or at the very least to ensure compliance with technical requirements when operating devices that make use of spectrum.

1.1 Spectrum planning and the digital dividend

In Australia, spectrum is regulated through a number of tools such as spectrum plans, frequency band plans, and licence area plans, among others. At the highest level, the ACMA may prepare a spectrum plan, specifying the general purposes for which particular bands may be used.³ In addition, the Minister may, within the structure created by the spectrum plan, designate particular parts of spectrum for broadcasting purposes.⁴ In practice, ACMA decisions about spectrum allocation, licensing and pricing are informed by public consultation processes, which help to identify the nature of future demand.⁵

In Australia, a total of 57 channels, consisting of three bands in the VHF (Very High Frequency) range and two bands in the UHF (Ultra High Frequency) range, are currently designated to provide analog broadcast television.⁶ To protect against interference between services, not all of these channels are used in every geographic location. Certain channels are used to provide services in one licence area, but remain unused in an adjoining licence area (where a different service is provided). The details of the geographic areas in which channels may be used are specified in the conditions of individual spectrum licences assigned to particular broadcasters.

Certain bands are more valuable for certain types of services than others. Lower frequency UHF bands are particularly valuable for hand-held devices such as mobile phones, as they have the superior

1 RA, s 31 (planning of broadcasting services bands).

2 RA, s 3 (objects of the Act).

3 RA, s 30 (spectrum plans).

4 RA, s 31 (planning of broadcasting services bands).

5 A Grant, “Spectrum management”, in A Grant & D Howarth (eds), *Australian Telecommunications Regulation*, 4th edn, CCH Australia, Sydney (2011), pp 327-328.

6 Further context is provided in Department of Broadband, Communications & the Digital Economy (DBCDE), *Digital Dividend Green Paper* (January 2010), (Digital Dividend Green Paper), p 7, http://www.dbcde.gov.au/_data/assets/pdf_file/0005/125267/Digital_dividend_green_paper.pdf.

propagation characteristics of VHF bands but do not need large aerials. The Government has accordingly noted that “analog television spectrum in the UHF bands is ‘waterfront property’ because of its ability to carry signals over long distances, penetrate buildings and carry large amounts of data.”⁷ This observation underpins the Government’s decision to reallocate UHF spectrum not needed for existing digital broadcasting services to other uses. This reallocated spectrum, which the ACMA intends to auction off in the public market in late 2012, is the “digital dividend”—126MHz in the 694-820 MHz band. The ACMA has planned for the reallocation of the digital dividend with the expectation that it will be purchased for mobile broadband, responding to an increased demand for spectrum for this purpose.

The sixth channel, which will make use of spectrum in two VHF bands, will not be part of the digital dividend, and will remain in the BSB. It will be the only unallocated 7 MHz channel designated for broadcasting and available at every transmission site in Australia, with coverage at least as good as that currently being delivered via analog television broadcasting.

Commercial broadcasters are required to ensure that SDTV offerings achieve the “same level of coverage and potential reception quality as is achieved by the transmission of that service in analog mode”.

1.2 Licensing and allocation

Different licensing forms play a role in authorising particular uses of spectrum: spectrum licences, apparatus licences, and class licences.

Spectrum licences authorise the licensee sole use of a defined parcel of spectrum for up to 15 years (identified by a geographic location and frequency band), as long as the use complies with any licence conditions and technical frameworks for that particular radiofrequency band. Spectrum licences are used for mobile telecommunications, among other uses. Holders of such licences are guaranteed protection against interference from other spectrum users. Spectrum licences are granted via price-based allocation processes (auctions), and licensees have the right to trade their licence in whole or part. The digital dividend will be allocated via a spectrum licence auction process.

Apparatus licences are similar to spectrum licences in that they guarantee protection against interference, but differ in that they do not grant a quasi-property right in the spectrum itself. Instead, they typically involve a right to use a particular type of device within a defined portion of spectrum, subject to specified licence conditions. These licences are typically purchased for a fixed fee for up to five years, and may be renewed in some circumstances. Apparatus licences are used for a range of purposes, including broadcasting transmission, mobile telephony, and aeronautical applications. For example, broadcasters that wish to distribute television or radio programs via radiofrequency means must hold an apparatus licence authorising them to operate a radio-communications transmitter, in addition to an appropriate broadcasting service licence under the *Broadcasting Services Act 1992 (BSA)*.⁸

Class licences authorise users holding complying devices to operate within a particular band of spectrum, for example, devices such as garage door openers and WiFi devices. Class licences are not individual licences, but simply authorise the operation of complying devices within certain parameters. Persons operating devices under class licences are not guaranteed protection against interference.⁹

2. Why the switch to digital television and what it means

There are two primary benefits of adopting digital television technology and subsequently switching off analog television broadcasting services: improving broadcast and reception quality, and using spectrum more efficiently.

Australian commercial television broadcasters have been required to introduce digital television services, in preparation for switching off analog services. Until analog switchoff, the primary commercial and national services are being simulcast in both analog and digital formats. The first location in which analog television broadcasts stopped was Mildura, Victoria, in mid-2010. The rest of Australia has been progressively switching off analog services, to finish with major metropolitan areas at the end of 2013.¹⁰

2.1 Improving reception quality

Digital television technology is an improvement over analog in broadcast and reception quality. The basic level of digital television services—called Standard Definition (**SDTV**)—is of equal quality to what is offered by high quality analog or DVD formats. High Definition (**HDTV**) services provide higher quality picture and sound.¹¹ In Australia, both SDTV and HDTV services are broadcast using the technical standards of MPEG-2 and DVB-T.¹²

For the majority of viewers, digital television reception quality will be an improvement over analog. Analog television broadcast quality degrades gradually as distance from the point of transmission increases, resulting in an intermittent or fuzzy picture before the signal is too weak to generate any picture at all. In general the higher quality of digital broadcasts is the same throughout the reception area until at some point the signal is no longer received at all. Commercial broadcasters are required to ensure that SDTV offerings achieve the “same level of coverage and potential reception quality as is achieved by the transmission of that service in analog mode”.¹³ Where viewers do not receive an adequate signal from a terrestrial digital television transmitter, they will be given access to digital television offerings via satellite.¹⁴

2.2 Using spectrum more efficiently

The switch from analog to digital television transmission technologies both enables broadcasters to offer a greater number of digital television services in less spectrum than is occupied by analog services, and creates vacant spectrum to be used for non-broadcasting purposes.

Not only do digital services require less spectrum than equivalent analog offerings, but their use of spectrum is more efficient. While analog television broadcasting technology requires the use of guardbands—interstitial and vacant channels—to protect against interference, digital television channels may be located directly adjacent to one another.

This characteristic means that multiple television broadcasting services may be provided within a single 7 MHz channel of spectrum.

7 Digital Dividend Green Paper, p iii.

8 This requirement applies to commercial, community, subscription and international broadcasters that wish to transmit programs by means other than satellite (or via fixed, non-radiofrequency networks). A different regime applies to national broadcasters. BSA, s 12(1) (broadcasting services licensing types); RA, Part 3.3 (licensing radiocommunications under apparatus licences).

9 ACMA website, “Spectrum licensing FAQs”, http://www.acma.gov.au/WEB/STANDARD..PC/pc=PC_310839.

10 DBCDE, “Digital television switchover”, http://www.dbcde.gov.au/television/digital_television_switchover.

11 Federal Communications Commission, “The Digital TV Transition: What You Need to Know About Digital TV Sets”, <http://www.dtv.gov/needtoknow.html>.

12 MPEG-2 is a standard for the compression of video and audio information. DVB-T (Digital Video Broadcasting—Terrestrial) refers to a standard for digital terrestrial television broadcast transmission, which provides a means of transmitting compressed digital audio and video data.

13 BSA, Sch 4, cl 6(3) (setting out the terms of the conversion of commercial television from analog to digital).

14 BSA, Part 9C; ACMA, “The Viewer Access Satellite Television (VAST) service”, http://www.acma.gov.au/WEB/STANDARD/pc=PC_312409.

To date, commercial broadcasters have tended to provide one HDTV service and two SDTV services within their 7 MHz allocation, although national broadcaster ABC currently provides three SDTV services (one of which has limited hours) and one twenty-four hour news HDTV service. One reason for this variation is that different types of broadcasts have different spectrum requirements; action movies and sporting fixtures require relatively more spectrum than generally static news broadcasting, and 3D television requires more than standard HDTV formats.

After analog switchoff, the remaining digital television services will be consolidated into a contiguous block and relocated to new frequencies as necessary. This process of “restacking” will make the digital dividend available for reallocation. Without restack, digital television services would be scattered throughout the bands, making the use of any excess spectrum impractical. After the process is completed, all six channels reserved for broadcasting will be below UHF channel 51, and televisions will need to be retuned to be able to receive all services. While the ACMA plans to reallocate the digital dividend (700 MHz) band by auction in late 2012, it will not be available for use in any particular licence area until restack is completed there. The ACMA is currently developing restack channel planning proposals to guide that process.

Of the six channels remaining in the BSB post-restack, the Government has not yet indicated the intended long-term use of one channel. The decision of how the sixth channel should be allocated on a long-term and permanent basis is significant, as it is the last full channel available nationally that is reserved for broadcasting services.

3. The sixth channel and its possible uses

The debate over how any additional spectrum allocated to broadcasting may be used in a post-digital television switchover world has been active for over ten years, since the decision was made to plan for two spare digital channels. For a number of years, the focus was on the concept of datacasting,¹⁵ which it was hoped would permit new entrants to television broadcasting while not undermining the limit of three commercial television stations per market. More recently, that issue has taken the form of a debate over the possible future of the sixth channel (with what would have been the “seventh” channel forming part of the digital dividend).

In January 2010, the government clarified the location and size of the digital dividend, noting that six channels would remain in the BSB.¹⁶ Five of those channels were to be used by existing terrestrial broadcasters (three commercial and two national licensees). However, the future of the sixth channel was left unresolved.

A range of uses has been considered for the use of additional spectrum for broadcasting purposes.¹⁷ The BSA does not oblige any particular use of the sixth channel, so long as BSB spectrum is used for broadcasting services of some description.

3.1 Current use of the sixth channel

In addition to scientific trial purposes such as the 3D television trials, existing digital community television services in mainland metropolitan

locations are currently occupying the sixth channel. Since late 2009, three long-term community television services (in Sydney, Melbourne and Brisbane) and one trial community television service (in Adelaide), have been allocated apparatus licences allowing them to broadcast until the end of the simulcast period and analog switchoff. In addition, a trial community television service in Perth is authorised to commence transmission in digital mode only.¹⁸

While the three long-term community television services have been granted permanent broadcasting service licences, they do not have a statutory right to an accompanying apparatus licence beyond a certain date before restack. The trial community services currently have no right to broadcast post-switchover. If not allocated part of the sixth channel, these services will need to secure an alternative means to continue broadcasting, either via a subscription or online platform, or possibly by means of non-BSB spectrum.

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3.2 Expansion of traditional television broadcasting

One possible use of the sixth channel would be to reserve it for traditional television broadcasters, either by expanding the range of television broadcasting available or to reserve the spectrum for the rollout of new technologies.

Within this category, one possibility is the use of the channel for digital television broadcasting services: commercial, community, or national. For example, community television services could be allocated spectrum for use post-switchover, allowing them to continue broadcasting. Alternatively, the introduction of a fourth commercial network has been suggested.¹⁹ While the BSA enables the Minister to allocate BSB licences to new commercial television broadcasting services, to date no such allocation has been made.²⁰

Alternatively, the sixth channel could also be allocated to national broadcasting services, or to a mix of commercial, community, and national broadcasting services on a shared basis. In such a hybrid multiplex approach, spectrum could be allocated to services such as Indigenous broadcaster NITV, should the proposed carriage of NITV using spectrum allocated to SBS not eventuate.²¹

Another possibility is that the channel could be used for new broadcasting services such as a mobile television network. Before the decision was made to allocate what was the “seventh” channel to the digital dividend band, industry participant Broadcast Australia argued that mobile television using a broadcast model (providing the same content to many users, in this case over mobile devices) would be an

15 A “datacasting service” is defined in the BSA as a service using the BSB to deliver content in the form of text, data, sound, visual images, or some combination, while a “broadcasting service” is defined as a service that “delivers radio or television programs to persons having equipment appropriate for receiving that service, whether the delivery uses radiofrequency spectrum, cable, optical fibre, satellite or any other means...but does not include a service... that provides no more than data, or no more than text (with or without associated still images” : s. 6 BSA. While datacasting services were authorised on a trial basis for a number of years, they did not become as popular or widespread as the government originally anticipated.

16 Digital Dividend Green Paper, pp 12-13.

17 In the context of the digital dividend, the government has considered what broadcasting uses the digital dividend itself might be put. Digital Dividend Green Paper, pp 18-22.

18 DBCDE, “Community Television” (26 May 2011), http://www.dbcde.gov.au/television/community_television.

19 Media, Entertainment & Arts Alliance, Submission to *Australian Communications and Media Authority Spectrum reallocation in the 700MHz digital dividend band Discussion Paper* (December 2010), p 4, http://www.acma.gov.au/webwtr/_assets/main/lib311973/media%20entertainment%20arts%20alliance_ifc34-2010.pdf.

20 BSA, ss 35A, 35B.

21 The government’s review of Indigenous broadcasting recommended that NITV’s funding be extended, and that the service become available more widely on a non-subscription platform: *Review of Australian Government Investment in the Indigenous Broadcasting and Media Sector* (2010), pp 6-8, http://www.arts.gov.au/_data/assets/file/0018/94500/broadcasting-review.pdf. In September 2011, the Minister asked for SBS and NITV to discuss a possible non-subscription NITV service: http://www.minister.dbcde.gov.au/media/media_releases/2011/245.

ideal use for a seventh channel allocated to broadcasting uses.²² The same argument could be applied to the sixth channel.

The sixth channel might also be used to introduce additional services, such as datacasting, open narrowcasting, or additional subscription television services, although these possibilities would be less likely, unless made part of the hybrid approach discussed above, where several types of broadcasters would share the channel. With respect to datacasting, while trials were conducted for a number of years from 2003 to 2010, ultimately the ACMA decided not to authorise their continuation, as the size of the digital dividend has made it unlikely that spectrum will be available for datacasting on a long-term basis—at least in the form currently allowed in the BSA. However, datacasting and narrowcasting uses might be able to be accommodated in a hybrid multiplex approach, alongside more traditional television broadcasting.

The committee noted that decoupling the licensing of broadcasting spectrum from content obligations would lead to a more efficient use of spectrum, but did not outline what form that use might take.

3.3 Technical migration and the development of new broadcasting technologies

The sixth channel might be left unallocated for a specific purpose, and kept available for the introduction of new technologies on a short- or medium-term basis.

The introduction of 3D television in Australia was licensed as temporary “scientific” trials, using unallocated BSB spectrum. In general, scientific apparatus licences of up to 12 months in duration may be issued under section 100 of the RA for trials of new radiocommunications technology that relate primarily to trialling technical functions, where BSB spectrum is not currently in use, no interference to existing services is expected, and other requirements are met, including regarding the purpose of the trial and other demand for the spectrum in question.²³ Reserving the sixth channel for the development and introduction of supplementary television broadcasting technologies may be particularly appealing to non-subscription broadcasters if the demand for 3D television content increases. It might also be used to conduct a technical trial of audio description services, subject to funding approval.²⁴

While allocating the sixth channel for the development and introduction of supplementary television broadcasting technologies may be

particularly appealing to non-subscription broadcasters, its permanent assignment for such purposes is another matter, given the spectrum already available for these services. Each of the three commercial broadcasters currently offer two SDTV services and a single HDTV service within their existing 7 MHz allocation. Upgrading the HDTV offering to a 3D television offering is technologically possible, although it might be necessary to reduce the quality of one or both SDTV services at times to do so.

The sixth channel might also be part of a strategy for facilitating migration to new digital television transmission platforms, such as those using more advanced technologies such as MPEG-4 and DVB-T2, which allow for better compression and thus the more efficient use of spectrum.²⁵ Particularly in the case of a possible post-digital dividend migration from the current standard of DVB-T to DVB-T2, simulcasts of broadcasts using both standards might be a necessary part of such a transition, as viewers would need receivers capable of receiving broadcasts in MPEG-4/DVB-T2 format. Although the majority of new televisions on the market are MPEG-4-compliant,²⁶ the same is not true of DVD-T2. While only some viewers would need to update equipment (either the television itself or a set-top box) to receive MPEG-4 broadcasts, even those with new television sets would need to replace them to receive broadcasts using DVD-T2 technology.

It is unlikely that such a transition would be considered seriously before restack and reallocation of the digital dividend is completed, however. Moreover, while non-subscription broadcasters have strongly advocated the permanent retention of additional BSB spectrum for broadcasters to migrate to new digital television transmission technologies (such as those using DVBT-2 and MPEG-4), as well as for conducting scientific trials of new broadcasting technology such as 3D television,²⁷ subscription television providers maintain that the efficient use of spectrum post-switchover would enable migrations to new broadcasting technologies within spectrum currently allocated.²⁸

3.4 Expansion of digital radio to regional Australia

Permanent digital radio services using DAB+ technology have been introduced to Australia’s five major metropolitan areas (Adelaide, Brisbane, Melbourne, Perth, and Sydney). Following decisions regarding the size and configuration of the digital dividend, in 2010 the Minister allocated two 7 MHz channels to support the possible introduction of digital radio services to rural and regional Australia.²⁹

Proponents of digital radio have advocated the allocation of three channels nationally for digital radio services. For example, SBS has argued that three contiguous VHF Band III channels would provide the minimum amount of spectrum necessary to provide DAB+ broadcasts throughout Australia without interference, while accommodating all existing radio broadcasters.³⁰ However, making a third VHF Band III

22 Broadcast Australia, *Response to Government’s Digital Dividend Green paper* (February 2010), pp 4, 17, <http://www.broadcastaustralia.com.au/assets/files/White%20Papers/Broadcast%20Australia%20Digital%20Dividend%20Green%20Paper.pdf>. Broadcast Australia has conducted a number of trials of mobile television technology, last doing so in early 2007. Broadcast Australia, “Mobile TV Trials”, <http://www.broadcastaustralia.com.au/broadcasting/tv-services/mobile-tv/mobile-tv-trials>.

23 ACMA, *Dealing with Applications for Apparatus Licences for the Trial of New Radiocommunications Technologies—Guidelines* (February 2010), pp 2-4.

24 The Minister recently announced that a 13-week audio-description trial would take place in the second half of 2012. Senator the Hon Stephen Conroy, “Audio Description Trial on ABC in 2012” (22 February 2012), http://www.minister.dbcde.gov.au/media/media_releases/2012/020. No mention has been made yet of the spectrum to be used for this trial.

25 ACMA, *Beyond switchover: the future technical evolution of digital terrestrial television in Australia—Discussion paper* (January 2012), pp 25-29.

26 Owners of new television sets in Australia may already be able to receive broadcasts using MPEG-4 technology, as television receivers sold in Australia must be MPEG-4-compatible to be endorsed by Freeview, the representative of non-subscription digital television services. See Freeview website, <http://freeview.com.au/faq/faq.aspx?categoryId=3>.

27 Free TV Australia has made this point in a number of contexts: *Submission by Free TV Australia Limited to the ACMA paper—Limited Temporary trials of 3D TV and other emerging technologies* (20 October 2010), p 11, http://www.freetv.com.au/media/Submissions/2010-0010_SUB_FINAL_3DTV_trials_201010.pdf; *Submission by Free TV Australia Limited* (5 March 2010), pp. 8-12, http://www.dbcde.gov.au/_data/assets/pdf_file/0014/127031/Free_TV_Australia.pdf; *Submission by Free TV Australia to the ACMA paper, Spectrum reallocation in the 700 MHz digital dividend band* (13 December 2010), p. 4, http://www.acma.gov.au/webwr/_assets/main/lib311973/freetv_ifc34-2010.pdf.

28 ASTRA, *ASTRA Submission to: Spectrum reallocation in the 700MHz digital dividend band* (December 2010), p 4, http://www.acma.gov.au/webwr/_assets/main/lib311973/astra_ifc34-2010.pdf.

29 *Australian Communications and Media Authority (Realising the Digital Dividend) Direction 2010* (ACMA instructed to reserve 14 MHz of VHF Band III spectrum in each of the five major metropolitan licence areas for the provision of digital radio broadcasting services).

channel available for DAB+ purposes may be difficult given that the sixth channel is likely to be located in UHF spectrum.

While theoretically possible, it is unlikely that the Minister would reverse his 2010 decision to allocate three channels to digital radio, particularly when no decision on the future of analog radio broadcasting has been made, and it is unclear that DAB+ technology would be suitable for regional and remote areas.³¹ Although three channels would enable better access to DAB+ digital radio broadcasts and reduce interference in more congested markets, it may not be the most efficient means of reaching all Australians.

The regulation and technical characteristics of DAB+ multiplexes are such that a certain amount of spectrum allocated to digital radio is likely to remain unused in many areas. Under current licensing arrangements, wherever a DAB+ multiplex is operational 1.536 MHz would be set aside for a small number of services—two commercial licensees and one community licensee.³² This arrangement would apply regardless of whether that number of qualifying licensees existed in the relevant licence area. Moreover, although a 7 MHz channel may accommodate four DAB+ multiplexes, the need to manage interference between signals means that frequency blocks cannot be reused in geographically adjacent licence areas (and perhaps not in the next adjacent licence area as well), so in practice the capacity of a channel for DAB+ services is lower.

It is unlikely that full coverage of Australia could be achieved with DAB+ technology. DAB+ transmissions do not have the broad geographic scope of AM radio, and thus may be an unviable option for rollout in less populated areas. At this time, a practical alternative digital radio broadcasting technology that could achieve full coverage, including in remote areas, is not available.³³

4. Conclusion

Developments are taking place outside of the digital dividend and reallocation process that may influence decisions on the future of the sixth channel. For example, it has been suggested that, in the not so distant future, spectrum bands that are highly valuable for both broadcasting and mobile applications would be allocated almost exclusively to mobile broadband, implying that broadcasting content would be carried primarily by fixed data networks such as the National Broadband Network (**NBN**).³⁴ As the NBN is in its infancy, this vision is still theoretical, and will not necessarily influence the allocation of the sixth channel. However, it is interesting to speculate how demand may change as fixed data networks continue to develop.

In addition, while the government's Convergence Review³⁵ is unlikely to consider the optimal uses for the sixth channel, the committee's interim report advocated for a uniform approach to allocating and managing broadcasting and non-broadcasting spectrum—implying the eventual removal of the concept of the BSB. The committee noted that decoupling the licensing of broadcasting spectrum from content obligations would lead to a more efficient use of spectrum, but did not outline what form that use might take.³⁶

The objectives of the relevant legislation provide some possible guidance on the best use for the sixth channel. With respect to spectrum management generally, the RA requires reference to a number of aims, including maximising the public benefit through the efficient allocation and use of spectrum, and making adequate provision for the use of spectrum by public or community services. With respect to the regulation of broadcasting, the objects of the BSA include a number of aims, such as promoting diversity in broadcasting content, developing "a sense of Australian identity, character and cultural diversity", and providing Australians with "high quality and innovative programming".³⁷ Taken together, these objectives provide a possible framework for considering the future of Australia's last nationally-available 7 MHz channel of BSB spectrum: to a use or uses that best balance economic and other efficiency aims with the public benefit to Australia of a vibrant, diverse and innovative broadcasting sector. Community television services, which if not allocated spectrum from the sixth channel face an uncertain future, are likely to be part of any such consideration.

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In any event, the sixth channel is unlikely to be available for permanent uses prior to restack being completed, which is unlikely to be earlier than the end of 2014. Any earlier introduction of permanent broadcasting services in the sixth channel would result in the possible relocation of those services, and might interfere with the restack of existing digital television services. However, given the high level of interest in the sixth channel, and the potential complexity of any decisions on its future, it is not too early to start serious consideration of its future.

It is of course possible that no decision will be made, and the current default situation will remain—in which the ACMA may use its powers to authorise temporary use of unallocated BSB spectrum, as long as "possible future demand" is taken into account.³⁸ Whether this result would be in the best interests of both industry and the greater public is, however, another question.

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30 Special Broadcasting Service, *SBS Submission—Spectrum reallocation in the 700 MHz digital dividend band Discussion Paper* (2010), p. 4, available at http://www.acma.gov.au/webwr/_assets/main/lib311973/sbs_icf34-2010.pdf.

31 DBCDE, *Review of technologies for digital radio in regional Australia: Final report* (7 October 2011), http://www.dbcde.gov.au/_data/assets/pdf_file/0003/140187/Final_Report_-_PDF_version_for_website_111011.pdf. The findings reported included that there is currently a preference for DAB+ technology, a general understanding that DAB+ may not be suitable in all regional licence areas, and a preference for DRM technology where DAB+ may not be appropriate (pp 21-22).

32 Each DAB+ multiplex occupies 1.536 MHz (also known as a "frequency block"). ACMA, "Digital radio" (11 May 2011), http://www.acma.gov.au/scripts/nc.dll?WEB/STANDARD/1001/pc=PC_90054.

33 While Digital Radio Mondial (DRM) and Digital Radio Mondiale Plus (DRM+) technologies present possible alternative to the introduction of digital radio in regional and remote areas of Australia, at this time they are not as advanced as DAB+ at a commercial level, including in the availability of receivers that will also receive DAB+, as well as AM/FM transmissions.

34 Telstra's Brian Miller (spectrum policy group manager) noted at the ACMA's RadComms 2011 conference that in 20 years spectrum bands below 5 GHz would be predominantly reserved for mobile broadband. R Crozier, "Telstra spies spectral swathe for broadband", *IT News for Australian Business* (26 May 2011), <http://www.itnews.com.au/Tools/Print.aspx?CIID=258674>.

35 In December 2010, the Australian government has established an independent review of Australia's communications and media regulation. The review committee is due to release its final report in March 2012.

36 DBCDE, *Convergence Review—Interim Report* (December 2011), pp 6-7.

37 RA, ss 3(a), (b)(ii); BSA, ss 3(a), (e), and (f).

38 BSA, s 34 (alternative uses of broadcasting services bands).