



NOT GOVERNMENT POLICY

Renewal of Management Rights in the 1800 MHz and 2100 MHz bands

Discussion document

April 2018



Disclaimer

The opinions contained in this document are those of the Ministry of Business, Innovation and Employment and do not reflect official government policy. Readers are advised to seek specific legal advice from a qualified professional person before undertaking any action in reliance on the contents of this publication. The contents of this discussion paper must not be construed as legal advice. The Ministry does not accept any responsibility or liability whatsoever whether in contract, tort, equity or otherwise for any action taken as a result of reading, or reliance placed on the Ministry because of having read, any part, or all, of the information in this discussion paper or for any error, inadequacy, deficiency, flaw in or omission from the discussion paper.

Table of Contents

INVITATION FOR SUBMISSIONS	III
1 INTRODUCTION.....	1
2 CURRENT USE.....	1
2.1 1800 MHz BAND	1
2.2 2100 MHz BAND	2
3 RENEWAL OPTIONS.....	2
4 TERM OF NEW MANAGEMENT RIGHTS	4
5 INCUMBENT LICENCES.....	5
6 SUMMARY OF QUESTIONS.....	6

Invitation for submissions

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 Thursday 24 May 2018** to:

By email: (*preferred option*)

Radio.Spectrum@mbie.govt.nz

Subject line: "Renewal of rights in 1800 MHz & 2100 MHz bands"

Or

By post:

Renewal of rights in 1800 MHz & 2100 MHz bands
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 email, in the first instance Radio.Spectrum@mbie.govt.nz

Publication and public release of submissions

Except for material that may be 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. 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 1993

The Privacy Act 1993 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.

1 Introduction

Management rights for cellular services in the 1800 MHz and 2100 MHz bands expire on 31 March 2021. New Zealand's national mobile network operators (MNOs) use these bands to deliver 2G, 3G and 4G services.

When a management right expires, licences in the management right end and the spectrum reverts to the Crown. Any wireless service using the frequencies covered by the right must cease. There is no legislative obligation for the Crown to grant a renewal of existing rights. However, usual practice has been to offer incumbents renewed rights contingent on the incumbent actively using the spectrum at the time of renewal. No renewal offers are made, or a modified right offered, if:

- there is limited or no use of the existing rights
- there is a public policy reason to do so,
- technology developments require a different configuration of the frequencies, or
- the frequencies are needed to meet New Zealand's international obligations.

Where frequencies are not included in a renewal offer, these frequencies may be competitively allocated, directly allocated to other parties or reserved to allow other uses to emerge.

The Ministry of Business, Innovation and Employment (MBIE) is reviewing the 1800 MHz and 2100 MHz bands. MBIE expects MNOs will want to continue to use these bands to provide cellular mobile services in future. However, there may be other users who wish to have access to this spectrum.

This document seeks comment from interested parties on the future use, renewal and/or re-allocation of the bands. In particular we are seeking feedback from anyone wishing to gain access to these frequencies.

2 Current use

2.1 1800 MHz band

The 1800 MHz band covers the 1710 to 1785 MHz and 1805 to 1880 MHz frequency ranges. The current management rights are configured for frequency division duplex (FDD) use¹. There is currently 2 x 75 MHz available in this band. The band is evenly distributed between the three major MNOs with each holding 2 x 25 MHz (see Figure 1 below).

The 1800 MHz band was initially used for 2G services. 1800 MHz is now the band most commonly used for 4G services worldwide. MNOs repurposed the band for the initial roll out of 4G networks in New Zealand. MBIE understands MNOs use 2 x 20 MHz and, where additional network capacity is required, may use the additional 2 x 5 MHz.

Vodafone still uses a portion of the band for 2G services. Neither Spark nor 2degrees provide a 2G service. Vodafone has committed to retaining a 2G service for Internet of Things devices until 2025.

MBIE expects the band to transition to 5G technology during the term of the renewal rights.

¹ In FDD technologies, separate frequencies are used for the uplink and downlink communications between the cell site and the handset

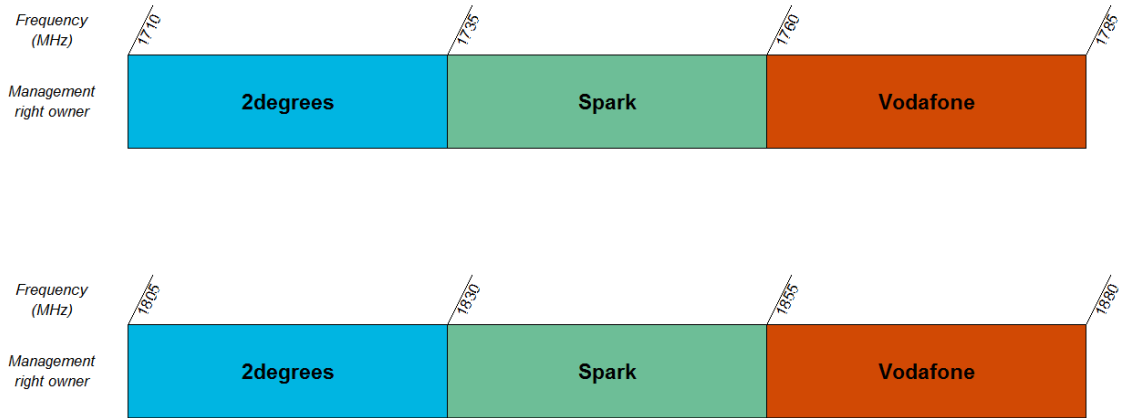


Figure 1: Current allocation in the 1800 MHz band: Vodafone Spark and 2degrees each hold 2 x 25 MHz.

2.2 2100 MHz band

The 2100 MHz band covers the 1920 to 1980 MHz and 2110 to 2170 MHz frequency ranges. Current management rights are configured for FDD use with 2 x 60 MHz available. The three national MNOs each use the band with Vodafone having the largest share. The 2 x 5 MHz held by Telstra Network Services NZ (Telstra) is unused. The distribution of holdings is shown in Figure 2 below.

The 2100 MHz band is mainly used provide 3G services. The level of use varies between MNOs, with the greatest level of use by 2degrees and Vodafone. MNOs are repurposing some of this band to provide 4G services. MBIE expects this band will fully transition to 4G, and possibly 5G, technology in future.

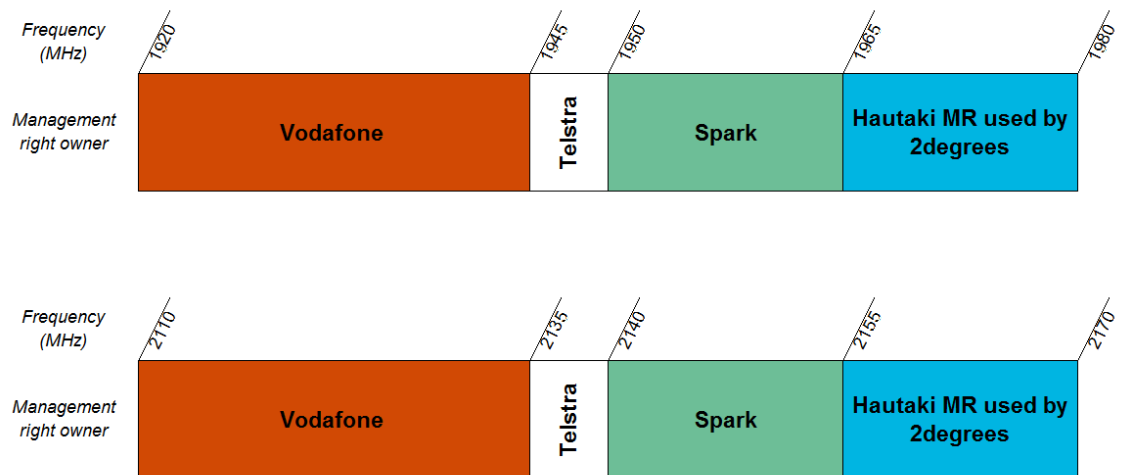


Figure 2: Current allocation of the 2100 MHz band: Vodafone (2 x 25 MHz), Telstra (2 x 5 MHz), Spark and Hautaki (each hold 2 x 15 MHz).

3 Renewal options

As noted above, where management rights are in use, incumbents are typically offered new rights covering the same or similar frequency ranges. We do not expect a renewal offer to be made to Telstra based on the lack of use of its management rights. The government will

decide on the future of the Telstra block in the context of its conclusions about the best use of the band as a whole.

The main options for renewal offers are:

Option 1: Renewal of all existing holdings to incumbents

This reflects the status quo with renewal of all current holdings (except Telstra). Renewal offers would be made at a price set by the government. Direct renewal of all existing holdings effectively locks in the status quo for the duration of the renewal rights. It would provide incumbents the greatest certainty over their future spectrum holdings and competition settings.

Option 2: Partial renewal of existing holdings to incumbents

Renewal offers would be made to incumbents for either 2 x 15 MHz or 2 x 20 MHz in the 1800 MHz band and 2x15 MHz in the 2100 MHz band. The remaining spectrum (either 2 x 15 MHz or 2 x 30 MHz in the 1800 MHz band and 2 x 15 MHz in the 2100 MHz band) could be allocated later.

MBIE would run an allocation process for the remaining frequencies in the bands once the renewal is complete. Decisions on the design of the allocation process would be made closer to expiry in 2021. This would be at a time when the impact of 5G and other spectrum allocations will be clearer. It could also allow time for a new entrant to the mobile market or a new user to emerge.

Partial renewal would provide certainty to incumbents over the spectrum holdings that are renewed, whilst allowing flexibility for the government to respond to changes in the mobile market over the next few years.

Option 3: No renewal of existing holdings to incumbents

All decisions on the allocation of spectrum in the bands would be taken from a first principles basis. Typically in these instances, spectrum is allocated using a competitive allocation process. However, if there are significant public policy reasons to do so, the government may elect to make a direct offer to a new future user or users.

This option provides opportunity for new entrant(s) or new users to gain access to these bands. It also allows the market to determine the optimal spectrum use and price. However, non-renewal provides no certainty to incumbents over their future spectrum holdings. It may be a disincentive for MNOs to invest in their networks at a time when significant new investment will be required to roll out 5G.

Given that all spectrum is in use (excepting the Telstra management right), the key consideration in deciding which option is preferred is whether there is higher value use for the spectrum. That could be demonstrated by immediate demand from other parties (for example through this consultation) or by description of a foreseeable future higher value use. If a higher value use is evident then Option 2 may be preferable. We note that if the prospects for that higher value use or new entrant emerging diminish significantly before 2021 it would still be possible to offer the retained portion to the incumbents.

A competitive allocation for all of the spectrum (Option 3) might be appropriate if it is believed that the value of the spectrum is very hard to determine or if there was another 'high value' use that requires very large bandwidth. MBIE is not convinced any difficulties in setting a value for the bands is an impediment to renewal offers.

We are seeking feedback from industry on these options. We would like to hear your thoughts on whether a new entrant or high value use is likely to emerge prior to 2021 when the rights in these bands expire.

- Q1. Which renewal option is most suitable for the 1800 MHz and 2100 MHz bands? Is the most suitable option different for each of the two bands? Why?**
- Q2. Is your organisation interested in acquiring 1800 MHz and/or 2100 MHz spectrum? If so, what radiocommunication service would you use it for and how much spectrum would your organisation require?**
- Q3. Are the 1800 MHz and/or 2100 MHz bands the most appropriate band(s) for your organisation's use? Why? What alternative bands are suitable for the intended service you expect to provide?**
- Q4. Is a competitive allocation process appropriate to assign some (or all) the 1800 MHz and / or 2100 MHz bands? If not, what other allocation process (excepting direct offer to incumbents) would be more appropriate? Why?**
- Q5. Would your organisation participate in a competitive allocation process (e.g. a spectrum auction) for management rights in the 1800 MHz and 2100 MHz bands? If not, why not?**

4 Term of new management rights

There are a range of options for the term of the new management rights created in the 1800 MHz and 2100 MHz bands.

Option A: Five year term (expiring 2026)

A short term for new management right would allow the future of the band to be reconsidered once there is greater certainty over 5G spectrum allocations and 5G standards. The possible impacts of 5G on the mobile broadband market may become clearer. Over the same period, the extent of MNOs' continued investment in the second phase of the rural broadband initiative (RBI2) will become clearer. It is unlikely that such a short term right would be attractive for any user except the incumbents.

Option B: 10 year term (expiring 2031)

A 10 year term would align the expiry of the 1800 MHz and 2100 MHz bands with other sub 1 GHz bands used by MNOs. Aligning expiry dates of the key cellular mobile bands increases flexibility when allocating spectrum in a multiband renewal in 2031. However, it may impose onerous cash flow demands on incumbents if renewals for several bands occur at the same time.

Option C: 20-year term (expiring 2041)

A long term for new management rights would provide holders with a high degree of certainty and encourage investment in the bands. A longer term is likely to be more attractive for new entrants or new users. It allows less flexibility to change the allocation of spectrum if markets or technology dramatically change.

Option D: custom term

The term of the new rights could be set to allow a targeted review of cellular mobile capacity bands in isolation from other bands. This may be set to achieve a balance between certainty for rights holders and flexibility for government to respond to changes in the market.

In general, a longer term for the new management rights would increase business certainty for the rights owner. However, it also reduces the ability for government to re-plan or re-purpose spectrum as technology or needs change. It may suit users with sufficient capital who aim to enter the mobile market as there would be sufficient time to earn a return on their investment. Any capital constraints could be mitigated by payment terms on longer term rights.

A short term would reduce an organisation's spectrum acquisition costs. However, a short duration may not be desirable for a new organisation or a new use as it may be insufficient time to recoup investment costs. A very short term renewal (Option A) may provide certainty for incumbents during the roll out of 5G and also provide some flexibility for government to respond to changes in the market. It would however lock out any new entrant from the wireless broadband market for a further five years.

A custom term may provide a middle ground between cost and certainty. This option may also support alternative spectrum uses that do not require large sunk costs or extensive spectrum holdings.

Submissions on terms may involve discussion of the options for band renewal (previous section).

Q6. What should the term of the new management rights be? Should they be the same for both bands? Why?

Q7. Do you have a different preference for the management right term for each of renewal options outlined in Section 4? If so, what term should apply to each renewal option? Why?

5 Incumbent licences

When the current 1800 MHz management rights were issued in 2001 some were encumbered with spectrum licences allocated to users that had previously held radio licences in the band. Some of those incumbent licences have subsequently been cancelled by negotiation between the management right owner and the licence holder. Other licences remain, co-existing with the services being offered by the MNOs. A decision about whether these 'incumbent licences' should have continued rights needs to be made as part of the renewal process.

By expiry of the current management rights in 2021 the incumbent spectrum licence holders will have had 20 years of benefit from their pre-2001 licences. The Radiocommunications Act 1989 and Radiocommunications Regulations 2001 do not provide any statutory protection for *spectrum* licences beyond the life of the management right. Under the Regulations (regulation 15D) there is no obligation to provide continuity for *radio* licence holders if at least five years notice is given.

Having already had the benefit of 20 years of additional protection we do not favour extending the 1800 MHz incumbent licences into any subsequent management rights. Holders of those licences will, of course, still be able to seek licences from the new rights owners on commercial terms.

Q8. Should pre-2001 incumbent spectrum licences be extended beyond 2021? If so, why?

6 Summary of questions

1	INTRODUCTION	1
2	CURRENT USE	1
3	RENEWAL OPTIONS	2
	Q1. Which renewal option is most suitable for the 1800 MHz and 2100 MHz bands? Is the most suitable option different for each of the two bands? Why?.....	4
	Q2. Is your organisation interested in acquiring 1800 MHz and/or 2100 MHz spectrum? If so, what radiocommunication service would you use it for and how much spectrum would your organisation require?	4
	Q3. Are the 1800 MHz and/or 2100 MHz bands the most appropriate band(s) for your organisation's use? Why? What alternative bands are suitable for the intended service you expect to provide?	4
	Q4. Is a competitive allocation process appropriate to assign some (or all) the 1800 MHz and / or 2100 MHz bands? If not, what other allocation process (excepting direct offer to incumbents) would be more appropriate? Why?	4
	Q5. Would your organisation participate in a competitive allocation process (e.g. a spectrum auction) for management rights in the 1800 MHz and 2100 MHz bands? If not, why not?.....	4
4	TERM OF NEW MANAGEMENT RIGHTS	4
	Q6. What should the term of the new management rights be? Should they be the same for both bands? Why?	5
	Q7. Do you have a different preference for the management right term for each of renewal options outlined in Section 4? If so, what term should apply to each renewal option? Why?	5
5	INCUMBENT LICENCES	5
	Q8. Should pre-2001 incumbent spectrum licences be extended beyond 2021? If so, why?	5