Explanatory Paper
Draft Variation to Licence Area Plan – Brisbane Radio – No.1 of 2012.

JANUARY 2012
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Submissions

The Australian Communications and Media Authority (the ACMA) is seeking public comment on a proposed Draft Variation to Licence Area Plan – Brisbane Radio – No.1 of 2012.

Submissions can be made as follows:

Email: rps@acma.gov.au
Mail: Draft Variation to LAP for Brisbane Radio – No.1 of 2012
RPS/TPEB/DTD
ACMA
PO Box 78
BELCONNEN ACT 2616
Fax: (02) 6219 5347


Contact details for submissions:

Email: rps@acma.gov.au
Telephone: Nicole Brown on (02) 6256 2821
Fax: (02) 6219 5347

The closing date for submissions is 5.00 pm, Friday 17 February 2012. All submissions received will be made available on the ACMA web site at www.acma.gov.au.

Under subsection 27(2) of the Broadcasting Services Act 1992 (the BSA), the ACMA is required to make all submissions available for public inspection. Any submission marked ‘In confidence’, ‘Confidential’ or similar, will not be considered by the ACMA in finalising the LAP variation.
Explanatory Note

This explanatory paper accompanies the proposed Draft Variation to the Licence Area Plan for Brisbane Radio – No.1 of 2012.

The broadcast planning functions of the ACMA are set out in Part 3 of the Broadcasting Services Act 1992 (BSA). The BSA requires the ACMA to promote the objects of the Act¹ including the economic and efficient use of radiofrequency spectrum, and to have regard to the planning criteria set out in section 23.

LAPs are made under subsection 26(1) of the BSA. LAPs determine the number and characteristics, including technical specifications, of broadcasting services in particular areas of Australia with the use of the broadcasting services bands.

The ACMA may vary LAPs under subsection 26(2) of the BSA.

The object of most obvious relevance to the ACMA’s powers in relation to section 26 of the BSA is that at Paragraph 3(1)(a) that being:

| to promote the availability to audiences throughout Australia of a diverse range of radio and television services offering entertainment, education and information. |

Section 27 of the BSA provides that the ACMA must make provision for wide public consultation when considering whether to make or vary a LAP.

The ACMA refers to the General Approach to Analog Planning when it considers the planning of broadcasting services. This document sets out the legislative framework and planning criteria as well as the general approach to the planning of broadcasting services. It also contains a record of advice and assumptions about matters relevant to the ACMA’s functions and powers under Part 3 (see subsection 27(2) of the BSA).

This document can be obtained from the ACMA’s web site at: http://www.acma.gov.au/WEB/STANDARD/pc=PC_90248

The ACMA generally considers variations in response to submissions made to it or on becoming aware of technical issues that need addressing.

The ACMA has received one submission in relation to radio broadcasting services in the LAP for Brisbane radio (Brisbane LAP). This submission requested the ACMA to consider:

> varying the Brisbane LAP to change the technical specifications of the existing commercial radio broadcasting service 4KQ to allow day/night switching and relocate the transmitter site as the current transmitter site is unsuitable for coverage of greater Brisbane.

After considering this request and other issues known to it, and in the context of the information contained in the ACMA’s ‘General Approach to Analog Planning’ and the planning criteria listed in section 23 of the BSA, the ACMA has reached the following preliminary views, namely that it should:

- vary the technical specifications of the 4KQ radio service at Brisbane to reflect a change in the transmitter site, the adoption of day/night switching² which will

¹ Section 3 of the BSA.
² The Day/Night transmitter power switching and pattern change policy is designed to improve the reception and coverage of existing AM-MF broadcasting services by permitting an increase in the maximum transmission power during daylight hours and at an optimum power and antenna directivity which will not have an appreciable impact on the reception of operating AM-MF services both in Australia and overseas at night. As the changes will not impact, essentially, on the productivity of the MF spectrum, the policy is regarded as a spectrum efficient technique to improve coverage and reception of MF services.
increase the maximum power during daytime hours to 10 kW and a change in the directionality of its radiation pattern (Preliminary View 1);

- update the description of the existing commercial and community radio licence areas in the Brisbane LAP so they are defined in terms used in the 2006 census and are consistent with the ACMA's most recent determination of population of a licence area under section 30 of the BSA (Preliminary View 2); and

- make minor amendments to correct previous drafting errors and update technical specifications in the Brisbane LAP (Preliminary View 3)

A full discussion of these matters is set out below.
Preliminary Views – Brisbane LAP

Preliminary View 1 – Commercial Radio

The ACMA proposes to vary the technical specifications of the existing commercial radio broadcasting service 4KQ at Brisbane. It is proposed that this service operates on:

- 693 kHz from Wynnum Rd, WYNNUM WEST with a maximum cymomotive force (CMF) of 1395 volts (V) (equivalent to 10 kW) during daytime hours and a maximum CMF of 990 volts (equivalent to 5 kW) during night-time hours, with a directional antenna (DA) pattern.

**Background**

The commercial radio broadcasting service 4KQ broadcasts on medium frequency (MF) 693 kHz and was originally planned to operate from a transmitter site at St Helena Island with a maximum power of 5 kW and a directional antenna pattern. It was planned to provide coverage to the Brisbane RA1 licence area.

On 9 March 2005, the licensee of the 4KQ service, ARN Communications Pty Ltd (ARN), submitted an application to change the site of their transmission facility, adopt day/night transmitter power switching by increasing their daytime operating power to 10 kW while maintaining their existing night-time operating power of 5 kW and changing their radiation pattern.

ARN made this request because they claimed that the St Helena transmission site was unsuitable as there was no mains power available, resulting in the transmitter being powered by diesel and consequently making the service expensive to operate. ARN also maintained that, due to its location, the existing site was not suitable to provide full coverage of the city of Brisbane and inland parts of the Brisbane RA1 licence area.

ARN identified an alternative site at Wynnum West which they contend would both reduce service operating costs and improve coverage and reception. They requested that the service operate from this site with day/night transmitter power switching with a maximum operating power of 10 kW during the day and 5 kW at night. ARN also requested that the antenna radiation pattern be changed to direct the signals to areas where the service was previously deficient.

**Discussion**

In general, AM-MF radio broadcasting reception is prone to degradation or interference at night from other MF services and such degradation shrinks the night-time coverage of the service. This shrinkage of coverage of the affected service is primarily due to interfering signals from other services as the result of reflections of their signals off the earth’s ionosphere. These ionospheric reflections do not occur during the day.

Day/night transmitter power switching and antenna pattern changes allow existing AM-MF broadcasting services to increase their maximum transmission power during the day (subject to interference considerations), especially when they are experiencing coverage and reception difficulties in their licence areas. The night-time power and any associated antenna pattern changes are generally maintained at the same level as before, to ensure that there is no appreciable impact on the reception of other MF services within Australia and overseas. As the changes will not impact on the productivity of the MF spectrum, the approach is regarded as a spectrum efficient technique to improve the coverage and reception of MF services.
The technical assessment of the proposal from ARN found that 4KQ could operate at 10kW/5kW day/night transmitter power with the amended radiation pattern. There was some potential, though unlikely, for either degradation or interference to the AM commercial radio service 4LM on 693 kHz in the Cloncurry RA1 licence area.

The assessment also found that adopting the proposed technical specifications could potentially increase the number of people able to receive urban grade coverage from 4KQ within the Brisbane RA1 licence area during the day by 114,556 (from 83% to 90%). It could also potentially reduce the number of people receiving fortuitous suburban grade coverage in the adjacent licence areas of Nambour RA1 by 35,873 (from 23% to 13%) and the Gold Coast by 44,139 (from 50% to 40%).

On 14 July 2007, 4KQ began an 18 month day/night switching test broadcast from the transmitter site at Wynnum West, with a maximum daytime ERP of 10 kW and a maximum night-time ERP of 5 kW. In permitting the test broadcast the ACMA required that 4KQ manage any interference issues and upon completion of the test, lodge a report detailing the conduct and outcomes of the test.

4KQ’s test nominally concluded on 12 January 2009. 4KQ’s test report confirms that there was no interference or degradation to the reception of 4LM Cloncurry or any other broadcasting services. The 4LM Cloncurry licensee verified this assessment.

The test report also confirmed that improved urban grade coverage had been achieved in the Brisbane RA1 licence area and that the fortuitous coverage in the Gold Coast RA1 and Nambour RA1 licence areas was reduced.

**Conclusion**

The ACMA is of the preliminary view that formalising 4KQ’s change of site and day/night transmitter power switching arrangements and pattern change are a spectrum efficient way of improving its reception and coverage. The ACMA therefore proposes that the Brisbane LAP be varied to change the technical specifications of the 4KQ service at Brisbane as described above.

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3 All population figures from the 2006 Census data
Preliminary View 2 – Licence Areas

The ACMA proposes that the existing commercial and community radio broadcasting licence areas in the Brisbane LAP be redefined using 2006 census data but otherwise remain unchanged.

The licence areas for commercial and community radio broadcasting services in the Brisbane LAP – Brisbane RA1, Logan RA1, Redcliffe RA1, Wynnum RA1, Caboolture RA1 and Beaudesert RA1 – are currently described using boundaries from the 2001 census.

The Australian Bureau of Statistics (ABS) has made available to the ACMA the most recently published census (2006), as prepared by the Australian Statistician. Therefore, the ACMA proposes that these licence areas be redefined using 2006 census data, but otherwise remain unchanged.

These licence areas, updated to 2006 census data, are detailed in the document “Licence Area Maps” that accompanies this explanatory paper.

Preliminary View 3 – Minor Amendments

The ACMA proposes to update the schedules and attachments in the Brisbane LAP.

The ACMA proposes to make amendments to the schedules and to each of the attachments that contain the characteristics, including technical specifications of the radio broadcasting services in the Brisbane area.

The ACMA does not intend these minor amendments to alter any existing rights or obligations. It proposes to replace schedules and attachments in their entirety to facilitate these minor amendments to avoid any confusion that may arise from amending the schedules and attachments individually.

The proposed changes to schedules include:
> renaming the Schedules as Schedules One, Two, Three, Four, Five and Six and so that the sub-heading reads “Licence Area Plan: Brisbane Radio”;
> removing the ‘Status’ column in each of the tables in the existing schedules;
> amending the column titled ‘Frequency’ to ‘Channel/Frequency’.

The proposed changes to the attachments include:
> updating the headings on all attachments so that they read “LICENCE AREA PLAN: Brisbane Radio”;
> updating the site tolerance field on all attachments as that they refer to the Broadcasting Services (Technical Planning) Guidelines 2007;
> updating the nominal locations at attachments 1.9, 1.12, 1.13, 1.18, 1.19, 1.20, 1.23, 1.24, 1.25, 1.26, 4.2, and 5.2;
> updating the Australian Map Grid reference at attachments 1.12, 1.13, 1.18, 1.19, 1.20, 1.23, 1.24, 1.25, 5.2 and 6.2;
> removing the Attachments 1.17 and 1.22 which describe services that have been replaced by Attachment 1.18 and 1.23, respectively; and
> removing the special conditions in attachment 1.18 and amending the special condition at attachment 1.23 and 1.26.

This information has been updated for ease of reference only and does not signify a change to the broadcast site for the transmitters or a change to the planned performance or operation of these services.