Draft Request to vary a Licence Area Plan - Radio

Guidance notes

Australian Government

acma Australian Communications and Media Authority

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Introduction

If you are considering making a request to vary a licence area plan (LAP) for analog radio services you should refer to the *ACMA policy on assessing and prioritising requests to vary radio licence area plans* (www.acma.gov.au). It sets out the general approach of the Australian Communications and Media Authority (the ACMA) to requests to vary radio LAPs, including matters that influence the priority that requests are given.

When should an ACMA B83 request form be used?

Form ACMA B83 should be used when requesting a variation to an analog radio LAP, including proposals to add new services to a radio LAP.

A LAP is a legislative instrument that determines the number, category and characteristics of broadcasting services that are available in particular areas of Australia that use the broadcasting services bands (AM and FM radio, and VHF and UHF television channels). LAPs set out the technical specifications for existing and proposed services. The schedules to a LAP include:

- the categories of service included in each LAP (ie national, community, commercial, or open narrowcasting radio or television services);
- the service licence number, which uniquely identifies each commercial and community service;
- the transmitter specification number, which uniquely identifies each transmitter required for the services;
- an attachment with the technical specifications for each transmitter;
- the general area served by each transmitter; and
- frequency.

There are both radio LAPs and television LAPs. Form ACMA B83 should only be used for requests to vary *radio* LAPs.

If you have any difficulty completing the form, contact the Radio Planning Section during business hours on 1300 850 115.

Who should provide the supporting technical submission at Schedule 2 of the form?

The supporting technical submission referred to in Schedule 2 of the form, should be completed by those from the National, Commercial, and High Power Open Narrowcasting (HPON) radio broadcasting sectors requesting variations to a LAP that involve **a new service, new transmitter, or variation to a transmitter's technical specifications**. Those from the Community radio broadcasting sector requesting these types of variations are encouraged to address the issues in Schedule 2 to the extent that their resources allow.

What will happen when the completed form is lodged with the ACMA?

You will receive confirmation that your request has been received by the ACMA and you may be requested to provide more information at that time. The ACMA will advise you whether or not your request appears to be feasible.

Depending on the variation requests that the ACMA receives and the resources available, it is necessary to prioritise the order in which requests are processed. You will be advised as to the likely time it will take for the ACMA to consider your variation request.

What is the legal framework for varying LAPs?

The ACMA varies LAPs under subsection 26(2) of the *Broadcasting Services Act 1992* (the Act). Under section 27 of the Act, the ACMA must provide for wide public consultation when varying (and preparing) LAPs.

In considering whether to vary a radio LAP, the ACMA must promote the objects of the Act and the economic and efficient use of the radiofrequency spectrum. The ACMA also has regard to the following planning criteria listed under section 23 of the Act:

(a) demographics; and
(b) social and economic characteristics within the licence area, within neighbouring licence areas and within Australia generally; and
(c) the number of existing broadcasting services and the demand for new broadcasting services within the licence area, within neighbouring licence areas and within Australia generally; and
(d) developments in technology; and
(e) technical restraints relating to the delivery or reception of broadcasting services; and
(f) the demand for radiofrequency spectrum for services other than broadcasting services; and
(g) such other matters as the ACMA considers relevant.

PROVIDING INFORMATION SOUGHT IN THE FORM

SECTION 1: REQUESTER'S DETAILS

Requester type – check either the individual checkbox, the company checkbox or the incorporated association checkbox to indicate whether the requester is an individual, a company or an incorporated association.

Requester status – check either the existing broadcaster checkbox or the prospective broadcaster checkbox to indicate the requester's status as a broadcaster.

Requester name (if a licensee, provide the licensee name) - provide the full name of the individual or company requesting to vary the licence area plan (LAP). If the requester is an individual provide full name in the following order: First name, Middle name(s), Surname. If the requester is a company appearing on the public database of the Australian Securities and Investments Commission (ASIC), please provide the full name as shown on the ASIC database.

ACN or ABN - provide the Australian Company Number or the Australian Business Number of the company requesting the variation, if applicable.

Trading name – provide the trading name of the requester's business, if applicable.

SECTION 2: LICENCE DETAILS

Section 2 requests details regarding the radio LAP that you wish to vary.

SECTION 3: RADIO LAP VARIATION DETAILS

All LAPs prepared by the ACMA and all LAPs that were prepared by the Australian Broadcasting Authority (ABA) can be viewed on the Federal Register of Legislative Instruments on the Commonwealth of Australia Law (ComLaw) website (www.frli.gov.au). Final LAPs prepared by the ACMA can also be viewed on the ACMA website (www.acma.gov.au).

(a) What type of radio LAP variation are you requesting? – select the type of variation that you are requesting, choosing only one of the first three options. If the request includes the variation of a licence area boundary then the fourth option should also be selected.

In relation to requests for a **new commercial radio broadcasting service**, the requester should be aware that analog radio spectrum is heavily congested, particularly in metropolitan and densely populated regional areas. Spectrum scarcity in these areas limits the ACMA's ability to plan new commercial radio services. For information about issues in relation to requests for new commercial radio broadcasting services please refer to the *ACMA policy on assessing and prioritising requests to vary radio licence area plans (LAPs)* on the ACMA website (www.acma.gov.au).

(b) Why are you requesting a radio LAP variation? Include evidence of the issues to be addressed by the proposed variation – Detail the reasons why you are requesting the LAP variation. Outline and discuss the results of any research, testing, surveys or analysis you have undertaken that provide evidence of the issues that the requested variation is designed to address. Please attach any relevant documents to your request form.

If you are requesting a variation in relation to an existing service, include a description of the current geographic area served and audience reached by the radio service. Discuss the issues that you consider are preventing the optimal or desired delivery of the service, and the impact that these issues are having on the audience (or potential audience) of the service, and the business operations of the service.

Alternatively, if you are requesting the addition of a new service to the radio LAP, discuss why such a service should be made available. Outline the extent to which the service would benefit the population of the LAP and the likely audience demand for the service. If you are seeking a new community radio service or to vary the licence area of a community radio service please refer to the *General Approach to Analog Planning*, and address the matters listed in Chapter 4(2), Community Broadcasting, published on the ACMA's website at www.acma.gov.au.

NOTE: There is a separate process for the allocation of licences for new services. If the ACMA decides to add another service to a LAP, then there will be a process for the allocation of that licence at some future time.

(c) How will the LAP variation that you are requesting address the issues discussed in item (b)? – describe the variation that you are requesting and discuss how this will address each of the issues identified in Item (b).

(d) Is it possible that the requested variation will affect other broadcasters or audiences within and/or outside the licence area? – identify the possible effects of the variation you have requested on other broadcasters (both radio and television) and audiences, both within and outside the licence area. Some impacts for you to consider include overspill of the service's signal

into other licence areas or interference to or from the broadcast of other services. Outline any consultation you have undertaken with broadcasters likely to be affected by the requested variation.

Sections 4, 5, 6 & 7: Instructions

The information sought in the following sections 4 to 7 of the request form relates to technical details of the variation request. You only need to complete the sections relevant to the type of variation that you are requesting.

SECTION 4: LICENCE AREA/DEFINED COVERAGE AREA

This section is not applicable for requests related to national services.

a) Existing licence area – commercial and community services

If your request relates to a new service or new transmitter in an existing licence area, or a variation to the boundary of an existing licence area, then you should provide the name of that existing licence area. For existing commercial and community services, the licence area name is identified in the applicable Licence Area Plan.

b) New licence area or varied licence area (community or commercial services)

The coverage of requesed new licence areas or variations to existing licence areas should be described in terms of a list of Australian Bureau of Statistics (ABS) urban centres and rural localities from the most recent publicly available census data. This list may be included as an attachment if there is insufficient space on the form. The relevant information may be found on the ABS website. The ACMA, if it acts on the request, will develop a licence area definition in terms of ABS collection districts based upon this information.

c) Proposed new defined coverage area (for new HPON services)

HPON services do not have a licence area but rather a defined coverage area specified in a special condition to the technical specifications and transmitter licence (refer to Broadcasting Planning Instructions: No. 3 "Planning of open narrowcasting services" for a detailed discussion, www.acma.gov.au).

The defined coverage area is generally described in terms of an area delimited by a circle of specified radius about a specified point, most usually the transmitter site location. In this case the left hand box at item (c) should be completed by stating the desired coverage radius in kilometres.

Alternatively, the defined coverage area may be described in terms of an existing licence area definition. In this case the right hand box at item (c) should be completed by stating the licence area name as identified in the applicable Licence Area Plan.

The ACMA generally plans services with protected field strengths of 54 dBuV/m. However, for small coverage areas, greatest spectrum efficiency may be achieved with higher protected field strengths. Again, in highly spectrum congested areas, the only available frequencies may be interference limited. In both these instances it may be necessary to specify higher protected field strengths of 66 dBuV/m or 74 dBuV/m. The proposed protected field strength should be identified by checking an appropriate checkbox for 54 dBuV/m, 66 dBuV/m or 74 dBuV/m.

Note that the ACMA does not generally vary the defined coverage area of a HPON service.

Note also that proposed variations to the technical specifications of an existing HPON service are assessed by the ACMA in terms of the *Broadcasting Services (Technical Planning) Guidelines 2007* (TPGs) change of site procedure using the ACMA Form B12 and if compliant do not require a LAP variation process.

SECTION 5: TRANSMITTER SITE

This section is to be completed for a new transmitter site and variations to an existing transmitter site that will require a LAP variation. Separate procedures apply in cases where a variation to a transmitter site will still comply with the technical specifications in the relevant LAP, the TPGs, and any applicable licence conditions. ACMA Form B12 is used for these requests. See Part 2 of the TPGs.

a) Location of transmitter site

The location of the transmitter site should be described in the usual way by name, street, locality/ suburb/town, state and postcode. An example description would be Community Broadcast Tower, Shire Council Site, 83 Panorama Drive, MT BUNYIP. The ACMA's Accredited Persons Online User Guide provides detailed guidance on the ACMA's transmitter site naming conventions at www.acma.gov.au.

b) Site manager or site contact

Major transmitter sites will generally have an individual site manager appointed by the site owner and in this case the site manager check box should be checked and that person's contact details should be provided. If the requester will be the sole occupier of the transmitter site, then a suitable individual should be nominated as the contact person for the purposes of this request, the contact person check box checked and that person’s contact details provided.

c) Site height of transmitter site

The site height of the transmitter site should be stated in metres with reference to the Australian Height Datum (AHD). The AHD is fully described and explained in the Geocentric Datum of Australia Technical Manual www.icsm.gov.au/gda/gdatm/index.html. Note that this value is difficult to accurately measure and a licensed surveyor is generally required to achieve the necessary precision of 2 metres. In particular be aware that domestic global positioning systems are not generally sufficiently accurate for this purpose. Where the antenna and its mast are located on a structure such as a building, the site height required is that of the ground upon which the tower is located, not the height of the structure itself. This site height is the reference point for the data in respect of the antenna height which is referenced in terms of above ground level (AGL). That ground level equates to the site height specified in this section.

d) RADCOM site number

Where broadcasting or radiocommunications services have already been licensed to the transmitter site subject to this request, the RADCOM site number may be obtained by reference to the ACMA's Register of Radiocommunications Licences online http://web.acma.gov.au/pls/radcom/register_search.main_page.

i) Map grid coordinates

This data is only required if a RADCOM site number has not been quoted *and* if geographic coordinates have not been provided. The coordinate system used for the map grid coordinates should be identified by checking the appropriate check box. Note that the ACMA's present standard system is AMG66, however the ACMA will convert the data provided in any standard coordinate system. The numeral boxes should be completed for Zone, Easting and Northing, with the latter two items being rounded to the nearest metre. Coordinate systems and map grid coordinates are fully described and explained in the Geocentric Datum of Australia Technical Manual www.icsm.gov.au/gda/gdatm/index.html.

ii) Geographic coordinates

This data is only required if a RADCOM site number has not been quoted *and* if map grid coordinates have not been provided. The coordinate system used for the geographic coordinates should be identified by checking the appropriate check box. Note that the ACMA's present standard system is AGD66, however the ACMA will convert the data provided in any standard coordinate system. The boxes should be completed for Latitude South and Longitude East. The ACMA prefers data in terms of degrees minutes and seconds with the seconds rounded to two decimal points. However the ACMA will accept and convert data in decimal degrees or decimal minutes. Coordinate systems and geographic coordinates are fully described and explained in the Geocentric Datum of Australia Technical Manual www.icsm.gov.au/gda/gdatm/index.html.

iii) Provenance of coordinates in items (i) or (ii)

The means by which either the map grid coordinates or the geographic coordinates have been derived should be identified by checking the appropriate check box, whether by licensed surveyor, map, GPS, Google Earth or other.

e) Nearby transmitters within about 100 metres

Other transmitters in the immediate vicinity of the proposed transmitter site should be identified, with progressively less priority depending upon whether they are: at the same tower, the same site or at a nearby site. These transmitters may be identified by reference to the Register of Radiocommunications Licences http://web.acma.gov.au/pls/radcom/register_search.main_page. For each nearby transmitter, the identifier or callsign should be provided together with the frequency and / or channel of the service.

SECTION 6: TRANSMISSION CHARACTERISTICS

a) Transmission mode

The proposed transmission mode should be identified as either AM radio or FM radio by checking the appropriate check box.

b) Sound mode

The proposed sound mode should be identified as either monophonic or stereophonic by checking the appropriate check box.

c) Frequency

The proposed frequency should be identified by completing the box with the channel frequency in kHz (AM radio) or MHz (FM radio) and crossing out the unit type which is not applicable.

d) Maximum effective radiated power (FM radio) or transmitter power (AM radio)

The maximum effective radiated power (FM radio) or maximum transmitter power (AM radio) should be provided by completing the box with the appropriate value in Watts.

e) Height of antenna (FM radio) or height of mast (AM radio)

The first box should be completed with the height of the antenna in metres above ground level (AGL) in the case of FM radio or the height of the top of the mast in metres AGL in the case of AM radio. The required height of an FM radio antenna is that of the electrical phase centre of the antenna. The second box is for completion only in the case of AM radio and is for the height of the mast in terms of calculated electrical degrees at the carrier frequency of the proposed service. This calculation should include an appropriate value for the velocity factor of the proposed mast. AM radio requesters proposing a directional antenna should specify the height of the tallest mast.

f) Antenna polarisation

The proposed antenna polarisation should be identified as either vertical or mixed by checking the appropriate check box. Note that the ACMA will generally plan AM radio services with vertical polarisation and FM radio services with mixed polarisation.

g) Antenna radiation pattern

The proposed type of antenna radiation pattern should be identified as either omnidirectional or directional by checking the appropriate check box. If a nominally omnidirectional antenna deviates significantly from circularity then it should be identified as directional. In the case of directional antennas further information is required as a detailed in the following.

h) FM radio directional antenna characteristics

In the case of an FM radio directional antenna pattern, the horizontal radiation pattern envelope should be specified in tabular form. This comprises successive arc segments, each stating (1) start bearing in degrees True; (2) finish bearing in degrees True; and (3) maximum ERP within that arc segment. The arc segments should start at 0 degrees True, progress initially to the east and cover the entire 360 degrees of arc back to 0 degrees True. The number and width of arc segments should be selected to reflect a reasonable range of ERPs sufficient for adequate coverage area and interference level calculations. If applicable, beam tilt should be specified in terms of degrees below the horizontal and the null fill in terms of percentage with respect to the maximum level of radiation.

i) AM radio directional antenna characteristics

In the case of an AM radio directional antenna pattern, the horizontal and vertical radiation patterns are specified indirectly by identifying the physical and electrical parameters of the array in tabular form. For each mast in turn, commencing with mast number 1 as reference, the following items should be listed: mast number, physical mast height in metres, mast height in electrical degrees, orientation in degrees True, mast spacing in electrical degrees, relative loop current phase in electrical degrees, relative loop current ratio. Where electrical loading is proposed to be utilised the type of loading to be deployed should be indicated by striking out the inapplicable types listed including capacitive top loading, inductive top loading, capacitive mid loading and inductive mid loading. The values of cymomotive force in the minima directions should be specified and the direction(s) of those minima also stated. Manufacturer's or designer's data should be attached if available. The ACMA's standard system of specifying the antenna system is comprehensively described in the Technical Planning Parameters www.acma.gov.au/WEB/STANDARD/pc=PC_91711.

SECTION 7: PROGRAMMING SOURCE

Programming source is the means by which you propose to deliver programming to the transmitter, whether by landline, satellite, off-air, internet, studio transmitter link, FM radio subsidiary carrier authorisation or other. If an existing transmitter is to be received off-air, then it should be noted that the ACMA cannot guarantee protection from interference to such off-air inputs. The source of off-air programming should be fully detailed by listing the broadcast identifier and / or callsign, its input frequency, the transmitter site location and the LAP/RADCOM technical specification number.

SECTION 8: REQUESTER'S DECLARATION

The requester must make a declaration in relation to the information that they have provided in the request form and in any accompanying documents. The form will not be processed unless it is duly signed.

Giving false or misleading information is a serious offence.

Schedule 1: Map or sketch of transmitter site

Schedule 1 must be completed where a new transmitter site is being proposed or where the RADCOM site number for an existing site has not been provided.

Schedule 2: Supporting technical submission

The supporting technical submission should demonstrate that the necessary calculations, measurements and investigations have been undertaken to support the information provided in the main body of the form, including:

- The issues that the requested variation is designed to address and the possible impact that the variation may have on other broadcasters and audiences (section 3); and

- The key technical information provided in sections 4, 5, 6 and 7.

Requesters should use the following headings ((a) through (i)) to structure their submission. All category headings should be addressed for requests involving a new service or a new transmitter. For requests involving a variation to an existing transmitter's technical specifications, only those category headings relevant to the proposed variation need to be addressed.

a) Transmitter Site

In addition to the numerical data relating to the transmitter site provided in Section 5, you should qualitatively describe other matters relevant to the selection of the transmitter site. A general description of the surrounding geography as it pertains to radiofrequency propagation should be included. Discussion as to existing transmitter sites in the locale is useful, together with any access issues. Provision of extracts of topographic maps and satellite imagery illustrating the location would be helpful. If relevant and where possible, areas of high field strength and EMR/EME issues should be discussed.

b) Frequency

General discussion should be provided as to the 800 kHz or 1.6 MHz channel group utilised in the area and whether the nominated frequency is consistent with that group. Channel separations to other services in the area should be described. Usable field strength on the nominated frequency should also be stated, together with the value of the interference-protected field strength desired for the service. Discussion should be provided of the overall spectrum efficiency of the proposal, as well as the extent of spectrum congestion in the area and whether alternative frequencies may be available. If the allocation of the frequency conflicts with an existing allocation then that conflict should be fully described and an alternative frequency nominated for the conflicting service.

c) Transmission characteristics

The reasoning behind the nomination of a particular ERP should be described in terms of desired coverage area. Any factors driving the specification of a particular antenna height should be detailed including site factors which may necessitate any subsequent variation in antenna height. The selection of a particular transmission polarisation (vertical / mixed) and radiation pattern type (omnidirectional / directional) should also be justified in terms of coverage objectives, implementation costs and transmitter site constraints.

d) Coverage area

A map of the estimated coverage area should be provided using an appropriate propagation model and detailing key field strength contours appropriate for various reception environments. The map should identify the licence area and commentary provided as to whether the coverage area is appropriate for the licence area. Where the proposed coverage extends beyond the

licence area ("overspill"), then an explanation should be provided as to why this could not be avoided.

e) Co-channel and adjacent channels Interference from other AM & FM radio services

Estimates of interference levels from all existing neighbouring services in the frequency range +/- 800 kHz from the nominated frequency should be provided. A statement is required that the cumulative interference level is consistent with the required interference-protected field strength level.

f) Co-channel and adjacent channels Interference to other AM & FM radio services

For each potentially affected service, estimates of interference levels from all existing neighbouring services in the frequency range +/- 800 kHz from the nominated frequency should be provided. A statement is required that the cumulative interference level is consistent with the required interference-protected field strength level, for each potentially affected service.

g) Other interference to & from AM & FM radio and television services

A full list of all mechanisms considered should be provided. Particular attention should be paid to intermediate frequency beats, Band II TV interference, intermodulation with FM/TV services, second harmonic interference to and from TV services, off-air programme inputs for TV/FM services, interference to TV masthead amplifiers and local oscillator radiation. Where potential problems are identified, detailed calculations should be provided. Where appropriate, proposed amelioration strategies and interference management procedures should be described.

h) Electromagnetic compatibility with radiocommunications services

A full list of all mechanisms considered should be provided. Provenance of data should also be stated, together with the cull radius utilised and the results of all relevant calculations included. The analysis should address at least receiver overload, harmonics and intermodulation products. Particular attention should be paid to low-power open narrowcasting services, aeronautical services and any relevant Radio Quiet Zones. Where potential for interference is identified, amelioration strategies and interference management procedures should be described.

i) Any other relevant matter

If you believe there is any other matter pertinent to the supporting technical submission, then those matters should be described and illustrated as appropriate.