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Re: Digital Radio Discussion Paper December 2013

Dear Jason,
Thank you for allowing me to make this submission in regards to digital radio.

I am the licensee holder of various other types of broadcast licensees
E.g. Domestic shortwave Broadcast licenses,
MF NAS Broadcast licenses (1611 KHz to 1701 kHz)
I also have a few low powered narrowcast licenses (lpon)

Please find below my answers to the various questions.
Kind Regards
Craig Allen

Questions:

- 1. Is the licensing and planning framework for digital radio operating effectively? Should any changes be made to the regulatory framework?**

As long all other broadcasters (Narrowcasters, NAS, HPON, LPON, local community, Regional and Remote broadcasters have access to applying for scientific licenses or permanent Digital licences after July 2015 there shouldn't be a problem with the current time frame.

- 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)?**

Yes. A six-year moratorium on new applications for technologies already proven overseas is a big head start for the metropolitan licence areas of Adelaide, Brisbane, Melbourne, Perth and Sydney.

There should have been no moratorium with digital radio. If the regional TV audience were told they would have to wait 6 years for digital TV there would have been a lot of unhappy people.

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?

As long as all Broadcasters are included in digital radio including Shortwave, NAS, LPON, HPON

4. Should any of the provisions relating to the access regime be amended or replaced?

Access should be open for all Broadcasters not just Commercial and Community.

5. Are the reasons for a moratorium on new licence area planned commercial digital radio licences still valid?

Metropolitan radio broadcasters have been testing DAB+ for the past 4 years and it works.

They are also been testing various Narrowcasting programs e.g. Country music,

Bird noises and in store radio etc. **Should the moratorium, which is due to expire on 30 June 2015, be extended or discontinued?**

It should be discontinued.

6. Should there be any changes to the initial restricted data casting framework?

Yes. The moratorium should be lifted so scientific licences could be granted to test equipment.

7. Given that the ACMA has not issued any restricted datacasting licences, is there any future for such services?

Yes. Remote control of bill boards, Interactive Games, News services etc.

8. How can restricted datacasting be made more attractive to new entrants to the market?

Restricted datacasting can follow the same guidelines as Narrowcast programming.

9. Should there be additional spectrum allocated for restricted datacasting services?

Datacasting services can use the part of the old TV channel 3 (85 MHz to 87 MHz)

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?

I have been following Digital radio broadcasting overseas for the past 7 years and I have listed below my opinion. (I am no expert)

IBOC (USA) Over 310 stations originally deployed IBOC only 172 currently use the system and more stations turning off IBOC system.

DRM (.5 MHz to 30 MHz) various tests have been conducted around the world and in Australia.

Tests within various frequencies proved positive. Radio India has installed over 27 high powered DRM MW broadcast transmitters that will cover the country.

<http://www.drm.org/wp-content/uploads/2013/12/AIR-India-Coverage-map-19-dec-2013.pdf>

DRM was tested in Canberra with the SBS on AM. Tests were extremely favorable with DRM.

DRM could work in Australia if we shift all the AM broadcasters that are above 1000 KHz to below 1000 KHz and use 1000 KHz to 1701 KHz for DRM broadcast only. (Less co-channel interference as both stations using Digital)

2 MHz to 5 MHz could be used for Domestic Digital broadcasting (NVIS) Shower service.

6 MHz to 18 MHz currently been used for international Shortwave Broadcasters

19 MHz, 21 MHz and 26 MHz could be used for very local DRM radio stations.

DRM+ 30 MHz to 108 MHz various tests have been conducted around the world. Due to current a six-year moratorium no tests have been conducted in Australia.

Various test results http://www.drm.org/?page_id=199

DAB+ Is currently used in France, United Kingdom, Switzerland, Malta, Ireland, Italy, Australia, the Netherlands and Germany. DAB+ is a good system for a lot of broadcasters in a concentrated area.

DAB + is waste of spectrum in regional areas with 1 x commercial, 1 or 2 Community and a few Narrowcasters.

DRM+ is the answer in Regional areas.

Copied from DRM.org (<http://publicaccess.se/docu/localDABDRMresponse.pdf>)

The proposal to transfer the local FM stations to local DAB structures seems hardly feasible. In order to migrate all existing local radio allocations in Europe (commercial, non-commercial and even public) in the future, there is not enough spectrum in the VHF band III to generate sufficient DAB allotments (this is already true in Germany). Besides, a DAB or DAB+ channel is always 1.5 MHz wide and in less populated areas it might contain as little as one program – pure spectrum waste, where as a DRM+ channel with a similar performance is only 100 kHz wide (half as wide as an FM channel.) As a DAB multiplex can carry up to 16 programs, where the full multiplex is not fully utilized it becomes very inefficient and means that using DRM+ instead would require about 10% of the DAB radiated power. It is widely accepted that, when replacing FM transmissions on a one-for-one basis, a DRM + transmission needs much less spectrum and energy than FM in order to provide the same high audio quality. The spectrum needed for each program stream is about one quarter of that needed for an FM sound broadcasting channel. These advantages have been confirmed by DRM+ test transmissions carried out in Edinburgh by the BBC and the DRM Consortium and also in a series of European countries (i.e. Italy, France, Norway, Germany).

Moreover, DRM+ can be configured in different ways in order to offer greater flexibility than FM or DAB broadcasting. DRM+ can, for example, offer the option of allowing much more locally orientated broadcasting within 4-way mini-multiplexes using the same amount of spectrum as a single FM channel.

The most attractive advantage of the DRM system for switchover purposes is that transmissions are maintained on the current model of a single transmitter per service a real. Thus, listeners can be assured that their favorite programming, whether national, regional, local or community based will continue to be available. Moreover, the switchover can be phased in over a period of time according to individual decisions on a per transmitter/area basis, if necessary making use of the simultaneous dual transmission possibilities offered by DRM.

As stated in the EBU recommendation 138: Terrestrial broadcast delivery is the only free-to-air and cost-effective method for truly mobile reception, particularly in cars...

FM radio is constrained by a lack of available spectrum in all developed markets.

DAB and DRM are openly specified, complementary, digital radio standards that meet the needs of Europe's radio broadcasters. In addition, they are proven to be energy efficient.

Multi-standard chips for digital radio decoding are available from many major manufacturers which enable radios to be built that decode FM, DAB and DRM.

In 2012 a simple software upgrade (done in Germany) for the NOXON-DAB USB stick (price 30 euros) has created the DAB+/DRM+ cheap receiver.

Current and upcoming generations of digital receiver chipsets are already designed as multi-standard chips or modules supporting both DAB and DRM. This gives a robust, readily available, tried and tested solution covering small and big radio operators with small and large coverage areas. This also becomes a realistic solution. This has to be better than setting up small cottage industries that are partly meeting a need, whilst creating so many other problems which, in turn, are undermining one of the key attributes of digital radio, flexibility.

11. What are your views about the impacts of Smartphone and other streamed audio services on the future of 'traditional' radio listening? *Smartphone's are the new transistor radio. In large cities you could have more people listening to your station on a Smartphone or internet than some regional stations have listening to their terrestrial signal.* **What data do you have to support these views** No

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? Car manufactures are currently installing smart consoles in cars. The Driver can surf the web, play radio AM, FM, and listen to music with apps. People care more about the internet in the car than what is under the bonnet.

What impact, if any, will the intent of several car manufacturers to install internet-connected entertainment systems have on the future of digital radio? There is a Chip(IC) that has just been released the will receive DRM, DRM+, DAB+, HD and T-DMB.(NXP Semiconductors) It is cheaper to listen to a Digital radio in your car than an internet stream due to the streaming costs.

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?

No Comment.

Given its ability to cover large geographic areas, do you think satellite radio may have a future in Australia?

It might work but shortwave also works

13. 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?

No.

14. 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?

Similar listeners to Australia

<http://www.statista.com/chart/1504/radio-listening-in-the-united-states/>

18. Are there alternative allocations of spectrum the Government could be considering for terrestrially Based digital radio?

- I. Analog TV Channel 0 (48.5 MHz) DRM+ regional (excluding Amateur Radio 6 Metre Band)
- II. Analog TV Channel 1 (59.5 MHz) DRM+ regional
- III. Analog TV Channel 2 (66.5 MHz) DRM+ regional and metropolitan (less floor noise)

Each DRM+ channel is 96 KHz wide. 20 MHz = 200 DRM+ channels with an 8 KHz Guard Band between each channel.

These channels can be planned similar to FM channels.

Move ABC TV to channel 5A (140 MHz) not to channel 12 (226 MHz) as it is currently.

(140 MHz is the second harmonic of old Analog channel 2 so existing TV antennas will be compatible with 5A).

Allocate TV channel 12 (226 MHz) to DAB+ (DAB+ 174 MHz to 240 MHz)

After TV channel restacking DAB+ channel 9AD can be allocated as channel 10 moves up 1 MHz

19. What has been your experience of the establishment and operation of a digital radio multiplex?

I have had no experience in establishing a digital radio multiplex as I applied for a scientific digital radio licence and was told no more scientific licences would be issued until after 1 of July 2015.

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?

A. DRM or DRM+ is the answer for regional areas.

The Radio signal of a Radio broadcaster using DRM+ on 55MHz will travel further for the same power compared to a DAB+ Transmitter on 200 MHz (This is the main reason the ABC used these frequencies for their analog TV stations.)

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) is desirable?

DRM and DRM+ is the cheapest way for broadcasters in small metropolitan markets, Regional and remote areas of Australia. DRM 30 should be used for blanket coverage of Regional and remote Australia similar to ABC Australia outback shortwave service or large coverage AM MW services.

<http://www.abc.net.au/reception/radio/shortwave.htm>

<http://www2b.abc.net.au/reception/frequencyfinder/asp/details.asp?transmissionid=4531&presdir>

Existing broadcasters can apply for a DRM30 or DRM+ license with similar characteristics of their existing current licence.

E.g. Existing service is a 1Kw FM broadcaster on 99.1. The new license issued by the ACMA is a 1Kw watt licence on the frequency of 66.5MHz or if they are an AM only station an equivalent licence could be issued.

Broadcasters e.g. LPON's, HPON's or low powered translators service with an ERP of 10 watts or less could be upgraded to 100 watts DRM. Very low powered digital is useless. (License fees could reflect this change)

Existing broadcasters (anyone with a license that is in band or off band qualifies for a Digital Radio licence)

With Radio narrowcasting it's the format that is restricted not the means of delivery.

21. In order to maintain audio quality, should there be a mandatory minimum amount of bandwidth used per station? I stream via the net and have also conducted various tests using DAB+ and DRM+

AAC 64Kb's (HE-AAC v2) should be the standard for digital radio and streaming services.

Except for DRM station below 30 MHz where bandwidths are very narrow (+-5/10KHz)