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# Managed Spectrum Park Review and Regional/Non- National Allocation

## Discussion document

June 2021



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## Glossary

Abbreviation/Term	Meaning
RSM	Radio Spectrum Management
MSP	Managed Spectrum Park
The Crown	The Crown in right of New Zealand acting by and through Te Tumu Whakarae mō Hikina Whakatutuki - Secretary for Business, Innovation and Employment and Chief Executive, MBIE
The Ministry	The Ministry of Business, Innovation and Employment
WISPs	Wireless Internet Service Providers

## Invitation for submissions

Radio Spectrum Management (RSM) is conducting a review of the operation of the Managed Spectrum Park (MSP) and, in conjunction, is considering options for future allocation of spectrum in regional areas. Interested parties are invited to comment on the content of this document, in particular the questions posed, and on any related issues. Comments should be submitted in writing, no later than **5pm on 13 July 2021** to:

**By email:** (*preferred option*)

[CrownSpectrum@mbie.govt.nz](mailto:CrownSpectrum@mbie.govt.nz)

Subject line: "MSP review"

Or

**By post:**

MSP review  
Radio Spectrum Management Policy and Planning  
Ministry of Business, Innovation and Employment  
PO Box 2847  
WELLINGTON 6140

Any party wishing to discuss the proposals with Ministry officials should, in the first instance, email [CrownSpectrum@mbie.govt.nz](mailto:CrownSpectrum@mbie.govt.nz)

## Publication and public release of submissions

Except for material that may be out of scope or defamatory, the Ministry of Business, Innovation and Employment (the Ministry) will post all written submissions on the Radio Spectrum Management website at [www.rsm.govt.nz](http://www.rsm.govt.nz). The Ministry will consider you to have consented to posting by making a submission, unless you clearly specify otherwise in your submission.

Submissions are also subject to the Official Information Act 1982. If you have any objection to the release of any information in your submission, please set this out clearly with your submission. In particular, identify which part(s) you consider should be withheld, and explain the reasons(s) for withholding the information. The Ministry will take such objections into account when responding to requests under the Official Information Act 1982.

## Privacy Act 2020

The Privacy Act 2020 establishes certain principles with respect to the collection, use and disclosure by various agencies, including the Ministry, of information relating to individuals and access by individuals to information relating to them, held by such agencies. Any personal information you supply to the Ministry in the course of making a submission will be used by the Ministry in conjunction with consideration of matters covered by this document only. Please clearly indicate in your submission if you do not wish your name to be included in any summary the Ministry may prepare for public release on submissions received.

# Executive Summary

Radio Spectrum Management (RSM) is conducting a review of the operation of the Managed Spectrum Park (MSP) and, in conjunction, is considering options for future allocation of spectrum in regional areas. This paper sets out a number of focus areas for both the MSP review and regional/non-national allocation considerations, including some potential options for management/improvement within these areas.

## Part 1) Managed Spectrum Park Review

The MSP is working well for many companies that have gained rights and are providing services. However, the allocation process and technical parameters of licencing have encountered problems and over the ten years of operation, disputes have taken a considerable amount of RSM time and effort to resolve.

The MSP review will take a comprehensive look at the operation of the MSP focusing on key problem areas including feasibility of co-operation, technical licensing parameters, and modification of licenses. The objectives of the review are to consider whether there is a need:

1. To amend the way in which spectrum is allocated in the MSP.
2. To amend requirements for technical license parameters to provide for better use of spectrum.

Options for various allocation methods, as well as changes to technical parameters, will be outlined in this document. We will be interested in your views on which allocation methods would be most appropriate.

We expect the results of the review to be reflected in a new version of the [MSP Allocation Rules](#) and revision to [PIB39](#).

## Part 2) Regional/non-national Allocation Considerations

RSM is anticipating future allocations of spectrum to be used by regional/non-national networks, including Wireless Internet Service Providers (WISPs) networks.

In conjunction with a review of the current MSP, RSM is seeking high-level input on the way in which regional/non-national rights are managed, including:

1. What allocation methods are preferred
2. What implementation requirements are preferred (if any)

The results of this part of the consultation will be reflected in our advice to Ministers on future spectrum allocations.

### Your views

The Ministry wants to hear your views on any of the issues raised in this document, or on any other topics related to the Managed Spectrum Park or regional/non-national spectrum allocation.

Specific questions raised throughout the document are indicated by a white box as follows:

**Question X...**

A summary of questions posed during the document will be provided on Page 12.

# 1 MSP Review

## 1.1 Background

### 1.1.1 Establishment of the MSP

1. The Managed Spectrum Park (MSP) concept was agreed by Cabinet in 2007, with detailed design subsequently approved by the responsible Minister. RSM implemented the MSP in 2010 and continue to manage it on a day to day basis for the Crown, acting by and through Te Tumu Whakarae mō Hikina Whakatutuki - Secretary for Business, Innovation and Employment and Chief Executive, MBIE. Management of the MSP operates in accordance with Park Rules and Allocation Rules.
2. The MSP is a portion of spectrum that was set aside in order to allow users to supply a diverse range of services. The objective of the MSP was to encourage flexibility and innovation by providing a compromise between dedicated spectrum, which is costly, and general user licenses, which do not allow companies control of the quality of service.
3. The MSP was established to be a portion of spectrum set aside to allow innovation and a range of uses. In keeping with that intent, there are no specific requirements or restrictions on the technology used by Licensees. Rather than relying on in-depth technical rules, the MSP is based on an assumption of collaboration as the primary mechanism to allow multiple users within the 'park'. Applicants are encouraged to apply for the minimum bandwidth needed, as the MSP is a shared resource. The rules were designed to exclude companies that hold national rights in adjacent bands (e.g. Mobile Network Operators).

### 1.1.2 Issuance of MSP Licenses

4. The MSP is in the frequency range 2580 – 2620 MHz. It is a Crown-owned Management Right that expires 31 December 2028. RSM, by delegation from the Crown, may grant spectrum licences subject to Licence Agreements, which require compliance with Managed Spectrum Park Rules. These park rules are intended to be enforceable by all Licensees and may be changed periodically.
5. When someone applies for an MSP licence, the details of their application are advertised on the RSM website to allow any other interested parties to submit competing applications. If competing applications for a licence in the same frequency range and geographic area are received, and an agreement cannot be reached by parties to share the spectrum, an elimination ballot process is conducted.

### 1.1.3 Current Licences

6. There are 18 companies currently using the MSP. The majority are WISPs providing services such as broadband internet to their end user clients. Some Licensees have utilised the spectrum for other purposes, such as road traffic monitoring, voice telephony and the control of road traffic signals.

## **1.2 Issues triggering the review**

7. Although the MSP is working well for many companies that have gained rights, it has a reputation as an 'untidy' licencing regime where it can be difficult to do business. The administrative load for RSM is also much greater than was originally envisaged.
8. Our initial thinking on key challenges and issues with the MSP is set out below. Questions and options related to these key challenges and issues will be outlined in the next section.

### **1.2.1 Co-operation is not always feasible**

9. An underlying assumption of the MSP is that cooperation and sharing would be possible, with applicants working together to decide how to split the available resources between them. The 'park' was intended to be self-managed by users, with low compliance for access seekers and low administrative costs for RSM.
10. Although the assumption of cooperation appeared viable at the outset, we have found that it is not always feasible in practice. As broadband data demands have increased, the available bandwidth is no longer adequate for multiple, co-located services. This means that the applicants are unable to reach an agreement on how to split the available resources between them and the allocation process has become a 'winner-takes-all' affair.
11. Barriers to cooperation in allocation of MSP spectrum result in increased focus on the elimination ballot (as opposed to co-operative agreement making) and, despite rules intended to prevent foul play, some attempts to game the ballot elimination system have occurred. For example, related parties applying for the same (or very similar) licenses in the same application round in order to increase their chances of remaining in the ballot.

### **1.2.2 Lack of technical rules**

12. The MSP was designed to encourage innovation, with multiple technologies allowed/expected. To facilitate this there was minimal specification of the licensing rules. Some applicants have taken advantage of this by lodging licences that are very sparse on technical detail, making it difficult for other potential users to determine the extent of spectrum currently in use. This has led to accusations of "spectrum denial". The licensing rules were tightened after a review in 2015 but remain light relative to other shared spectrum bands using a single technology. The rules are still subject to frequent disputes. These disputes have placed some applicants at loggerheads, a situation that is counterproductive to healthy relationships within the sector.
13. As MSP usage is now almost exclusively for broadband services it may be possible to tighten the technical rules, allowing fewer disputes and better use of the available spectrum.

### **1.2.3 Licence modifications**

14. The nature of the MSP allocation process means that licensees often implement something that is different from their initial licence application.
15. The application process requires applicants to enter licensing details such as transmitter location(s), bandwidth, and type of emission. This is necessary for counter applicants to understand what is proposed. However, it would not be sensible for an access seeker to



sign a base station site lease or finalise an equipment order until they have actually secured their licence.

16. In practice the period between initial application and implementation can sometimes be over two years. In the interim, equipment specifications and prices change, and sites turn out to be unsuitable or too expensive. The result can be implementations that do not match the initial application.
17. Sometimes the licences are not amended and the situation only comes to RSM's attention if a third party complains. In other cases, proactive licensees or Approved Radio Engineers will contact RSM and ask for agreement to licence changes. This leaves RSM with the task of determining whether the changes are minor, or if the changes are so significant that the licence needs to be reopened for contestable application.
18. Similar issues arise if licensees later swap-out equipment, change sites, or seek minor coverage expansions. RSM's judgement on these matters has been questioned and, in some cases, complaints lodged.
19. Changes to the allocation process may be required to resolve these issues. In particular, consideration could be given to a process that allows an exclusive right and/or one that would not require pre-commitment to a particular licence configuration.

### **1.3 Options to address the issues**

#### *Options for allocation method*

20. Changes to the allocation process may be required to resolve a number of the issues discussed above, for example:
  - Licensees often implementing something that is different from their initial licence application.
  - Lack of feasibility in cooperation leading to undue emphasis on the elimination ballot.
21. Furthermore, the current negotiate/ballot allocation process is time consuming and may not result in allocation to the party that will put the spectrum to best use. Changes to the allocation process may better reflect the practicalities of the way in which the MSP is being utilised, resulting in a more streamlined, transparent process.
22. Options:
  - Keeping the status quo.
  - Introducing an alternative method of managing sharing between parties.
  - Exclusive allocation in a specific geographic area may provide a solution to lack of co-operation (or infeasibility of co-operation). Exclusive ownership would allow for fewer disputes, reduced risk for gaming of the ballot system, and an allocation process that better reflects the current use of the MSP.
    - i. Restricting new applicants to one 20 MHz block - exclusively allocated (any party with only one block).

- ii. Allocating 40 MHz to one single party

**Question 1:** *Do you think that co-operation is feasible in the Managed Spectrum Park?*

23. If exclusive allocation was the preferred option to fix the issues discussed above, there are a number of methods as follows:
- *Auction.* This method has been used often in New Zealand to allocate high-value spectrum for broadcasting and cellular mobile use. It is also commonly used overseas for allocation of cellular mobile spectrum. An *unrestricted* auction should result in a transparent allocation to the party for which the (private) value of the spectrum is highest. Risks posed are anti-competitive outcomes or opportunistic purchases by speculators. Imposing certain conditions on an auction can limit these risks.
  - *Competitive tender.* Interested parties separately submit offers in a closed process. Spectrum is allocated to the party that submits the best offer. A tender could be assessed on non-price as well as price attributes (also see *Administrative allocation* below).
  - *First in, first served.* Spectrum is allocated to the party that applies first. This method is often used in New Zealand to award radio licences (at no charge, other than the annual licence fee) if there is not a shortage of the relevant spectrum. It is a quick way to allocate spectrum, but unlikely to lead to an efficient allocation of spectrum in cases where there are many competitors for the relevant frequencies.
  - *Lottery.* A random draw is used to allocate spectrum to one of the parties that have expressed interest (there can be a charge). This method has been used in New Zealand to decide on allocation when the “first in, first served” method would otherwise be used but there are competing applicants for the relevant frequencies. This method, on its own, is unlikely to lead to an efficient allocation and is open to exploitation by speculators.
  - *Administrative allocation.* The Government decides which party should receive the spectrum, based on merit (there can be a charge). This method gives the Government a lot of flexibility to incorporate wider policy goals into its allocation decision. A disadvantage is that the process may be less than fully transparent because allocations are the result of the qualitative judgments by officials. Another disadvantage is that the allocation process can also be slow.
24. Depending on the conditions imposed on the allocation methods, the outcomes of different methods may be similar. For example, an administrative allocation that uses price as a criterion alongside other criteria might resemble an auction which imposes qualifying or post-implementation requirements on bidders.

**Question 2:** *When considering MSP spectrum allocations, what allocation method(s) would be preferable to you?*

Options for tightening up technical parameters

25. Given that the majority of the MSP is being used for broadband, we may be able to tighten up technical licencing parameters for licenses. This could mean fewer disputes and better use of the available spectrum.
26. Options for the technical license parameters include:
  - Keeping the status quo.
  - Introducing an alternative method for specifying coverage (other than technological specifications).
  - Specifying a limited set of technologies which could be used, and having licensing conditions which match those technologies.
  - Ensuring that the license only covers serviceable geographic areas.

**Question 3:** *What are your thoughts on the level of technical requirements/rules in relation to MSP licenses?*

## 2 Other Regional/Non-National Allocations

27. MBIE is expecting to allocate other spectrum bands for regional/non-national use in future. Similarly to the MSP, it is important that we find the best way to manage the allocation process, implementation requirements, co-operation, and inter-regional interference for this regional/non-national spectrum.
28. Added concerns include the feasibility of competition at a regional/non-national level, and whether existing service providers should have priority over new entrants when it comes to allocation of new frequencies.
29. Finally, we acknowledge the importance of regional service providers such as WISPs, and aim to protect regional rights for use by these regional service providers. In order to do this we will need to define what constitutes a regional versus national provider. For example is there a threshold for the number of regions held by any one provider before that provider may be considered national?
30. Please consider the following questions in relation to future regional/non-national allocation of spectrum:

**Question 4:** *What are your thoughts on the best method(s) for future regional/non-national spectrum allocations?*

**Question 5:** *Should priority be given to incumbents over new entrants?*

**Question 6:** *Is the market big enough to support sub-regional competition?*

**Question 7:** *Should spectrum allocation rules be used to limit consolidation (mergers or take-overs) of regional players*

**Question 8:** *What are your thoughts on how to protect regional rights for regional use?*

### 3 Summary of questions

Please see below for a summary of the questions posed throughout this document. As previously noted, the Ministry wants to hear your views on any of the issues raised in this document and on any other topics related to the Managed Spectrum Park or regional/non-national spectrum allocation

**Question 1:** *Do you think that co-operation is feasible in the Managed Spectrum Park?*

**Question 2:** *When considering MSP spectrum allocations, what allocation method(s) would be preferable to you?*

**Question 3:** *What are your thoughts on the level of technical requirements/rules in relation to MSP licenses?*

**Question 4:** *What are your thoughts on the best method(s) for future regional/non-national spectrum allocations?*

**Question 5:** *Should priority be given to incumbents over new entrants?*

**Question 6:** *Is the market big enough to support sub-regional competition?*

**Question 7:** *Should spectrum allocation rules be used to limit consolidation (mergers or take-overs) of regional players*

**Question 8:** *What are your thoughts on how to protect regional rights for regional use?*