44 Avenue Road
Mosman NSW
Australia 2088

T : 61 2 8968 7100
F : 61 2 9969 3520
W : freetv.com.au

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Manager
Spectrum Licensing Policy Section
Radiocommunications Policy Branch
Australian Communications and Media Authority
PO Box 78
BELCONNEN ACT 2616

Dear Manager,

Free TV Response to the ACMA's Five Year Spectrum Outlook

Free TV welcomes the opportunity to comment on the ACMA's Five Year Spectrum Outlook 2013–2017.

Free TV's response and observations on the ACMA's Five Year Spectrum Outlook 2013 – 2017 are based on bands of interest to Free TV.

This letter is structured so that Free TV's views are outlined in response to respective sections in the Five Year Spectrum Outlook 2013-2017, in ascending page order.

Table 2.1 Frequency band plans (page 17)

*Television Outside Broadcast Services (1998*0*-2110 MHz and 2170-2300 MHz) Frequency Band Plan 2012.*

Free TV Response

Free TV notes the typo in 1998*0*-2110 MHz which should be corrected to 1980-2110 MHz.

4.3.6 Transition of wireless audio transmitters from the digital dividend

The ACMA is supporting the transition of users and suppliers of wireless audio transmitters from the digital dividend to other frequency bands by 31 December 2014. This work has been ongoing since the announcement of the digital dividend in 2010.

The operation of wireless audio transmitters is supported by arrangements in the Radiocommunications (Low Interference Potential Device) Class Licence 2000 *(the LIPD class licence). Wireless audio transmitters include wireless microphones and in-ear monitoring systems. They are used in a range of sectors such as entertainment, fitness, tourism, community and education.*

The frequency 694–820 MHz band—the digital dividend—will no longer be available for use by wireless audio transmitters from 1 January 2015. The main frequency band available for these transmitters after that date will be the 520–694 MHz band. The ACMA has also made changes to

Free TV Australia Limited
ABN 76 101 842 184
ACN 101 842 184

give users access to the 1790–1800 MHz frequency band, which was previously not available to them.

In 2013, the ACMA will finalise a proposal which will require suppliers to include, with each wireless audio transmitter that can operate in the digital dividend, a brief written statement about the limitations of its use after 31 December 2014. In addition, the ACMA will also finalise a proposal to allow suppliers a three-month transition period to stop supplying such transmitters into Australia. This change will reduce the number of transmitters being supplied to Australia that are capable of operating in the digital dividend.

Free TV Response

Free TV recommends that more information on the recent proposed revisions to the LIPD should be included.

5.2.2 2013–2017

Issues affecting spectrum demand

A feature of both radio and television spectrum demand within the BSB is the importance of regulation in determining spectrum requirements. The development of television and radio services in the BSB is both constrained and driven by legally imposed requirements on the broadcasting sector. Therefore, the highly regulated environment makes 'demand' an unreliable guide to future spectrum requirements. Put another way, future requirements for broadcasting spectrum are likely to depend critically on government decisions about the future development of the sector.

A second distinctive feature of planning for the BSB is that the minister, rather than the ACMA, is responsible for decisions to vary the BSB. This means that the ACMA does not have authority to make planning decisions that involve reviewing the boundaries of the BSB. The ACMA's observations about planning and demand issues affecting the BSB need to be read in the light of these distinctive features of broadcasting planning. As a result of the Australian Government's decision on the digital dividend in 2010 and the subsequent replanning and clearance of digital television services from the digital dividend band (694–820 MHz) expected to be complete by the end of 2014, it is anticipated that the minister will vary the BSB's in early 2015, to remove the digital dividend band.

Free TV Response

Free TV would also contend that like other radiocommunications sectors, future requirements for broadcasting spectrum are influenced heavily by trends in technology.

5.2.5 Beyond 2017

Digital television and planning issues

The digital switch off will release the channel capacity currently occupied by analog services in each area. Once the restack of digital television services has been completed, it is expected that there will be minimal scope for new services beyond the six services to be planned as part of the restack. There may be scope for additional in-fill sites for existing networks depending on the location or whether the site can be operated as part of a single frequency network.

In addition to the digital dividend in the UHF bands, a further VHF digital dividend is also likely to arise following the closure of Band I and II and Channel 5A analog television services. A process to consider future use of these bands will need to take place.

Free TV Response

Free TV seeks further clarification in relation to the proposed closure of Band I and II and Channel 5A analog television services.

5.10 Emerging technologies

Beyond 2017

The ACMA actively monitors and researches emerging technologies that have potential to significantly enhance the lives of Australians. As a result, the ACMA actively maintains awareness of international spectrum developments and other allocational spectrum management issues. In some circumstances, the ACMA has the opportunity to provide access to spectrum for trial purposes.

Identifying emerging technologies that utilise spectrum in new and innovative ways will be a challenge over the next decade. Advances in smart radio design, smart antennas, new digital signal processing and modulation techniques, software defined radios (SDR) and cognitive radio systems (CRS) are likely to broaden the capabilities and flexibility with which new wireless systems can be designed. Associated with this, the ACMA will also need to consider issues associated with the existing regulatory framework to determine whether current arrangements will suit proposed deployment of likely future emerging technologies.

5.10.1 Dynamic spectrum access technologies

Dynamic Spectrum Access (DSA) describes technologies that are designed to operate in spectrum that is not being used in a particular area or at a particular point in time. While these technologies operate at power levels that have the potential to cause interference to primary users, the constant monitoring of the DSA device's environment allows it to dynamically move its transmission to other 'unused' frequencies to minimise the interference.

At present, the only mature devices operate in television broadcast spectrum at locations where channels are not being used for television or other authorised services. This is known as 'TV white space'. However, white-space devices could be developed to use white space in other bands, for example, to provide broadband services especially in rural and remote areas where spectrum is generally less congested. DSA technologies can significantly increase the efficiency of spectrum use by enabling radios to access and share available spectrum.

Arrangements to address spectrum management issues associated with these technologies will be the subject of further work by the ACMA. DSA technologies are likely to challenge traditional views of spectrum regulation but they present opportunities to facilitate access to the spectrum to gain the most benefit. The ACMA is also mindful of these technologies when designing technical frameworks for new and expiring spectrum licences.

Free TV Response

Free TV notes the ACMA's interest in what it refers to as *Dynamic Spectrum Access (DSA) technologies.* Free TV also notes that these technologies have been applied in some countries where channels are not being used for television. Free TV is very concerned in the debate on these technologies to date, that the reason these channels are not assigned in an area is to achieve geographic separation between co-channel assignments causing interference from and to terrestrial television services.

Free TV looks forward to participating in any proposed consultation process.

6.2 Outlook work program 2013–2017

VHF	45–52 MHz and 56–70 MHz (VHF Band I) 85–92 MHz 87.5–108 MHz (VHF Band II)	Introduction of digital radio broadcasting in VHF Bands I or II. 45–52 MHz. Switch-off of analog television transmissions on VHF Band I and II will not be used for digital television broadcasting transmissions. The ACMA will assist the government in its digital switchover activities.	Although congestion may be alleviated as a result of the digital switchover, the ACMA is monitoring the development of related issues that are likely to impact demand for this band, such as the introduction of digital radio (DAB+) services in other bands. Consideration is also being given to the future reduction of channel spacing. The ACMA will continue to support digital radio trials and assist government where appropriate on the formulation of policy relating to future use of this spectrum. Some VHF channels may become available for non-broadcasting applications at the end of the simulcast period; the introduction of digital radio broadcasting is also a possibility. The ACMA will continue to monitor demand for non-commercial and regional radio broadcasting services and the development of different digital radio technologies.	MEDIUM Medium *Monitoring*

Free TV Response

Free TV was not aware that VHF Band I had been re-assigned for the introduction of digital radio broadcasting in VHF Bands I or II. Free TV seeks further clarification in relation to this issue.

Contact

We appreciate the opportunity to provide this response and look forward to working constructively with you on this and other issues facing the broadcasting industry.

Please contact me on (02) 8968 7100 if you would like to discuss this letter, or any other issue associated with the Inquiry.

Yours sincerely,

ROGER BUNCH
Director of Engineering