RADIO SPECTRUM MANAGEMENT

Spectrum Licence Policy Rules for Crown Management Rights (PIB 59)

Issue 4.5 | April 2024

MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

New Zealand Government

Table of Contents

1. Introduction

1.1. Contents

This document specifies the Spectrum Licence Policy Rules (rules) for creating spectrum licences in Crown managed broadcasting spectrum under the management rights regime. These rules are made under the authority of the Crown as owner of the management rights. The licences must meet the requirements of the Radiocommunications Act 1989 ("the Act") and associated regulations (the Regulations).

Parties seeking new or modified licences, and Approved Radio Engineers acting on behalf of these parties, are required to comply with these rules when proposing spectrum licences relating to Crown management rights.

These rules must also be read in conjunction with Spectrum Licence Certification Rules for Crown Management Rights (PIB 39) – Engineering Rules and Information for Approved Radio Engineers.

1.2. Disclaimer

The Ministry of Business, Innovation and Employment (the Ministry) makes no warranty, express or implied, nor assumes any liability for any loss suffered, whether arising directly or indirectly, due to the sole reliance on the accuracy or contents of this Public Information Brochure (PIB 59).

1.3. Changes

Radio Spectrum Management (RSM) may change, delete or add to, or otherwise amend information contained in this document from time to time to reflect evolving policies. Changes to this document will be notified though the 'Radio Spectrum Management Business Update' e-newsletter that is emailed to those that subscribe. These changes are also notified in the news section on the RSM website, www.rsm.govt.nz.

1.4. Clarification and Corrections

RSM will provide clarification of the information contained in this document when requested and would appreciate receiving suggestions for its improvement or advice relating to inaccuracies or ambiguity. Such matters may be emailed to radio.spectrum@mbie.govt.nz. Correspondence received will be acknowledged, investigated and appropriate action taken.

ISSN 1175-6748 (PDF)

1.5. Abbreviations and terminology

Abbreviations and terminology used throughout this document has the following meanings:

Abbreviation	Meaning
the Act	the Radiocommunications Act (1989) and any amendments
ARE	Approved Radio Engineer
AM	Amplitude Modulation - for the purposes of this PIB, referring to the broadcast spectrum between 512 & 1612 kHz
CEO	Chief Executive of the Ministry of Business, Innovation and Employment
CSAM	Crown Spectrum Asset Manager - the person appointed to this role by the Ministry
FM	Frequency Modulation – for the purposes of this PIB, referring to the broadcast spectrum between 88 & 108 MHz
FWA	Fixed Wireless Access
GST	Goods and Services Tax
GUSL	General User Spectrum Licence
ITU-R	International Telecommunications Union Radiocommunications Sector
LA	Licensing Agency
MCH	Ministry for Culture and Heritage
the Manager	the Crown acting by and through the Chief Executive of the Ministry of Business, Innovation and Employment
the Ministry	Ministry of Business, Innovation and Employment
MPIS	Maximum permitted interfering signal
MSP	Managed Spectrum Park
NZMG	New Zealand map grid
PIB	Public Information Brochure
the Regulations	the Radiocommunications Regulations (2001) and any amendments
Rightholder	the owner of a spectrum licence
RSM	Radio Spectrum Management, the group within the Ministry responsible for managing radio spectrum issues
The Register	Register of Radio Frequencies
TLA	Territorial Local Authority
TPK	Te Puni Kokiri (The Ministry of Māori Development)
UEL	Unwanted emission limits

1.6. Amendment History

Issue	Date of effect	Description of Amendment	Authorised by
1	July 2014	- First edition incorporating existing Cabinet documents, PolDocs and other policy documents concerning licences for broadcasting.	Len Starling
1.1	August 2014	- Correction to Figure 1. - Correction to the FM licences table in Appendix 1.	Len Starling
2.0	February 2016	- Changes to Broadcasting Services - Licence allocation methodology, pricing - minor editorial changes	Len Starling
2.1	September 2016	- Changes to Broadcasting Services – Sound, New Licences and Appendix 3 - Document formatting.	Len Starling
3	August 2018	- Addition of VHF LMR policy - minor editorial changes	Len Starling
4	February 2020	- Additional detail on policy & requirements for issue of new FM sound broadcasting licences - Incorporation of pricing into Section 4.1.1.1 and removal of Appendix 1 - Update to descriptions of reserved blocks in VHF FM band plan	Len Starling
4.1	March 2020	- Updated section 4.4.2. describing frequencies for Pacific Radio	Len Starling
4.2	December 2021	- Added URL for gazetted General User Licence for Low Power FM Broadcasting in section 4.1 - Added further detail in section 4.1.1.1 Allocations for commercial use - Spectrum Auctions	Len Starling
4.3	April 2023	- Addition of section 6.2 on Regional Broadband Use between 3 300 – 3 340 MHz	Daniel O'Grady
4.4	November 2023	- Editorial changes to reflect current Management Right numbers. Deletion of rules following expiry of VHFLMR.	Daniel O'Grady
4.5	April 2024	- Editorial amendments and RSM website hyperlink amendment under "Regional broadband licences in 3.30–3.34 GHz"	Daniel O'Grady

2. General

2.1. Purpose

Spectrum Licence Policy Rules in Crown Management Rights describes the operational policy and associated processes that apply for new and modified spectrum licences issued in Crown management rights. These policy rules must be completed before the licences will be approved for registration in the Register of Radio Frequencies (the Register).
The policy rules apply only to spectrum licences issued in management rights managed by the Crown. The policy rules for radio licences are published in Public Information Brochure 58 (PIB 58).

Crown management rights currently include spectrum for:

- suitable AM and FM radio;
- television broadcasting;

for some Fixed Wireless Access (FWA) services. The band plans and channelling for Crown management rights used for broadcasting purposes can be found in Public Information Brochure 24 (PIB 24). The inclusion of a band plan, or a particular channel in any band plan, does not necessarily mean that the band or channel is available for licensing.

Spectrum Licence Certification Rules for Crown Management Rights (PIB 39) covers the technical requirements for spectrum licence certification.

2.2. Radio Spectrum Management

The radio spectrum is administered under the Radiocommunications Act (1989) (the Act) in two regimes. The regimes are:

- management rights and spectrum licences, described in Parts 2 to 7 of the Act,
- radio licences, described in Part 13 of the Act and the Radiocommunications Regulations 2001 (the Regulations).

Crown management rights are management rights for radio spectrum where the Manager is the Crown acting by and through the Chief Executive (CEO) of the Ministry of Business, Innovation and Employment (the Ministry). They are created for the purposes of:

- registering spectrum to be administered on behalf of the Crown by the Ministry or other government departments,
- registering spectrum in preparation for being auctioned or allocated to other parties for them to use or manage.

Radio Spectrum Management is the group within the Ministry responsible for managing radio spectrum issues. Crown management rights managed by RSM are administered through the issuing of spectrum licences to legal entities for:

- commercial broadcasting,
- public policy broadcasting purposes in accordance with policies and processes determined by the Ministry for Culture and Heritage (MCH) or Te Puni Kokiri (TPK), and
- telecommunications purposes such as broadband services or for other purposes to meet Government policy objectives.

In addition, general user spectrum licences (GUSL) may be issued in Crown management rights. GUSLs may be used by every person or legal entity without any requirement for payment of fees or registration by the users, subject to compliance with the terms of the GUSL.

Resource fees for management rights and spectrum licences, when applicable, are collected by RSM on behalf of the Crown.

2.3. Crown Management Rights

While some management rights have been auctioned to provide opportunities for industry to utilise spectrum bands on a national basis, management rights are retained where the Crown considers its policy interests are better achieved by providing access through spectrum licensing.

Current long term Crown management rights are as follows:

Management Right No.	Expiry	Lower Frequency MHz	Upper Frequency MHz	Use
206	2031	0.521	1.612	MF-AM broadcasting
207	2031	88.4	106.63	FM sound broadcasting
364	2033	510	606	UHF Digital TV broadcasting
258	2028	2 575	2 620	Managed Spectrum Park
514	2033	3 300	3 3400	Fixed Wireless Access (for Regional Broadband Use)
514	2033	3 340	3 400	TBC

2.4. Procedures for establishing Spectrum licences

The spectrum licence for any radio service operating within a Crown management right must:

- be granted by the Crown Spectrum Asset Manager (CSAM),
- be registered in the Register in accordance with the requirements of Part 3 of the Act and using the forms (online when available) prescribed in Schedule 7 of the Regulations.

This document must be read in conjunction with Spectrum Licence Certification Rules for Crown Management Rights (PIB 39) - Engineering Rules and Information for Approved Radio Engineers.
The Crown Spectrum Asset Manager will not grant any spectrum licence unless:

- the licence meets the policy rules set out in this document,
- the licence has been certified by an Approved Radio Engineer (ARE) in terms of the requirements of the Act (which includes being technically compatible with current and planned licences in the Register, and the technical requirements of PIB39),
- all application fees, annual licence fees and spectrum resource fees applicable to the licence type as described in these rules have been paid,
- any applicable licence agreement has been completed.

2.5. Frequency bands

Frequency bands referred to throughout this document are as follows:

Abbreviation	Name	Frequency range

MF	Medium Frequency	(0.3 – 3 MHz)
HF	High Frequency	(3 – 30 MHz)
VHF	Very High Frequency	(30 – 300 MHz)
UHF	Ultra High Frequency	(300 – 3 000 MHz)
SHF	Super High Frequency	(3 000 – 30 000 MHz)
EHF	Extremely High Frequency	(30 000 – 300 000 MHz)

2.6. Equipment standards

Standards for equipment used in Crown management rights are managed by the requirement for spectrum use to conform to licence certification technical rules published in PIB 39. The certification includes a requirement for licences to comply with Reference Standards published pursuant to section 133 of the Act. These Reference Standards are available on the RSM website www.rsm.govt.nz.

2.7. Licencing Agencies

Government has over the years agreed that particular licences[1] suitable for broadcasting should be reserved in order to better meet governments broadcasting policies[2]. Prior to granting licences on these frequencies the CSAM will seek advice and recommendations from other agencies which have the policy responsibility for these broadcasting outcomes. These agencies are known as Licensing Agencies (LA's). The LA's operating within Crown management rights are:

- MCH Ministry for Culture and Heritage.
- TPK Te Puni Kokiri.

Where particular frequencies have not been reserved or subject to particular policies, the CSAM will only authorise and allocate licences if appropriate under government policies. Where management rights are owned by non-Crown entities, (for example Spark, Vodafone, etc.) it is the responsibility of those organisations to create licences.

Licence Agency Recommendation
When a licence application relates to reserved broadcasting frequencies, the Register automatically sends the application to the relevant LA for approval, prior to the application being referred to an ARE for certification. LA recommendations are normally accepted by the CSAM, although the CSAM ultimately has the legal authority to grant or reject any licence application in a Crown management right.
RSM recommends that anyone interested in a reserved broadcasting licence contacts the relevant LA prior to making a licence application in the Register, or respond to the relevant call for Expressions of Interest as and when these occur.

The following table summarises reserved licence purposes, LA's and certification roles.

[1] Licences are reserved by Cabinet decision. The majority of reserved licences are already allocated. It cannot therefore be assumed that a licence in a particular area will be available.

[2] While a number of specific licences are reserved for Iwi radio services, the policy permits additional licences to be provided where there is no Māori language service in an area.

Broadcasting licence purpose	Licensing Agency	Who can certify these licences	Management right owner
Community radio (e.g. Access radio)	MCH	Any ARE	MBIE on behalf of Crown
Pacific radio network	MCH	Any ARE	MBIE on behalf of Crown
Radio NZ	MCH	Any ARE	MBIE on behalf of Crown
Iwi Radio	TPK	Any ARE	MBIE on behalf of Crown
Māori national radio network	TPK	Any ARE	MBIE on behalf of Crown

2.8. Geographic co-ordination

The Geographic co-ordinate system used in any application to the Register must be made in the recognised format that allows direct entry into the Register. The co-ordinate system that is to be used for applications is either NZGD2000.

3. Test Licences

From time to time, RSM receives applications for test licences in Crown management rights. These applications are for testing new services in an existing management right or for new uses in spectrum that is expected to be allocated by RSM in the near future. RSM encourages the testing of new services where it is able to facilitate this, to enable economic and social benefits to all New Zealanders.

3.1. Applying for a test licence

Any application for a test licence must provide, as a minimum, the following information:

- An outline of the purpose of the testing; for example, to confirm propagation assessments.
- Identification of the period during which testing will be completed.
- Identification of the proposed frequencies, and suitable frequency band arrangements (where these differ from the existing configuration of the spectrum band) and other technical criteria, including proposed location, power output and other relevant technical details.
- Certification, as required under the Act, that the proposed test licence will be technically compatible with existing licences in the Register.
- Any other engineering documentation and reports, such as licence documentation and completed forms required under the Act and the Regulations.

The licensee is responsible for all engineering costs and for payment of licence and administration fees to RSM.

3.2. Potential conditions for a test licence

RSM may grant the test licence depending on the existing and proposed future use of the frequency for which the application has been made. If a test licence is granted, RSM may add any or all of the following conditions:

a) The test licence:
   - must only to be used for purposes consistent with the agreed terms,
   - will be for a defined short term period,
   - will have no right of renewal,
   - may not be extended to enable testing for a further period.

b) The licensee must provide the CSAM with the authority, through the authorities on the proposed licence, to cancel or modify the licence at any time. This authority will be exercised if a situation occurs where the emissions under a test licence are responsible for harmful interference to any other licenced service. If the manager cancels or modifies the licence due to harmful interference, the licensee has no right for any compensation or refund of fees, engineering costs or resource charges.

c) The licensee may cancel a test licence at any stage. In such an event, there will be no refund of any fees, engineering costs, or resource charges.

d) Prior written agreement of the CSAM must be obtained before a test licence may be transferred to or used by another party. Such requests will be dealt with on a case by case basis. The CSAM may decide not to permit a transfer.

e) The licensee will be liable for all costs incurred in complying with the licence conditions. This includes, but is not limited to, preparation of the licence and costs incurred to verify the operation of the licence.

f) The licensee will be liable for any damages caused to any other licensed users of the radio spectrum by the operation of the test licence.

The CSAM reserves the right to include any additional conditions that may be deemed necessary to protect other users of the spectrum. These may include, for example, conditions to limit:

- the number of test licences,
- the location and geographic spread of any licences,
- the bandwidth of spectrum used.

3.3. Commercial uses of test licences

Generally, test licences are made available for technical testing of services, and may not be used by companies to test the commercial viability of a service.

RSM does not allow commercial use for a number of reasons, including:

- The risk that customers are left 'orphaned' when the test licence expires.
- The long term allocation of spectrum licences is usually carried out by a contestable allocation process and the issue of a commercial test licence may undermine this process.
- The difficulties in providing for commercial testing in a market-neutral way.

The restriction on commercial services may be waived under special circumstances where the technical viability of a licence is most effectively evaluated by a commercial use. An example is the use of a test licence to evaluate the use of narrow frequency separation between sound broadcasting licences – see also Section 0 4.1.2.2 Interference Evaluation Licences.
If a test licence is made available for commercial services, the applicant must pay a resource rental, which will be set by the CSAM for each part or full month of the licence.

Any waiver is at the full discretion of the CSAM. Any applicant who wishes to use a test licence for commercial purposes must demonstrate to RSM's satisfaction that such testing does not undermine the management rights allocation regime or risk stranding of customers. RSM will also need to be satisfied that it has the ability to provide equivalent licences to other market players should these be sought.

4. Broadcasting Services - Sound

4.1. New Licences

Licences will normally be allocated through a contestable process, typically by a commercial auction. Where the Government has reserved specific licences to achieve a specific policy objective, those licences will be allocated by the agency responsible for the policy objective (i.e. TPK for licences to be used for promoting Te Reo Māori, or MCH for promoting New Zealand's culture & heritage). The commercial aspects outlined in this PIB will generally not apply to licences reserved to meet specific Government objectives.

New licences shall be independent of other licences in terms of technical interaction. Where appropriate, within the technical constraints imposed by existing licences, any new licence will be optimised to achieve the greatest population coverage, especially in regard to transmitter power and location, (although some allowance would be made for specific "pocket" coverage situations).

The following policies are in part derived from decisions of March 1991 where Cabinet:

> *"Agreed that where a new licence right can be created following initial tendering of licence rights within a management right (without impingement or alteration of an existing rights), such rights should be allocated as required by the market, and be allocated by tendering in due course unless they are self-evidently of little value, in which case they should be made available in return for payments covering the costs of making them available."*

FM Raster

Planning for licences suitable for FM broadcasting involves a "block and group" scheme (or "Raster") in order to keep all licences at a site (and other sites serving largely the same area) in a common group. This gives a consistent frequency separation of 0.8 MHz (or multiples of this separation) between licences at the same site (or serving the same area). Unless there is compelling evidence to the contrary, RSM will only licence services in the FM band "on-raster" i.e. in the same frequency group for the licensed area, at 0.8 MHz spacing.

Appendix 2 – VHF FM band plan outlines the "block and group" frequency raster for FM broadcasting. A "group" is identified by a letter A, B, C etc., while a "block" has a number 0, 1, 2, 3 etc. A low frequency (88.2 MHz) is designated A0, the next (0.1 MHz above) is designated B0, then C0 etc., and after H0 the next frequencies are contained in the next block and are designated A1 (89.0 MHz), B1, C1 etc. until the frequency H1, when a further block is used commencing with designation A2 (89.8 MHz). The designation process repeats through the entire 88-108 MHz range up to Block 24.

At the extremities of the FM band, frequencies up to and including B0, and from B23 and above, lie outside the management right. They are subject to a general user radio licence for low power FM broadcasting, and are outside the scope of this PIB.

4.1.1. Long Term Licences

Long term licences are typically allocated for the remaining duration of the management right. However, the CSAM can agree to a shorter term if there are compelling reasons for this. For the avoidance of doubt, inability or lack of willingness to pay for a full term licence is not a compelling reason.

4.1.1.1 Allocations for commercial use - Spectrum Auctions

In order to ensure that radio spectrum goes to the highest value use, commercially valuable spectrum is allocated by competitive procedures. This is often, but not always, in the form of an auction. In the past RSM has used a number of auction methods, including first and second price tender, open outcry, and multiple round ascending bid auctions. Depending on the auction method, RSM may operate radio spectrum auctions over the Internet, by email, by open outcry or any other method as deemed appropriate.

Most feasible FM licences in metropolitan areas have already been allocated. However, it may still be possible to create a licence in some more rural areas. Applicants wishing to purchase a licence must first:

- Engage an ARE to identify a suitable frequency, location and transmission parameters - The detailed technical rules for these parameters can be found in PIB 39.
- Ensure that the ARE creates the licence in name of the Crown with a commencement date six months into the future.
- Clearly identify the entity they are representing to the Crown Spectrum Asset Manager at the time of application, providing the RSM Client Number, if known (note this will be the legal owner of the licence, should the applicant be the winner of a contestable process).
- Take all reasonable measures to ensure that they will have access to the transmission site

The CSAM will then call for expressions of interest in the licence. If more than one party submits an expression of interest, the frequency is auctioned with a minimum reserve price of $1,150 and sold to the highest bidder. If the initial applicant is the only party interested, the frequency will be sold to them at the higher of the minimum reserve price or the price calculated using the P (area) values in table below.

The following tables give the P(area) value, i.e. the value in $ per head of population within the coverage area of commercial sound broadcasting licences. These values are used to determine the value of reserve prices and modifications to commercial sound broadcasting licences. Section 4.2.2. for Pricing of modified Licences gives the formula where the P (area) values are used, and for a new licence Pm = zero.

AM Licences: P(area) value

Area of Licence	P (area) ($ per head)	Comment
AM Licences	0.11	All AM licences use the same price per head of population

FM licences: P(area) value

Area of Licence	P (area) ($ per head)	Comment
FM Licences	1.15	All FM licences use the same price per head of population

Notification of auctions may be made via the RSM monthly email business update newsletter and or via the RSM website.

4.1.1.2 Allocations of local commercial FM spectrum licences

Several current FM spectrum licences were created and allocated under a specific fixed term licence set to foster locally-owned, commercial broadcasting services. These local commercial FM licences were initially allocated by auction. There are no new local commercial FM licences available for allocation.

4.1.2. Short Term licences

4.1.2.1 Event Licences

Policy

Temporary (or "Event") licences may be issued for periods of up to three months.

All temporary licences will have a three month stand down period applying immediately after the expiry of the licence. Extensions to the period of use and/or exemptions to the stand-down may be approved at the sole discretion of the CSAM. Regular temporary licence applications may be declined at the CSAM's discretion.

It is unrealistic to assume that an event licence will always be available at a specific venue (say for an annual race car event), or that a similar frequency might apply to any licence that may be available.

Specific Conditions

A resource rental is charged for all temporary licences except for reserved frequencies which are allocated to meet given policy objectives.

Situations not covered by the temporary licence provisions include:

- Broadcasting in lieu of 'permanent' broadcasts (i.e. to fill a 'coverage gap' while a long-term solution is found).
- Broadcasts where there is an expectation of the licence being extended.

The following table provides the population based charges (all amounts GST exclusive) for the calculation of the resource rental charge.

A minimum charge of $50.00 has been set to ensure that at least the administrative costs of collecting resource rentals are covered.

Type of Licence	Cost per head of population coverage per month licensed, or part thereof
FM Radio	0.479 cents
AM Radio	0.046 cents

4.1.2.2 Interference Evaluation Licences

As the radio spectrum becomes more congested, it becomes more difficult to achieve technical compatibility between existing and proposed new licences.

Policy
Where tests are required to assess the long term suitability of a frequency, short term licences may be issued, with a requirement that transmissions will cease if there is any interference to existing users.

Where there are competing applications for an interference evaluation licence, then RSM will first consider the application that is most likely to fully test the interference limiting criteria for a long term licence. If there is little difference between applications RSM will deal with applications in order of application. Where practical, further licences may be issued so that the broadest evaluation of the long term suitability of the frequencies is undertaken.

A resource rental charge may be made where RSM considers some commercial advantage could be gained from the temporary use through, for example, the confirmation of the long term suitability of the frequency for sound broadcasting services.

If the long term suitability of the frequency is confirmed by tests, the frequency would be offered for competitive long term allocation. Evaluation licences will not be granted for more than three months, and may be restricted to a lesser period.

Specific Conditions
All evaluation licences are required to have Manager cancellation authority and Rightholder and Manager modification authority so the licence may be cancelled or modified if interference occurs.

A resource rental calculated in accordance with 4.1.1.1 will be charged for each month or part thereof of the term of the interference evaluation licence.

4.1.3. Minimum implementation requirements

Policy
In the interests of efficient management and use of the spectrum resource, the allocation of new AM and FM spectrum licences will include conditions requiring the implementation and use of the spectrum licence within two years of the transfer of licence from the Crown.

Licensees are required to provide a Statutory Declaration confirming that implementation has occurred. Appendix 1 – Pre settlement statutory declaration offers an example of a statutory declaration for this purpose. If implementation hasn't been successful in the timeframe, the licence will be transferred back to The Crown for future re-allocation.

4.2. Modification of existing licences

Any modification of a spectrum licence in a Crown management right typically requires agreement of both the Rightholder and the Manager for that licence. The Act and Regulations provide a process for any agreed modifications to be recorded on the Register through use of "Form 8 – Notice of modification of spectrum licence" (Form 8 is prescribed in the Regulations and is available online).

Modifications to a licence require Certification under the Act by an ARE and must also meet the Crown's policy requirements as set out in this PIB and the technical Rules in PIB39.
The Act does not limit the scope of modifications using a Form 8, but this policy:

- limits the circumstances under which a modification is acceptable within Crown management rights,
- defines the required payment for any additional value of the modified licence,
- clarifies whether a proposed change to a transmit location or frequency should be treated as a modification or a new licence application.

4.2.1. Modification of commercial licences

Policy
If a new licence can be created without impingement or alteration of an existing licence, the new licence will be allocated through a market mechanism.

If a new licence cannot be created without impingement or alteration of an existing right(s) then the new licence may be treated as a modification of the existing licence with a commercial value assessed and payable for such modification.

Determination of whether changes constitute a new licence or modification
There are two basic tests that need to be undertaken. These are the:

- Impingement Test to determine if the proposal is a modification, or should be treated as a new licence.
- Compatibility Test to determine if the proposal is technically compatible with other licences, as required for certification under the Act.

These tests are of particular significance for licences in the management rights used for AM broadcasting because of night time propagation conditions.

Impingement Test: Is the proposal a modification?
The process for the impingement test is to assume that the current licence remains unmodified, and to treat the proposed modifications as a separate new licence and then assess whether the separate new licence would impinge on the rights of the current licence.

The rights defined on a licence for broadcasting are generally created under section 48(1)(a) of the Act and provide a right to transmit radio waves and a right to have no interference. It is the right to have no interference which is relevant in determining if impingement occurs from any proposal.

Rights to have no interference are described by Protection Locations and MPIS levels on individual licences. The impingement test is to be undertaken to the protection locations following the rules in the Certification Rules (PIB 39). Note that this test is more stringent than methods such as assessment of overlapping coverage (i.e. two licences may not have overlapping coverage, but there may still be degradation to the MPIS values specified at the protection location(s).

There are two distinct requirements to be considered to ensure that any potential impingement is considered for both daytime and night time propagation conditions.
The Certification Rules prescribe the full requirements for assessing technical compatibility and for certification. The following paragraphs are provided for completeness, but do not replace the Certification rules.

Assessment of FM licences is straightforward as there is no day/night propagation variation.

The majority of Protection Locations for AM licences are used for calculations under daytime propagation conditions and this makes determination of impingement at these locations straight-forward using the ITU-R Recommendation P.368 Ground Wave propagation curves as outlined in the Certification Rules. These calculations can be undertaken on the basis of a single interfering signal.

A single protection location is used for calculations under night time propagation conditions and these calculations should therefore be done to this location. Licence conditions identify the protection location that relates to night time protection which is typically the actual transmitter site.

The calculations are to be done on the basis of the summation of the six strongest interfering signals in accordance with the Certification Rules. The 0.5 dB tolerance on the summation is to be applied.

The presence of any impingement is then used to determine whether the proposal is to be treated as a modification, or as a new licence.

Compatibility test
This is to ensure that the proposed licence is technically compatible with other licences in the same area or on the same or adjacent frequencies in the normal way. If the proposal is being treated as a modification, the existing licence should be ignored, but if the proposal is to be treated as a new licence then the existing licence must be taken into account.

The compatibility test is the necessary assessment for the normal engineering certification of the proposed licence. This ensures that other licences are not unduly degraded by the proposal. In many cases this test will determine the overall acceptability of the proposal.

4.2.2. Pricing of modified Licences

Policy
The holder of the unmodified licence may elect to either:

- Bid at auction for the modified licence on the basis they hold no pre-emptive rights to the modified licence; or
- Purchase the modified licence and pay the calculated increase in value according to RSM's formula for changes to population coverage.

The procedures for both options are outlined further below.

Auction option - procedure
The procedure to be followed to auction a modified licence will be as follows

i) The licensee provides RSM with pre-signed cancellation forms for the original licence.

ii) RSM agrees to place the modified licence in an upcoming auction.

iii) The reserve auction price is the agreed value of the original licence, determined by current market values or the original acquisition price.

iv) The licensee (and others) bid at the auction allowing the acquisition of the licence through the normal auction processes.

v) If the licence is sold for a price above the reserve price, RSM would cancel the original and issue the modified licence to the successful bidder.

vi) If the successful bidder is the holder of the original licence, the successful bidder would pay the difference between the reserve price (the agreed value of the unmodified licence) and the final purchase price in the auction. The original licence would be cancelled.

vii) If the successful bidder is not the holder of the original licence, RSM would pay the licensee the reserve price and a pre-agreed percentage (not exceeding 50%) of the amount that the purchase price exceeded the reserve price. The original licence would be cancelled.

viii) If the modified licence does not sell (i.e. no bids are received at or above the reserve price) RSM will, at the discretion of the holder of the original licence, either return the original licence cancellation forms, or cancel the original licence and provide the modified licence at no additional resource cost.

ix) The original licence holder pays all administration and engineering services charges should they retain or relinquish the original licence under step viii) or become the holder of the modified licence under step vi).

Purchase option - Calculating Value of Increased Population Coverage

The increase in value of a modified licence is determined by application of the formula set out below. The increase in value is the product of:

a) the increase in population coverage (see note 1 below) and

b) the average price per capita for each comparable licence, where a "comparable licence" is one with the same or similar geographical area of coverage (see note 2 below) .

In mathematical terms this increase in value is the following Price:

Price = $[(P_m – P_o) \times V(area) \times (T/240)]$ plus GST

Where:

P_m	is the population count of the modified licence
P_o	is the population count of the original licence
V(area)	is the value per head as listed in 4.1.1.1
T	is the tenure in number of months before expiry of the modified licence assuming a 20 year original licence term. See also Note 11 below.

Formula for changing to a different coverage area

If the modified licence is in a different area to the original licence the formula becomes:

Price = $\{[P_m \times P(modified\ area)] – [P_o \times P(original\ area)]\} \times (T/240)$ plus GST

Notes:

1. If **Price** is calculated to be negative then no increase is charged and no refund is given.
2. Population coverage is estimated in accordance with the following:
   i. Population data is obtained from the most recent census release data held by RSM from Statistics New Zealand;
   ii. Topographical and cadastral information is obtained from the most recent LINZ surveys;
   iii. RSM will use what it considers to be the most appropriate software available at the time of each new application.
3. Estimates of population coverage may therefore vary over time and over subsequent applications.
4. There is no objection to using either the most recent or immediately previous census data, providing the “before” and “after” counts are done using the same database.
5. RSM reserves the right to decide on the applicable population values in any specific instance, and will use its normal propagation prediction tool to derive population counts. At present either the MAPINFO or ICS Telecom tool may be used, but other tools may be used in the future. It is necessary that population counts for the “original” and “modified” licences are obtained with the same propagation model and parameter settings.
6. Parties proposing modifications are able to provide their own population counts to RSM for consideration, but should also identify the technical basis of this engineering work.
7. Where there is any uncertainty RSM can advise on which transmitter area and value should be used for a particular licence.

8. RSM recognises that there may be situations where a proposed licence would have pockets within the coverage contour where the signal is above the minimum field strength, but reception is degraded by signals from other licences (i.e. adverse protection ratios). These areas are expected to be insignificant in determining the overall population counts and will generally be included in population counts on the basis of field strength being adequate (although it is recognised that some propagation tools can exclude these areas). If the degradation is from adverse protection ratios and is over a significant area, it is probable that the certification requirements of the Act would not be met. The proposal would therefore not proceed.
9. RSM will consider the incorporation of new pricing data from recent auctions only when there is a significant amount of new data available.
10. **Application to licences with restricted transmission hours.** For licences with restricted hours of transmission (E.g. daylight only) the T value of the fee calculation formula may be further modified to reflect the hours of transmissions prescribed on the licence. All hours are considered to be of equal value.
11. **Application to local commercial FM licences.** These licences were sold with restrictive conditions and therefore achieved a lower market value than for a full commercial licence. When a local commercial licence is being modified the modification price should be calculated using a value per head of population derived from the auction price of the specific licence (or average of all such licences in an area), and not the figures applicable to full commercial licences given in the appendix. The tenure factor and GST are still applicable.

4.2.3. Temporary variations for increase in population coverage area

A temporary increase in coverage is often sought to test a new market. To ensure that no unreasonable commercial advantage over competitors is achieved, certain conditions will be imposed on the applicant.

Policy
Temporary variations to an existing licence may be permitted for a maximum of three months. Variations to licence conditions are at the discretion of the CSAM.

Only one temporary variation will be permitted for each frequency and site. However, if there are any changes in ownership of the licence, subsequent purchasers of the licence will be permitted one temporary variation.

Where the CSAM considers that a resource payment is appropriate a population based charge will be applied for the resource rental as follows.

Type of Licence	$ per head of increased population coverage (per month) or part thereof	Maximum payable (per month)	Minimum payable (per month)
FM Radio	0.479 cents	$1000	$50
AM Radio	0.046 cents	$250	$50

4.2.4. Reductions in Power

Policy
Licence fees set out in Schedule 6 of the Radiocommunications Regulations apply to all licences including those issued in a Crown management right. Fees payable are set by the maximum power established on the licence.

A licensee is free to operate at a power level below that specified on the licence. Any change to the maximum power permitted under a licence which has little other effect than to reduce the fee liability will generally not be agreed by the CSAM.

4.3. Other issues

4.3.1 Licence term

Generally, when creating and allocating licences, the licence term will be for the remaining duration of the management right and the licence will expire at the end of the Management Right (see section 4.1.1 Long Term licences). Licences of a shorter duration will be created in accordance with the policy in this PIB (see Section 0

Short Term licences).

4.3.2 Off-raster licences

Off-raster licences will only be approved if there is very compelling evidence to support them. Any application with a frequency separation other than 0.8 MHz in areas of common coverage must be backed by a comprehensive engineering analysis, proving how interference cases are to be avoided. If modelling shows acceptable results, RSM is likely to also require field trials using test licences, unless such separation at that site has already been proved satisfactory.

4.3.3 Synchronous Transmission

Synchronous systems use the same frequency for two or more licences which provide overlapping coverage (which would otherwise provide interfering signal levels within a coverage area). Synchronous licensing assessment is explained in the Planning criteria given in Section 4.3.1 of PIB39.

As described above, our strong preference is that new FM licences are allocated on a contestable basis. Synchronous licences are by nature not contestable and will therefore only be considered on a case-by-case basis, under circumstances that are likely to be exceptional.

Specifically, to justify a synchronous licence it must be demonstrated to RSM's satisfaction that there is no reasonable site and engineering alternative to a synchronous licence. It is not sufficient simply to show that an asynchronous licence at an existing site and the proposed new site may interfere with each other under some particular site/engineering scenario. The application needs to show that there is no reasonable alternative to the scenario.

Demonstration of the need for a synchronous licence is the responsibility of the applicant. Applicants for synchronous licences should expect that RSM will ask questions and may request that they undertake additional modelling. Judgement of what is 'reasonable' in terms of alternate engineering rests with RSM. Given the expected rare and unique nature of these applications, full *ex ante* definition of reasonable is not possible.

Creation of a new synchronous licence must be 'on raster' i.e. in the same frequency group for the licensed area. Licences for synchronous transmission need specific approval in regard to any non-standard frequency separation between licences at a site that may result.

Licences for synchronous use must have conditions which ensure that protection criteria do not apply in regard to transmissions from other synchronous licences. Where there is overlap or impinging field strengths between licences that are planned for synchronous FM use, the population counts for each licence will be determined as separate licences, without regard for any impingement or overlap from the other licence(s).

4.4. Renewal offers for spectrum licences

4.4.1. Commercial reallocations

The Act provides for management rights to be created for a period up to 20 years. However, under conditions such as when technology is changing rapidly, RSM may create and offer new Management Rights and/or spectrum licences for a lesser period.
Commercial Rightholders need to have the certainty required to plan and invest effectively, and RSM needs to allow sufficient time for the policy to be implemented before rights expire.

Policy
Commercial spectrum rights may be re offered to existing Rightholders up to five years before expiry for up to a further 20 years, subject to a review on a case by case basis to ensure consistency with New Zealand's international radio obligations and the general objective of maximising the value of the spectrum to society as a whole. The new offer may have technical or other differences from the expiring rights.

Where technology or planning standards have changed, RSM may take the opportunity to revise the parameters of the spectrum licences offered to Rightholders.

As part of settlement of offers, Rightholders may be required to provide evidence of “ongoing use”. Depending on the nature of the service, and current government policy, ongoing use tests will include minimum requirements for parameters such as population for which the service is available, hours per day, days per week and period for which the service has been continuously available. Rightholders will be required to provide a statutory declaration that the ongoing use conditions have been met and will continue up to the settlement date. A sample statutory declaration is shown in Appendix 1 – Pre settlement statutory declaration.

Spectrum rights may be offered at a price determined by price-setting formulae, or an alternative pricing model that estimates the market value of the rights. If existing Rightholders don’t want to pay this price, then the respective rights may be reallocated by auction or otherwise as per Government policy at the time.

Implementation
Approximately six years prior to the expiry the rights, RSM will initiate a case-by-case assessment of specific spectrum rights which will then typically be released for public consultation. The outcome of the consultation will lead to recommendations to Government in regard to offers of new spectrum rights, or indeed whether new spectrum rights should be created at all.

That case-by-case assessment may consider among other things:

- the level of spectrum related investment (over and above spectrum costs),
- whether unused rights should be renewed,
- whether direct application of the price-setting formula appropriately estimates the market value of the rights, or whether base prices should be adjusted, additional information recognised, or a valuation or auction used,

- the Crown receiving a fair financial return for the use of spectrum in the future period.
- whether commercial renewal is appropriate for individual rights,
- appropriate parameters for renewed rights,
- an appropriate renewal period,
- the likely future use of the band,
- consistency with New Zealand's international radio obligations, and
- the general objective of maximising the value of the spectrum to society as a whole.

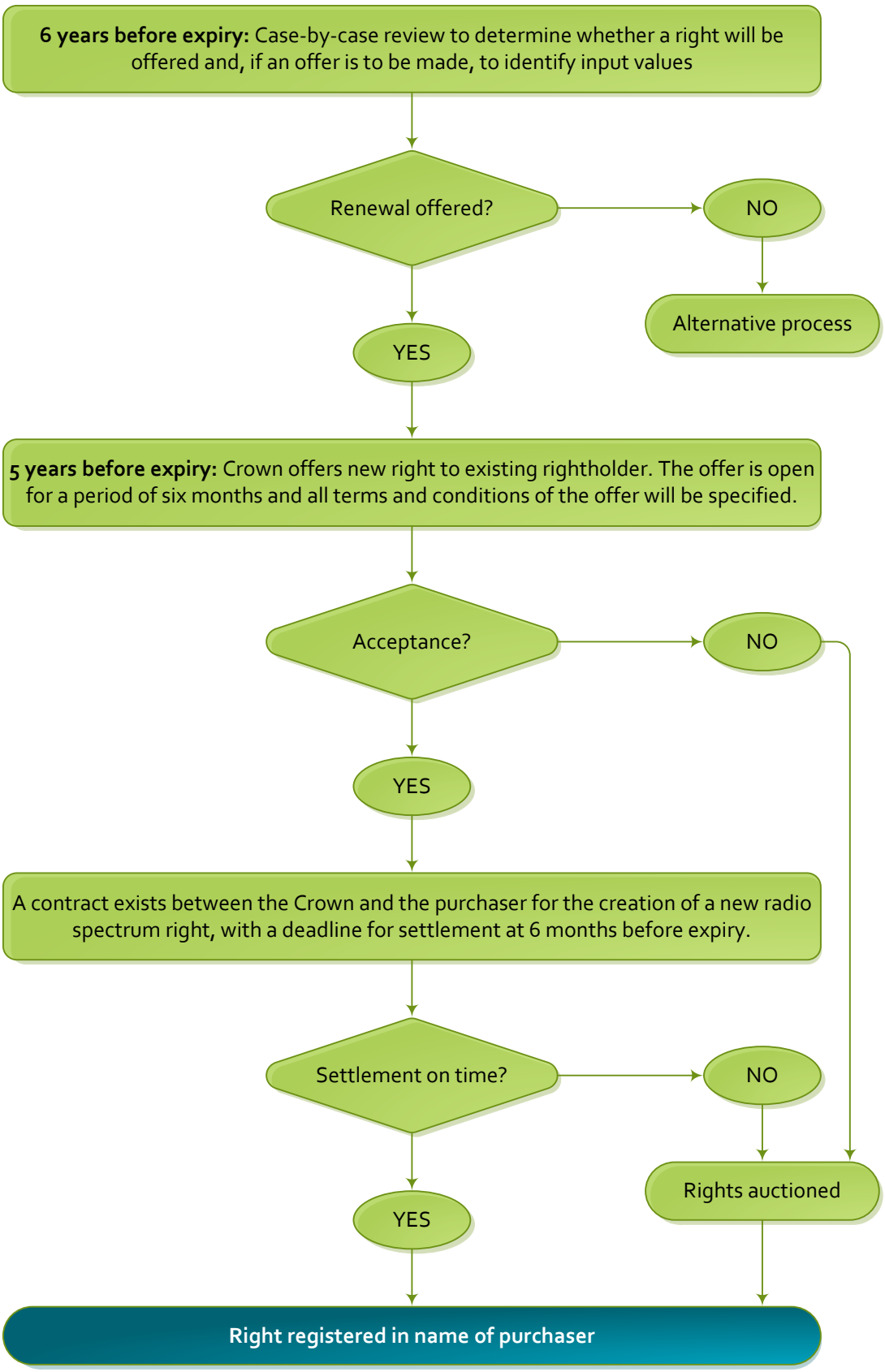
For some spectrum rights, base price data may need to be adjusted before application of the price-setting formula (such as by averaging or benchmarking where base price data is not available or to promote administrative simplicity), and for other rights alternative approaches such as allocation by auction may be required.

Approximately five years prior to the expiry, and subject to the above assessment, Rightholders will be offered renewal rights, open to acceptance for three months. If the Rightholder does not accept the offer, RSM may offer the rights via a contestable auction. Where an offer includes an option for the Rightholder to require a contestable allocation to be held, then this will be held prior to the expiry of the existing rights.
The terms of any offer will generally:

- require full settlement of purchases at least six months prior to commencement of the new right, including any pre-settlement requirements, such as proof of use,
- provide that if the purchaser fails to settle on time, the rights may be reconfigured and allocated at a later date, as seen fit, with financial penalties on the defaulting purchaser,
- include a minimum charge for each right, as agreed by Government.

In the event that a right holder does not respond within three months, or rejects the offer but does not indicate an intention to bid for the rights, the rights may be reconfigured and allocated at a later date, Figure 1 illustrates this process.

Figure 1 Preferred timeline and process for implementing government policy on the expiry of spectrum rights.



4.4.2. Non-commercial allocation of licences

The policy for the re-allocation of non-commercially allocated licences once they are nearing expiry is established in conjunction with TPK and MCH.

Each situation is considered on a case by case basis which will include assessment of the extent that the licensee is meeting the expectations of the original grant of the licence and any associated agreement with the licensee.

A new licence agreement will generally be required if a further licence is to be provided.

Radio New Zealand
Radio New Zealand operates services using reserved licences for:

- National Radio – AM licences at specific transmission sites.
- National Radio – FM licences (exclusive use of frequencies in the 101.0 to 101.7 MHz frequency range together with a few licences outside of this range).
- Concert FM – Licences in the FM band at specific transmission sites.
- AM Network – AM licences at specific sites to cover main centres, used for Parliament and leased to an external programme provider when not required for Parliament.
- A small number of reservations exist for extension of services, typically for the National Radio FM service.

Pacific Radio
FM licences are reserved at 14 transmission sites and 13 of these are owned by the National Pacific Radio Trust. A single AM licence is reserved in Auckland and is owned by the National Pacific Radio Trust.

Community access and other special purpose use
Community broadcasting is generally provided for by reserved licences in main population centres. In many cases these are used on a “access radio” basis where various community groups provide programming segments to be broadcast on a single licence.
A number of reserved licences have been provided to Rhema Broadcasting Group which reflect the original established usage prior to the enactment of the Act and specific Government decisions when such licences expired in 2011.

Māori broadcasting
Government has an established Iwi Broadcasting Policy which facilitates provision of licences to Iwi for broadcasting services promoting Māori language and culture. Services are well established in most areas but further licences may be granted where there is no established service and an iwi wishes to broadcast within its traditional rohe. The nature of radio propagation means that there will inevitably be some overlapping coverage between transmissions and that the areas of one iwi rohe that may be served by transmissions licenced to another geographically adjacent iwi.

4.5. Band Expanders

The frequency range for FM broadcasting in New Zealand covers 88-108 MHz. This frequency range is used in virtually all countries except Japan. Japan uses a lower and narrower frequency range covering 76-90 MHz. Used cars imported from Japan with an un-modified Japanese specification car radio only receive New Zealand broadcasts at 90 MHz or below. In the past, a common and inexpensive solution has been to fit a "band expander" in the aerial lead to allow more stations to be received.

When a band expander is fitted to a Japanese specified radio, the FM broadcasting signal in the 88-108 MHz band is "shifted" to fit within the Japanese car radio receiver. Because the New Zealand band is wider than the Japanese domestic band (20 MHz c.f. 14 MHz), the shifting results in an "overlaying" of one part of the spectrum with another to fit within the Japanese frequency band. The incoming 88-108 MHz band is shifted by the “shift” frequency and also by twice the shift frequency. A part of each of the two shifted bands falls within the 76-90 MHz range of the receiver while other parts of the ranges fall outside the receiver range.

Every incoming broadcast station in the 88-108 MHz range should therefore appear at least once on the Japanese radio, but some stations may appear twice. The degree of success of this technique depends on the particular frequencies in use in the area where the radio is being used and the amount of "shift" used by the particular band expander. Shift frequencies can be 10 MHz and 20 MHz, 12 MHz and 24 MHz, and the like.

In some cases, the reception on particular frequencies will be degraded or unusable as the band expander has overlaid broadcasting signals from two different stations.

Policy
Radios designed for the Japanese domestic market, with or without a “band expander” are declared as “inappropriate” receivers under the Regulations (Regulation 46A) and RSM will not take into account any potential reception issues due to their usage. RSM will not limit creation of new licences, or apply reduced power to licences, at a site simply because there is a 10 MHz, 12 MHz or similar frequency separation between licences at the site (or between licences at sites serving a common coverage area).

The RSM website www.rsm.govt.nz gives further descriptions of band expanders and their limitations.

Certifying licences for FM broadcast stations
Any degradation of reception through use of a band expander is not "interference" in terms of the Act because the degradation occurs within the particular equipment which is unsuited for New Zealand conditions. ARE’s certifying spectrum licences for broadcast FM stations must not take into account the receiving characteristics of either receivers designed for use in Japan or band expanders, as these are “inappropriate receivers” under the Act (sections 2 and 134(1B)) and Regulation 46A.

4.6. Renewal Offers beyond 2031

Decisions concerning provision of future licences after the expiry of the current licences for AM and FM sound broadcasting in 2031 are likely to be made around five years prior to expiry (i.e. by 2026). Such policies would be subject to the decisions of the Government of the day. It is likely that RSM will undertake a consultation process with the relevant licence holders and interested parties to canvass the issues to ensure that government was able to make informed decisions on whether or not to provide further licences, and the basis on which any licences were to be provided.

5. Broadcasting Services – Television

This section deals with the provision of digital television licences. Licences for digital television are allocated in the UHF frequency band (510 MHz to 686 MHz). They have to date been generally provided in network sets that allow service to 86.5% of the population. The use of analogue television ended in 2013.

A digital television licence can accommodate several programmes simultaneously, with up to approximately ten standard definition, or three high definition programmes, or a mixture of each, being possible. RSM does not generally control usage of licence capacity. It is expected that parties seeking to broadcast will make suitable commercial arrangements with digital licence holders for transmission capacity.

5.1. Long term frequency plan

The long-term frequency plan currently accommodates 11 licence sets. Each set includes two 8 MHz DTV channels, which allows one channel for the main transmission site and a second for any infill coverage. A total of 30 sites are used to provide coverage to 86.5% of the population. PIB 24 outlines the band plan for DTV channels in the UHF spectrum.

5.2. Licence allocation

Licence sets have been allocated and are owned as below:

- Television New Zealand Ltd.
- Discovery NZ Ltd.
- Kordia Ltd and JDA Ltd (one set subdivided geographically).

- Te Mātāwai. This is allocated in the form of a management right and will enable the provision of licences to the Māori Television Service (MTS). In turn MTS would then be able to use (and offer) transmission capacity on a network using the licences.
- Various parties in some centres only.

Policy
Since the current spectrum demand for digital terrestrial television is being met effectively, a moratorium has been put in place that precludes any new digital television licences from being issued in frequencies above 622 MHz.

5.3. Resource charges

The resource charge for a set of 30 digital licences covering 86.5% of the population for the period 2013 to 2033 was $1.67 million, plus GST. The corresponding price per head of population for individual digital television licences where they are allocated is $0.42 (plus GST). This value is applied for licences in all areas of the country.

5.4. Renewal offers beyond 2033

Decisions concerning provision of licences after the expiry of the current digital television licences in 2033 are likely to be made around five years prior to expiry (i.e. by 2028). Such policies would be subject to the decisions of the Government of the day.

It is likely that RSM will undertake a consultation process with the relevant licence holders and interested parties to canvass the issues to ensure that government was able to make informed decisions on whether or not to provide further licences and the basis on which any licences were to be provided.

6. Fixed Wireless Access

6.1. 2.5 GHz - Managed Spectrum Park (MSP)

Policies regarding licences 2.5 GHz MSP services may be found on the RSM website at https://www.rsm.govt.nz/licensing/types-of-licences/managed-spectrum-park-licences. See also PIB 39, which covers technical aspects of spectrum licence certification for MSP use in the 2.5 GHz band.

6.2. Regional Broadband Use Between 3 300 – 3 340 MHz

Policies regarding licences for the purpose of providing regional broadband use between 3 300 – 3 340 MHz may be found on the RSM website at About regional broadband licences in 3.30–3.34 GHz. See also PIB 39, which covers technical aspects of spectrum licence certification for regional broadband use between 3 300 – 3 340 MHz.

Appendix 1 - Pre settlement statutory declaration

[A sample form]

I, [Name] of [Place, Occupation], solemnly and sincerely declare that:

1. I am employed by [Company] (the `Purchaser') and am authorised by the Purchaser to make this declaration on its behalf [if applicable – otherwise amend to reflect correct relationship – i.e. owner or director].

2. In relation to Lot [insert Lot details] the corresponding current licence for sound broadcasting ("broadcasting") is in current ongoing use for broadcasting.

3. [Insert the requirements of the Offer Document identifying the programme and detailing the extent of current ongoing use for broadcasting for the corresponding current licence including average hours broadcasting per day, average days broadcasting per week, average transmitting power and the period of continuous ongoing use for broadcasting up to the date of this declaration.]
Note that the Offer Document requires the Purchaser to demonstrate current ongoing use of the corresponding current licence for broadcasting. Whether or not there is current ongoing use is a matter to be determined by the Chief Executive in his/her sole discretion exercising a common sense judgment. Broadcasting for a minimum of 24 hours per day, 7 days per week (or the maximum hours of transmission under the licence if less) at a power substantially the same as the maximum power of emissions of the Lot for continuous 6 month period immediately prior to the date of settlement will be considered current ongoing use.

4. That the current ongoing use for broadcasting detailed in paragraphs 2 and 3 above will continue up to, and continue from, the date of settlement.

5. The acquisition of the Lot either does not involve a breach of section 47 of the Commerce Act 1986/ or a clearance or authorisation (copy attached) has been obtained under section 66 or 67 of the Commerce Act 1986 for the acquisition of the Lot [delete the option which does not apply].

And I make this solemn declaration conscientiously believing the same to be true and by virtue of the Oaths and Declarations Act 1957.

[Signed]

Declared at [Place] this [……] day of [……] 20[..].

[Signed by a Justice of the Peace or other person authorised to take a statutory declaration in terms of section 9 of the Oaths and Declarations Act 1957]

Appendix 2 – VHF FM band plan

FM BROADCASTING 88 - 108 MHz: BLOCK (0-22) AND GROUP ALLOCATION (A-H) PLAN

88 MHz | 100 MHz | 108 MHz

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
A	88.2	89.0	89.8	90.6	91.4	92.2	93.0	93.8	94.6	95.4	96.2	97.0	97.8	98.6	99.4	100.2	101.0	101.8	102.6	103.4	104.2	105.0	105.8	106.6	107.4
B	88.3	89.1	89.9	90.7	91.5	92.3	93.1	93.9	94.7	95.5	96.3	97.1	97.9	98.7	99.5	100.3	101.1	101.9	102.7	103.5	104.3	105.1	105.9	106.7	107.5
C	88.4	89.2	90.0	90.8	91.6	92.4	93.2	94.0	94.8	95.6	96.4	97.2	98.0	98.8	99.6	100.4	101.2	102.0	102.8	103.6	104.4	105.2	106.0	106.8	107.6
D	88.5	89.3	90.1	90.9	91.7	92.5	93.3	94.1	94.9	95.7	96.5	97.3	98.1	98.9	99.7	100.5	101.3	102.1	102.9	103.7	104.5	105.3	106.1	106.9	107.7
E	88.6	89.4	90.2	91.0	91.8	92.6	93.4	94.2	95.0	95.8	96.6	97.4	98.2	99.0	99.8	100.6	101.4	102.2	103.0	103.8	104.6	105.4	106.2	107.0	
F	88.7	89.5	90.3	91.1	91.9	92.7	93.5	94.3	95.1	95.9	96.7	97.5	98.3	99.1	99.9	100.7	101.5	102.3	103.1	103.9	104.7	105.5	106.3	107.1	
G	88.8	89.6	90.4	91.2	92.0	92.8	93.6	94.4	95.2	96.0	96.8	97.6	98.4	99.2	100.0	100.8	101.6	102.4	103.2	104.0	104.8	105.6	106.4	107.2	
H	88.9	89.7	90.5	91.3	92.1	92.9	93.7	94.5	95.3	96.1	96.9	97.7	98.5	99.3	100.1	100.9	101.7	102.5	103.3	104.1	104.9	105.7	106.5	107.3	
	Low Power FM (General User Licence)																Crown Reserve Broadcasting National Public Radio Network	Crown Reserve Broadcasting. Reserved for a National Youth network	Crown Reserve Broadcasting. Reserved for a National Māori Radio Network	Crown Reserve Broadcasting Licences for Pacific Island Radio Network, and for normal commercial allocation				Low Power FM (General User Licence)	Low Power FM (General User Licence)

Notes:

1. The lower boundary frequency of the management right is 88.4 MHz which allows the lowest carrier frequency to be at 88.6 MHz.
2. The upper boundary frequency is at 106.63 MHz which allows a carrier frequency on 106.4 MHz (or 106.5 MHz with non-standard UEL's)