



**Submission by
Free TV Australia Limited**

Australian Communications and Media
Authority

Development of Australian views on
potential IMT candidate bands under WRC-
15 Agenda item 1.1

Discussion Paper 1: 470-520MHz

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1 EXECUTIVE SUMMARY

- Free TV Australia (Free TV) represents all of Australia's commercial free-to-air television broadcasters. At no cost to the public, our members provide nine channels of content across a broad range of genres, as well as rich online and mobile offerings. The value of commercial free-to-air television to the Australian public remains high. On any given day, free-to-air television is watched by around 14 million Australians.
- The technical standards underlying the free-to-air television broadcasting platform are a key element in the success of these services, which reach over 99% of Australian households.
- Technical evolution and development cannot occur without access to spectrum. Free TV strongly supports transparency and certainty in ACMA's spectrum planning and decision-making activities. The next five to ten years will see significant change in the areas of spectrum demand and management. It is critical that spectrum requirements for FTA broadcasting are incorporated into these processes.
- Free TV supports the ACMA's proposed view for the band 470-520 MHz, although it is recommended that the wording be strengthened to note that Australia will exclude itself from global or regional identification of the band for use by IMT.
- Any lack of access to spectrum for future innovation in digital television will seriously inhibit the ability of free-to-air television broadcasters to grow, evolve and innovate. This in turn limits their ability to continue providing innovative services to the public at no charge, and compete with other media platforms in a challenging converged media market. It is therefore essential that spectrum be available to broadcasters in the future for testing of, and migration to, new technologies.
- The harmonisation of usage in radio frequency bands currently pursued by the ACMA should also apply to broadcasting bands.
- Free TV Australia considers that Australia should investigate establishing in the medium to long term a harmonised frequency allocation 470-520MHz to Broadcasting as a primary service in Australia.
- Free TV proposes the following changes to the proposed ACMA text for development of the Australian View on the band 470-520MHz under WRC-15 Agenda Item 1.1 (changes are in italics and strikethrough):

Australia will not seek identification of the band 470-698MHz for use by IMT under WRC-15 Agenda item 1.1, and will exclude itself from a global or regional identification of the band for use by IMT.

Australia will:

- **not seek to include the band 470-698MHz on the list of potential candidate bands identified in JTG 4-5-6-7 under WRC-15 Agenda item 1.1**
- **not seek to include its name to a list of administrations identifying the band for use by IMT**
- **not oppose other administrations adding a new mobile allocation for the band and/or identifying the band for use by IMT in that administration or in Regions 1 or 2**
- **not oppose, ~~nor exclude Australia from,~~ a new mobile allocation in the band or identification of the band for use by IMT that is on either a global or regional basis.**



2 INTRODUCTION

Free TV Australia represents all of Australia's commercial free-to-air television broadcasters. Commercial free-to-air television remains the most popular source of entertainment and information for Australians.

Over the past 50 years, Australia's broadcasting policy framework and technical standards have delivered the best free-to-air television services in the world. Currently all of these services are provided using the DVB-T transmission standard and MPEG-2 video compression standard.

Free TV strongly supports transparency and certainty in the ACMA's spectrum planning and decision-making activities. The next five to ten years are going to see significant change in the areas of spectrum demand and management.

Free TV welcomes the opportunity to comment on *Discussion Paper 1: Development of Australian views on potential IMT candidate bands under WRC-15 Agenda item 1.1*. Free TV's primary focus is on the band 470-520MHz.

Australia's commercial free-to-air broadcasters have first-hand experience of the increasing demand for spectrum applied to broadcasting applications, and the resulting pressures on government, regulators and incumbent users.

Free TV recognises the role played by the ACMA in administering Australia's participation on behalf of the government in radiocommunications regulation within the International Telecommunications Union (ITU) and the treaty decisions made at World Radiocommunication Conferences (WRC).

Ongoing accountability and transparency regarding the ACMA's assessment of spectrum demand issues has the potential to improve stakeholder relations and industry confidence. This is particularly important as we move into a period of significant change in the areas of spectrum demand and management.

The ACMA initiated in 2012 a consultation titled *Beyond switchover – the future technical evolution of digital terrestrial television in Australia*. The major assumption in launching this consultation is presumably the future of the Australian terrestrial television platform.

In developing a path to the next generation of platform and service standards, it is important to ensure that:

- any new standards are fully developed,
- there is spectrum available for testing and trialling of new technologies;
- there is spectrum available for a smooth transition, and
- consumers are not put to unnecessary expense.

For these reasons, any transition to new technologies in the broadcasting environment requires consideration of both technical and policy issues.

Planning for the evolution of these new DTTB services must recognise the importance of free-to-air terrestrial television services in Australia. Although there are a growing number of platforms for the delivery of audio-visual content, free-to-air television is the only service that does not require a paid subscription of some form. Most other subscription services (whether on Pay TV or the internet) in fact rely on the incorporation of the free-to-air services as a foundation tier in their service packages to attract clients.

The service is free for all Australians, providing valuable public goods such as access to news and current affairs, as well as an investment in the production and distribution of a diverse range of quality Australian content.



Free-to-air television broadcasters rely on the broadcasting service bands (BSB) spectrum to deliver highly valued and popular free to air television content to all Australians. The maintenance, improvement and future accessibility of these services should be central to the ACMA's consideration of these issues. The demand for spectrum from other services (particularly mobile broadband) will continue to be a challenge.

The evolution to new free to air terrestrial television platform technologies will continue to rely on the availability of spectrum.

3 Guiding principles

Free TV believes that there are some principles that should shape the ACMA's consideration in determining future harmonisation of the band 470-520MHz for technical evolution of the digital free-to-air platform. These are:

1. recognition of the continued role of the digital free-to-air platform as the pre-eminent delivery mode for one-to-many,
2. the need to make spectrum available for testing and simulcast to maximise the opportunities for broadcasters to deliver improvements to viewers, including premium quality services such as 3DTV and UltraHD,
3. a collaborative approach which enables broadcasters to incorporate any migration path into long term business planning, and
4. sufficient lead time for establishment of transmission and receiver standards.

These over-arching principles should form the basis of any migration and evolutionary planning for DTTB.

4 Spectrum: the best delivery mechanism

It is worth re-iterating the importance of spectrum as the most effective one-to-many delivery mechanism for television in Australia and its effectiveness in reaching mass populations, including in times of crisis.

A combination of UHF and VHF spectrum has successfully delivered spectrally efficient wide area television broadcasting services in Australia. This means that large populations receive terrestrial television services from relatively few transmitter sites.

TV channel planning has continued to focus on equalisation of services across Australia. Television service coverage has been achieved with spectrum allocations smaller than that allocated to comparable services. For instance, the current spectrum allocation post restack for DTTB services in Australia will be 210MHz for a geographic area significantly larger than Europe, whereas across Europe the allocated spectrum for DTTB is currently 320MHz.

5 Broadcasting Spectrum Demand

The overriding spectrum issue facing government and the free-to-air television industry in the next five years is to ensure that all viewers are able to continually receive digital free-to-view television into the future.

Television broadcasters are under considerable pressure from perceived demand for spectrum by others in Australia.

Decisions to change the existing use of BSB spectrum in response to perceived increase in demand from other services should not impact or reduce protection of the existing and future television broadcasting services that occupy the UHF spectrum.



For industry to have confidence in the ACMA spectrum decision-making process, decisions must be justified in an open and transparent manner throughout this process. A failure to commit to transparency in practice will lead to a lack of trust between industry and the ACMA.

In this regard, there will need to be sufficient consideration of the spectrum needs likely to arise as television services develop and adopt new technologies. The ACMA must recognise the impact of future broadcasting spectrum demand pressures in the BSB spectrum, such as second generation digital television, migration to alternative coding technologies and ultra-high definition television services.

Broadcasters reported these as important issues when interviewed by the consultants engaged by the ACMA in the preparation of the Five Year Spectrum Outlook and the 2009 review of the Australian Radiofrequency Spectrum Plan. Such matters must also be considered by Analysis Mason in their forecasts to 2025 for the ACMA.

6 Future spectrum planning requirements for DTTB

The success of the transition to DTTB in Australia has been largely due to the availability of spectrum for simulcast during the analogue-to-digital migration.

The successful transition was enabled within the short time frame because there was adequate adjacent spectrum to enable a simulcast of the broadcaster's transmissions during the gradual replacement of household TV receivers.

Critically, the history of the introduction of DTTB demonstrates that successful and efficient migration to a new radiocommunications technology requires available spectrum for the introduction of the new technology. This has also been the case for both digital radio and mobile telephone technologies.

Since the decision to mandate a Digital Dividend of 126 MHz in Australia, spectrum for a migration to a new DTTB platform is not easily identified. The substantial reduction in spectrum as a result of the Digital Dividend limits the capacity for a transition to future broadcast technologies. This is a point that has been made repeatedly by Free TV in recent years.

The issue was raised by Free TV during the Green paper consultation stage of the Digital Dividend process, and in other submissions focused on the spectrum demands of technology migration (specifically in relation to DVB-T2 and MPEG-4).¹

The lack of access to spectrum for future innovation in digital television will seriously inhibit the ability of free-to-air television broadcasters to grow, evolve and innovate. This in turn limits their ability to compete with other media platforms in a challenging converged media market.

More efficient transmission or compression techniques for delivering additional services such as 3DTV and/or UHD TV to free-to-air viewers simply cannot be explored without access to spectrum.

Competing platforms such as pay TV and mobile broadband do not face these constraints. Viewers should not be forced to pay for these exciting new services on alternative platforms.

Similarly, a transition to DVB-T2 cannot occur without a reasonable period of simulcast, because of the impact on households with legacy MPEG-2/DVB-T receivers. Without it, many viewers face a loss of, or unacceptable interruption to, free-to-air television services.

¹ [Free TV Australia submission to ACMA's Five Year Spectrum Outlook](#) and [Submission to spectrum reallocation in the 700 MHz digital dividend band](#)



7 Australian UHF band segmentation

The ACMA has recognised “An essential and challenging element of spectrum management is recognising and meeting the needs of existing spectrum users while at the same time supporting the dynamic growth and changing uses of spectrum within what is a finite resource”.²

Planning terrestrial television broadcasting in Australia fits well into the perspective held by the ACMA and has been the experience of government, the regulator.

Free TV also notes the ACMA’s keen interest to pursue “harmonised spectrum usage”, nationally, regionally and globally as outlined in the recent RadComms conference.

a. 2012 edition of the Radio Regulations

The 2012 edition of the Radio Regulations indicates that within the sub division 460-890 MHz the band is divided in Region 3 in the following manner, where 470MHz and above is allocated to the Broadcasting service on a Primary basis:

b. Harmonisation of frequency bands

The ACMA and its Chairman have indicated support for regional and global harmonisation of spectrum for usage on a number of occasions³, including at the recent CommsDay Congress on Wednesday 10 April 2013 in Sydney. At that event, Chris Chapman stated: :

*While these technical benefits could have been realised even if Australia had ‘gone it alone’ on the APT 700 plan, **harmonising** with our Asia–Pacific neighbours means we have ensured that phone manufacturers will well cater to the Australian market. One of the key benefits from such spectrum **harmonisation** efforts is economic, and the wider the global spectrum organisation around the APT plan, the greater the commensurate economic benefits.*

...

This work is delivering substantial economic benefits for all Australians—from faster download speeds, to cheaper handsets, to the productivity benefits flowing from the take up of mobile technology by Australian industry.

The ACMA will be quantifying these impacts, and I intend to release these results in mid year, as part of our ongoing dialogue with the Australian community about the best use of our public spectrum resources.

² <http://www.acma.gov.au/Industry/Spectrum/Spectrum-planning/About-spectrum-planning/spectrum-licensing-technical-framework>

³ For example: Speech by Chris Chapman, to the 2013 GSMA Ministerial Program - *The power of the Asia–Pacific region uniting under a harmonised spectrum plan*; and Chris Chapman’s response to the release of the Five Year Spectrum Outlook 2012-2016.



It is very clear from the statements made above that the ACMA is committed to harmonisation of spectrum usage.

8 Harmonisation of the frequency band 470-520MHz

In all ITU Regions as indicated in Article 5 of the 2012 edition of the Radio Regulations the band 470-520MHz is allocated to Broadcasting on a Primary basis.

460-890 MHz

Allocation to services		
Region 1	Region 2	Region 3
460-470	FIXED MOBILE 5.286AA Meteorological-satellite (space-to-Earth) 5.287 5.288 5.289 5.290	
470-790 BROADCASTING 5.149 5.291A 5.294 5.296 5.300 5.304 5.306 5.311A 5.312 5.312A	470-512 BROADCASTING Fixed Mobile 5.292 5.293	470-585 FIXED MOBILE BROADCASTING 5.291 5.298
	512-608 BROADCASTING 5.297	585-610 FIXED MOBILE BROADCASTING RADIONAVIGATION 5.149 5.305 5.306 5.307
	608-614 RADIO ASTRONOMY Mobile-satellite except aeronautical mobile-satellite (Earth-to-space)	610-890 FIXED MOBILE 5.313A 5.317A BROADCASTING
	614-698 BROADCASTING Fixed Mobile 5.293 5.309 5.311A	
	698-806 MOBILE 5.313B 5.317A BROADCASTING Fixed	
		5.293 5.309 5.311A
790-862 FIXED MOBILE except aeronautical mobile 5.316B 5.317A BROADCASTING 5.312 5.314 5.315 5.316 5.316A 5.319	806-890 FIXED MOBILE 5.317A BROADCASTING	
862-890 FIXED MOBILE except aeronautical mobile 5.317A BROADCASTING 5.322		



5.319 5.323	5.317 5.318	5.149 5.305 5.306 5.307 5.311A 5.320
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In the current edition (2013) of the Australian Radiofrequency Spectrum Plan the allocations are designated as follows:

MHz
460 – 890

Column 1: ITU Radio Regulations Table of Allocations			Column 2:	
Region 1	Region 2	Region 3	Australian Table of Allocations	
460 – 470	FIXED MOBILE 286AA Meteorological–satellite (space-to-Earth)		460 – 470 FIXED MOBILE 286AA Meteorological–satellite (space-to-Earth) 287 289 AUS98	
470 – 790 BROADCASTING	470 – 512 BROADCASTING Fixed Mobile 292 293	470 – 585 FIXED MOBILE BROADCASTING	470 – 520 FIXED MOBILE	
	512 – 608 BROADCASTING 297			520 – 694 BROADCASTING Fixed Mobile
	608 – 614 RADIO ASTRONOMY Mobile–satellite except aeronautical mobile– satellite (Earth-to-space)	585 – 610 FIXED MOBILE BROADCASTING RADIONAVIGATION 149 305 306 307		
	614 – 698 BROADCASTING Fixed Mobile 293 309 311A	610 – 890 FIXED MOBILE 313A 317A BROADCASTING	149 306 311A AUS103 AUS104	
	698 – 806 MOBILE 313B 317A BROADCASTING Fixed 293 309 311A		694 – 820 BROADCASTING Fixed Mobile	
	790 – 862 FIXED MOBILE except aeronautical mobile 316B 317A BROADCASTING	806 – 890 FIXED MOBILE 317A BROADCASTING	311A 320 AUS103	
312 314 315 316 316A 319	820 – 850 FIXED MOBILE 317A 320 AUS103			
862 – 890 FIXED MOBILE except aeronautical mobile 317A BROADCASTING 322 319 323	317 318	149 305 306 307 311A 320	850 – 890 FIXED MOBILE 317A Radiolocation AUS29 AUS101A 320 AUS103	



Free TV is very concerned that we need to take into consideration the evolution of DTTB in Australia and the future spectrum frequency requirements for terrestrial television broadcasting in Australia. This matter appears to be without clear definition as in other Regions and other countries, who are planning the migration to 2nd generation DTTB systems.

Free TV is also concerned that while the ACMA believes in pursuing harmonisation of usage in radio frequency bands for some spectrum users the same should apply to other spectrum users.

9 Proposed Australian View

Free TV supports the ACMA in its decision to propose that Australia not seek identification of the band 470 to 520 for IMT services.

However, Free TV recommends some amendment to the wording of the proposed approach, in recognition of the need for spectrum to be available for future testing and migration of new television technologies.

Free TV therefore suggests that the ACMA's proposed wording be amended as follows [amendments in italics and strikethrough]:

Australia will not seek identification of the band 470-698MHz for use by IMT under WRC-15 Agenda item 1.1, and will exclude itself from a global or regional identification of the band for use by IMT.

Australia will:

- **not seek to include the band 470-698MHz on the list of potential candidate bands identified in JTG 4-5-6-7 under WRC-15 Agenda item 1.1**
- **not seek to include its name to a list of administrations identifying the band for use by IMT**
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