Australian Government

Department of Communications

Digital Radio

Reviews to be conducted under section 215B of the *Broadcasting Services Act 1992* and section 313B of the *Radiocommunications Act 1992*

Discussion paper

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Introduction

Digital radio services have been available in Australia since 2009. National and commercial digital radio services have been broadcasting in Adelaide, Brisbane, Melbourne, Perth and Sydney since 1 July 2009. Community radio broadcasters formally launched their digital radio services in these markets in May 2011. Digital radio trials, currently being conducted in Canberra and Darwin, were recently extended until 31 August 2014. Around 64 per cent of the Australian population now live in areas covered by digital radio transmissions.

The Minister for Communications is required to cause to be conducted two statutory reviews of digital radio issues by 1 January 2014 in accordance with section 215B of the *Broadcasting Services Act 1992* (BSA) and section 313B of the *Radiocommunications Act 1992* (Radiocommunications Act). Given that the matters required to be considered by each of these reviews are interrelated, the Minister has agreed they be examined in a combined process. That process will be informed by responses to this discussion paper as well as consultations with stakeholders, including overseas organisations and regulators (which have already commenced).

The matters to be examined by this discussion paper include:

1. the development of various terrestrial and satellite technologies capable of transmitting digital radio broadcasting services and restricted datacasting services in Australia;
2. the use of spectrum for the transmission of digital radio services and restricted datacasting services in Australia;
3. the implementation of those technologies in foreign countries;
4. the operation of the BSA in so far as it deals with the licensing and regulation of digital radio and restricted datacasting services;
5. the availability of additional frequency channels for the transmission of digital radio broadcasting services and restricted datacasting services in Australia; and
6. the effectiveness of the multiplex access regime administered by the Australian Competition and Consumer Commission.

This discussion paper will also consider emerging trends in the ways in which audiences access radio services since the commencement of digital radio services, with a particular focus on the use of connected devices and smartphones.

Full details of the statutory requirements of each review are provided at **Attachment A** and the Minister will prepare a report on the two reviews to be tabled in each House of the Parliament.

This discussion paper

This paper provides a brief overview of the issues that must be examined by the review process, as well as a brief discussion of the legislative framework and current status of digital radio in Australia and overseas. It also considers the development of new and emerging services such as online and mobile services and their impact on the development of digital radio.

Submitters can, if they wish, respond to some or all of the key issues raised throughout the discussion paper, or raise a matter not explicitly addressed as long as it is pertinent to the terms of reference of one or both of the reviews. Written submissions in relation to digital radio questions raised in this paper, general statements and new ideas are also welcome. Details of how to make a submission can be found in Part 5.

Part 1: The regulatory framework

The regulatory framework for digital radio in Australia is set out in the BSA and the Radiocommunications Act. The framework was implemented in the *Broadcasting Legislation Amendment (Digital Radio) Act 2007*, which was passed by the Australian Parliament in May 2007, amending the BSA and the Radiocommunications Act. The following year, the framework was modified slightly by the *Broadcasting Legislation Amendment (Digital Radio) Act 2008*.

Key aspects of the digital radio framework

Digital radio services are intended to operate alongside, rather than replace, existing analog (AM and FM) radio services. This is a different approach from that taken for digital television. There are currently no plans to switch off analog radio services, nor is there any requirement to simulcast both analog and digital radio services.

Digital radio was designed to be introduced in stages, commencing first in metropolitan areas, where new services were considered most likely to be commercially viable. Broadcasting legislation allows for broadcasters in areas outside of the five mainland state capitals to approach the Australian Communications and Media Authority (ACMA) about the planning of digital radio services in their area. Under the BSA, the Minister for Communications can specify a digital radio start up day in a regional licence area by means of a legislative instrument. Once certain other pre-conditions are met, the ACMA must in turn declare the same digital radio start-up day. The technology currently being used to provide digital radio services in Australia is an advanced form of Digital Audio Broadcasting (DAB) technology known as DAB+ (DAB is also known as Eureka 147). Further information about digital radio technology in Australia and overseas can be found in Part 3.

The ACMA has spectrum planning powers in relation to digital radio and has identified 14 MHz of spectrum that will not be used for television in non-remote television licence areas for the use of digital radio broadcasters. For more information about spectrum planning for digital radio, please see Part 4.

The digital radio framework established a new licence category to accommodate the shared transmission infrastructure. Under the framework, the ACMA has allocated eight digital radio multiplex licences to joint venture companies representing commercial and community broadcasters. The joint venture companies are responsible for using a multiplex to combine and transmit the separate streams of radio programs from individual broadcasters to end users in each licence area. Information about the licensing regime applying to these multiplexes can also be found in Part 4. The ABC and SBS share a multiplex in all mainland state capital cities.

Division 4B of Part 3.3 of the Radiocommunications Act sets out an access regime for the multiplex transmitter licences. The access regime, which is administered by the Australian Competition and Consumer Commission (ACCC), is designed to ensure that eligible broadcasters have access to the multiplex transmission service on reasonable terms and conditions.

The eight multiplex transmitter licensees have provided access undertakings to the ACCC that set out the terms and conditions on which they propose to provide access to commercial and community broadcasters. It is only after an undertaking has been accepted by the ACCC that ACMA can declare that digital radio services can begin in a licence area. The undertakings provided by the eight multiplex licensees were agreed to on 22 April 2009 and can be found at

http://www.accc.gov.au/regulated-infrastructure/communications/broadcasting-content/digital-radio-services/undertakings

The digital radio joint venture companies are required to submit annual reports to the ACCC. The reports cover matters relating to compliance with the legislation and the undertakings. The reports, including the most recent (2011-12), can be accessed at: http://www.accc.gov.au/regulated-infrastructure/communications/broadcasting-content/digital-radio-services/annual-reports

Another key feature of the initial digital radio regulatory framework is a six year moratorium on the issue of new digital commercial radio broadcasting licences after the digital radio start-up day for that licence area. A period of protection from new entrants to the market was included in the framework to provide incumbent commercial broadcasters a level of stability and certainty during the initial digital radio investment phase. The moratorium expires on 30 June 2015 in metropolitan licence areas.

Questions:

1. Is the licensing and planning framework for digital radio operating effectively? Should any changes be made to the regulatory framework?
2. Should the provisions concerning the commencement of digital radio services be modified or removed, allowing broadcasters to commence services whenever they wish (subject to spectrum planning considerations)?
3. Is the access regime established in Part 3.3 of the Radiocommunications Act operating effectively? Is the system of access undertakings working as it should?
4. Should any of the provisions relating to the access regime be amended or replaced?
5. Are the reasons for a moratorium on new licence area planned commercial digital radio licences still valid? Should the moratorium, which is due to expire on 30 June 2015, be extended or discontinued?

Part 2: Restricted Datacasting

As part of the digital radio framework, a new category of service known as a restricted datacasting service was established. The intention was that holders of a restricted datacasting licence would use the DAB+ digital radio platform to provide services other than traditional radio and television programming. In particular, it was thought that niche services, such as information only programs, educational programs or interactive computer games, might be provided on these services.

During the six year moratorium period which, as noted in Part 1, expires on 30 June 2015, a person is prohibited from being in a position to exercise control of both a commercial radio broadcasting licence and a restricted datacasting licence.

The ACMA has not issued any restricted datacasting licences since the category was established.

Questions:

6. Should there be any changes to the initial restricted datacasting framework?
7. Given that the ACMA has not issued any restricted datacasting licences, is there any future for such services?
8. How can restricted datacasting be made more attractive to new entrants to the market?
9. Should there be additional spectrum allocated for restricted datacasting services?

Part 3: The Technological Environment and Audience Profile

DAB+

On 14 October 2005, the Government announced a policy framework to guide the introduction of digital radio, including the intention to adopt the DAB standard. A more advanced version of DAB, known as DAB+, was ultimately adopted for the initial rollout of digital radio services in Australia.

National, commercial and community digital radio services currently operate in all of the mainland state capital cities (Adelaide, Brisbane, Melbourne, Perth and Sydney) using DAB+. Trials of digital radio services using DAB+ are also taking place in Canberra and Darwin.

Internationally, DAB and DAB+ are currently the most widely used digital radio standard. DAB services are provided in about 16 countries, including Canada, China, Germany, Singapore and the United Kingdom, with DAB+ services operating in a number of other countries including Malta and Switzerland.

As in Australia, digital radio services in other countries are also generally complementary to the existing suite of analog AM and FM radio services. However, several European countries are considering switching off certain analog radio services or have long-term analog radio switch-off plans provided that certain conditions are met (though none of these countries have met their targets at this stage).

In the United Kingdom, the media regulator, (Ofcom), has announced a process to determine a digital radio switchover date. Digital switchover will commence when 50 per cent of all radio listening is via digital platforms, national DAB coverage is comparable to FM, and local DAB coverage reaches 90 per cent of the population and all major roads (at present approximately 33.9 per cent of all radio listening is digital radio). National DAB coverage in the United Kingdom is at 94.4 per cent for national broadcaster services and 89.5 per cent for commercial broadcaster services, while local DAB coverage is 71.7 per cent.

However, in recent weeks there has been concern expressed about the potential effect on smaller stations of analog switch off. On 28 November 2013, the Parliamentary Under Secretary of State for Culture, Communications and Creative Industries told the House of Commons that the Government would not be pushed into a switchover date and indicated that before switch off could occur there would need to be better coverage, cheaper digital radio sets, more cars with DAB fitted as standard and better content.[1]

In Norway, the Government has announced that FM broadcasting will switch-off in January 2017, provided public and commercial broadcasters achieve over 99 per cent and 90 per cent digital radio

[1] Quoted in *The Guardian,* Friday 28 November 2013 http://www.theguardian.com/media/2013/nov/29/ed-vaizey-delays-digital-radio-switchover-date

coverage respectively (at present DAB coverage is approximately 84 per cent). Currently, 50 per cent of listeners in Norway use a digital platform daily and in-car solutions are readily available.

DRM

DRM was developed by a European consortium to provide a digital broadcasting system suitable for the Medium Frequency (AM) band. DRM is a set of digital audio broadcasting technologies designed to work over the bands currently used for AM broadcasting, particularly shortwave. DRM can fit more channels than AM, at higher quality, into a given amount of bandwidth, using various compression techniques. The original DRM standard is now commonly known as DRM30. It operates on frequencies below 30 MHz. An additional DRM standard, DRM+, is currently being tested, with the expectation that it will be able to operate in the VHF bands.

The review conducted in 2011 under section 215A of the BSA considered technologies for digital radio services in regional Australia. A common theme in many submissions from the previous review was that DRM30 could provide economical, wide-area coverage similar to high-power regional AM radio services and DRM+ had potential to provide wide-area coverage equivalent to regional FM radio services. However, submissions also noted that a lack of available receivers is the main drawback to adopting DRM at the current time.

DRM is currently being rolled out in India. It is also used in Europe, Asia and the Americas for international broadcasting services such as BBC Worldwide.

ISDB-T

ISDB-T, which was developed and is used in Japan, is regarded by some as drawing upon a number of existing technologies, particularly DAB. However, ISDB-T's distinctiveness lies in the fact that it blurs the distinction between audio media and audiovisual media, so that the broadcast media content the consumer is able to receive is mostly dependent on the type of receiver.[2]

IBOC

In-Band On-Channel (IBOC) also known as HD Radio, which has been used in the United States, is a hybrid method of transmitting digital and analog radio broadcast signals simultaneously on the same frequency. However, interference to stations on adjacent channels has been a significant issue with the IBOC technology.

Satellite Digital Audio Radio Services

Satellite is also used in some countries as an additional radio delivery platform. In fact, satellite technology is used to deliver a number of digital radio services in Australia. For example, ABC and SBS analog and digital radio services are available on the Viewer Access Satellite Television (VAST) service and about 30 subscription radio services are available through Foxtel.

The United States and Canada offer subscription satellite digital radio services supplemented by a network of terrestrial repeaters. Satellite radio has had a difficult history in the United States where the two leading satellite radio companies, XM and Sirius, were prohibited for many years from merging on anti-competitiveness grounds. However, the companies eventually merged to become SiriusXM Radio in 2008, with media reports indicating that the companies had successfully argued

[2] O'Neill, B., (ed.) *Digital Radio in Europe* (2010) p. 53

that satellite radio was just one voice within a market which includes not only terrestrial radio but online streaming, mp3 players and tablets.[3]. According to its website, SiriusXM now has 25.6 million subscribers.[4] Subscription satellite radio services are also provided in the Middle East and Asia.

Online and other platforms

Digital radio roll out to date in Australia has focused on the 'traditional' model of one-to-many terrestrial broadcasting using digital delivery formats. These services potentially offer benefits such as better quality audio, more channels, and the potential for new services but their capacity for interactivity and direct user choice is limited.

Radio services have been streamed over the internet for many years. Australian radio broadcasters have recognised the use of alternative platforms to complement their traditional broadcasting services. For example, the ABC's radio services now comprise traditional analog radio, podcasts, digital radio including several new channels delivered exclusively in digital format, streamed radio services online, and mobile apps optimised for both iOS and Android platforms. Services can be received through analog and digital terrestrial radio broadcast, terrestrial television, the internet, mobile and satellite. Likewise, commercial radio broadcasters are also increasingly streaming their services to ensure they can be accessed through online platforms, tablets and smartphones. Southern Cross Austereo, for example, advises that it has over 80 websites reaching more than 885,000 audience members each month, as well as using apps, m-sites and social media.

In a recent report on the connected consumer, Nielsen outlines that content that was once only available to consumers through specific methods of delivery is increasingly being sourced and delivered to consumers through their connected devices.[5] Nielsen estimates that six in 10 Australian internet users have a smartphone and three in 10 have a tablet computer in their household. By February 2014, Nielsen anticipates that seven in 10 internet users will have a smartphone and half will have a tablet in their household.[6] The ACMA reports that 62% of Australian adults now use the internet via mobile handsets (a 19% increase over the previous year) and that the volume of data downloaded on mobiles has grown by 97% in the June quarter 2013 compared to the June quarter 2012.[7]

This growth of internet and mobile use has been accompanied by significant changes in the types of services available such as Spotify, Pandora, TuneIn Radio, iHeartRadio and iTunes radio. These services allow listeners to access accounts through multiple devices, wirelessly integrate them with home and car stereos through bluetooth or other applications and provide an additional platform for streaming music and listening to radio services. The rapid growth in these alternative platforms and services will impact on the radio industry in Australia in ways which are difficult to predict, but they represent a significant paradigm shift in listening and information-gathering habits which are likely to have implications for digital radio services.

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[3] O'Neill, B., (ed.) *Digital Radio in Europe* (2010) p. 53

[4] http://www.siriusxm.com/corporate downloaded 1 December 2013

[5] Nielsen *Australian Connected Consumers* (February 2013) p. 4

[6] Nielsen *Australian Connected Consumers* (February 2013) p. 4

[7] Australian Communications and Media Authority, *Communications Report 2013*

Audiences

There is little definitive public data on digital radio listening habits in Australia, however Pricewaterhouse Coopers reported that 1,002,966 digital radios had been sold across Australia by November 2012[8]. There are a number of reports that internet radio, accessed either through the listener's smartphone or, increasingly, through an internet-enabled entertainment system in the listener's car, is starting to compete with digital radio services. Nielsen reports that five million Australians accessed online radio stations in the six months to May 2013 compared to 4.7 million in the six months to May 2012 (a six per cent increase).[9] Australian internet users are spending an average of eight and a half hours a week listening to traditional broadcast radio, however, online radio listening now represents around half that amount of time (4 hours 18 minutes a week).[10] The Australian Mobile Phone Lifestyle Index (AMPLI) report published in October 2013 found that 40 per cent of respondents streamed music on their mobile phone – almost double the 21 per cent recorded in 2012.

Approximately 34 per cent of radio listening in Australia takes place in the car[11]. In-car and in-home listening of radio and other audio is increasingly being achieved by streaming data over internet protocol utilising wireless and fixed internet connections. The increased availability of so-called 'connected' cars may further promote such listening in the future. Hybrid radio and audio technologies that utilise both spectrum and internet protocol are also currently being developed.

[8] It should be noted that some digital radios are available nationally and may have been purchased in areas where digital radio services are not available.

[9] Australian Communications and Media Authority, *Communications Report 2012-13* p. 124

[10] Nielsen *Australian Connected Consumers* (February 2013) p.133

[11] Digital Radio Report (2012) p.13 www.commercialradio.com.au/.../DR%20Industry%20Report

Questions:

10. What is your assessment of the trends in digital terrestrial radio technology? Does the overseas experience with these technologies have anything to teach us about their merits and appropriateness in the Australian environment?
11. What are your views about the impacts of smartphone and other streamed audio services on the future of 'traditional' radio listening? What data do you have to support these views?
12. Given its importance in the radio listening environment, what digital radio technologies are likely to be adopted by car manufacturers in the short to medium term?
13. What impact, if any, will the intent of several car manufacturers to install internet-connected entertainment systems have on the future of digital radio?
14. If you import or sell receivers, are you aware of any new developments which may have applicability in the Australian market? If so over what timeframe?
15. Given its ability to cover large geographic areas, do you think satellite radio may have a future in Australia?
16. Have you conducted or commissioned any research into digital radio audience figures or the demographics of digital radio listeners since digital radio services commenced in 2009? If so, what are the current and projected audiences for digital radio?
17. Have you conducted or commissioned any research into the growth in streaming radio services across online platforms and connected devices including mobile phones, tablets or desktop computers? If so, what are the current online radio audience figures and the demographics of listeners? Do you have any research on the projected growth of these digital radio technologies?

Part 4: Spectrum and licensing

Spectrum

In July 2010, the Minister for Communications issued the *Australian Communications and Media Authority (Realising the Digital Dividend) Direction 2010* directed the ACMA, as part of its spectrum planning functions in respect of the digital dividend, to consider reserving 14 MHz of spectrum in each metropolitan licence area for the provision of digital radio broadcasting services. The ACMA has identified this amount of spectrum that will not be used for television services in non-remote television licence areas for the potential future introduction of digital radio services.

14 MHz represents the maximum amount of broadcasting spectrum available for DAB+ digital radio services, as the remaining VHF Band III spectrum has been planned for use by digital television services. In some cases, this spectrum will not be available until the restack of digital television services to realise the digital dividend is completed. Any rollout of DAB+ digital radio services to regional licence areas using 14 MHz of spectrum would involve consideration of potential interference issues and raise other technical, legislative and policy considerations.

While the BSA and Radiocommunications Act do not specify the technology to be used for digital radio services, the legislative structure reflects the DAB environment. The current provisions require licensees to be shareholders in a Joint Venture Company (JVC) and provide eligible 'access seekers' rights to use capacity on a multiplex.

In the five metropolitan licence areas, all commercial licensees have chosen to become shareholders in JVCs and community broadcasters have chosen to become access seekers. The Radiocommunications Act also allows each of the national broadcasters to be JVC shareholders.

Licensing

As noted above, the licensing framework for digital radio is established by the Radiocommunications Act using a multiplex transmitter licence category system. Digital radio multiplex transmitter (DRMT) licences are split into categories 1, 2 and 3.

Category 1 and category 2 DRMTs are able to be declared 'foundation licences' by the ACMA (sections 98C and 98D of the Radiocommunications Act refer). Foundation licences provide certain 'standard access entitlements' for incumbent licensees, namely:

1. One ninth of multiplex capacity under a foundation category 1 or category 2 DRMT is reserved for each incumbent digital commercial radio licensee in the area.
2. Two ninths of multiplex capacity under a foundation category 1 or category 2 DRMT is reserved for community broadcasters.
3. One ninth of multiplex capacity under a foundation category 2 DRMT is reserved for national broadcasters.

Foundation DRMT licensees must be eligible joint venture companies, shares in which can only be held by incumbent digital commercial radio broadcasters, digital community radio broadcasting representative companies and national broadcasters.

The ACMA has allocated eight foundation category 1 DRMT licences – two each in Brisbane, Melbourne and Sydney, and one each in Adelaide and Perth. In Brisbane, Melbourne and Sydney, commercial and community broadcasters share two multiplexes. In Adelaide and Perth, commercial and community broadcasters share one multiplex. In these shared multiplexes, two ninths of the bandwidth is reserved for community broadcasters.

ACMA has not declared any foundation category 2 DRMT licences.

Category 3 DRMT licences are reserved for the national broadcasters. The ACMA has issued a category 3 DRMT licence in each metropolitan licence area. The ABC and SBS share a multiplex in all mainland state capital cities.

Using Sydney, which has three multiplexes, as an example, at present there are about 50 digital radio stations available. Many of these replicate existing analog radio services but about half are only available in digital format. Special event digital only stations are also used for limited periods on occasion e.g. to broadcast rock concerts or sporting events otherwise unable to be covered.

Questions:

18. Are there alternative allocations of spectrum the Government could be considering for terrestrially based digital radio?
19. What has been your experience of the establishment and operation of a digital radio multiplex? Are there alternative arrangements for sharing multiplexes which would be more efficient, particularly in regional areas, where there are generally fewer services than in metropolitan areas?
20. Is the current regulatory and technical framework for digital radio best suited to providing digital radio in regional and remote Australia? What mix of features (for example, range of services, signal/population coverage) are desirable?
21. In order to maintain audio quality, should there be a mandatory minimum amount of bandwidth used per station?

Part 5: Next Steps

The Department of Communications will consider submissions and other input received in response to this discussion paper before drafting the report on the two digital radio reviews. Submissions must be received by the Department by 14 February 2014.

Submissions should respond to some or all of the key issues raised throughout the discussion paper, or can raise a matter not explicitly addressed, as long as it is pertinent to the terms of reference of one or both of the reviews.

Unless a contributor specifies otherwise, the Department will publish each submission on its website after the submissions period has closed. Please indicate whether any submission (or part of your submission) is confidential or sensitive to ensure that it is not published. Alternatively, you may choose to provide an additional version of that submission for public release.

Submitters of material marked as confidential or sensitive must understand that submissions may be released where authorised or required by law or for the purpose of parliamentary processes. The Department will strive to consult submitters of confidential information before that information is provided to another body or agency. However, the Department cannot guarantee that confidential information will not be released through these or other legal means.

Submissions should be directed to:

Broadcasting Policy Branch

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Broadcasting Policy Branch

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Attachment A
Review of digital radio required under s 313B of the *Radiocommunications Act 1992*

313B Review

(1) Before 1 January 2014, the Minister must cause to be conducted a review of the following matters:

(a) the use of spectrum for the transmission of:
  i. digital radio broadcasting services; and
  ii. restricted datacasting services;
  in Australia;

(b) the availability of additional frequency channels for the transmission of:
  i. digital radio broadcasting services; and
  ii. restricted datacasting services;
  in Australia;

(c) the operation of this Act in so far as it deals with licensing and regulation in relation to the transmission of:
  i. digital radio broadcasting services; and
  ii. restricted datacasting services;

(d) the operation of the following provisions:
  i. section 109C;
  ii. Division 4A of Part 3.3;
  iii. Division 4B of Part 3.3;

(e) whether any of the provisions mentioned in paragraph (d) should be amended or repealed.

(2) The Minister must cause to be prepared a report of a review under subsection (1).

(3) The Minister must cause copies of a report to be tabled in each House of the Parliament within 15 sitting days of that House after the completion of the report.

(4) In this section: ***digital radio broadcasting service*** means:
(a) a digital commercial radio broadcasting service; or
(b) a digital community radio broadcasting service; or
(c) a digital national radio broadcasting service.

Review of digital radio required under s 215B of the Broadcasting Services Act 1992

215B Review—development and regulation of digital radio broadcasting services and restricted datacasting services

(1) Before 1 January 2014, the Minister must cause to be conducted a review of the following matters:

(a) the development of various terrestrial and satellite technologies capable of transmitting:
i. digital radio broadcasting services; and
ii. restricted datacasting services;
in Australia;

(b) the implementation of those technologies in foreign countries;

(c) the operation of this Act in so far as it deals with the licensing and regulation of:
i. digital radio broadcasting services; and
ii. restricted datacasting services.

(2) The Minister must cause to be prepared a report of a review under subsection (1).

(3) The Minister must cause copies of a report to be tabled in each House of the Parliament within 15 sitting days of that House after the completion of the report.

(4) In this section: ***digital radio broadcasting service*** means:

(a) a digital commercial radio broadcasting service; or
(b) a digital community radio broadcasting service; or
(c) a digital national radio broadcasting service.