

Managed Spectrum Park Review and Regional/Non National Allocation Discussion Document

Radyo Solutions Ltd Submission

1. Introduction

1. This is a submission by Radyo Solutions Limited on the Managed Spectrum Park Review and Regional/Non-National Allocation discussion document issued on 01-June-2021 initiated by Radio Spectrum Management.
2. This submission on covers questions 1,2 & 3 relating to the Managed Spectrum Park in the discussion document.
3. Radyo Solutions Limited provides MSP licensing services to several Wireless Internet Service Providers.

2. Feasibility of Cooperation within Managed Spectrum Park (Question 1)

2.1 Regional Spectrum Availability

4. To extent Radio Spectrum Management is asking the wrong question with respect to the feasibility of cooperation within the Managed Spectrum Park. The primary issue is the lack of availability of licensed spectrum to regionally based WISP type organizations.
5. The total quantity of license spectrum available to nationwide management right holders by comparison to regionally allocated spectrum is shown in Table 1.

Table 1 - Nationwide Management Vs Regional Managed Spectrum Parks

Category	Quantity of Spectrum (MHz)
Nationwide Spectrum Management Rights	2544.97
Regional Managed Spectrum Parks	40.00

6. There is thus an extremely limited quantity of licensed spectrum available to WISP type organizations. It is generally at least somewhat infeasible to further split this limited resource by means of a spectrum sharing agreement as is envisaged by the current park system.

7. The solution is to make more spectrum available to WISP type organizations on a regional basis.

2.2 Spectrum Sharing Agreements

8. In the period 2010 to 2021 the implementation of five spectrum sharing agreements was directly observed. The outcomes are listed below.
 - a. In one case one of the parties deployed a technology that was not compliant with the requirements of the spectrum sharing agreement, blocking the other party from deployment.
 - b. In four cases one of the parties either failed to implement service or otherwise cancelled the MSP licenses.
9. Following the observation of these cases it became apparent that spectrum sharing agreements were not worth the time and effort to negotiate. In 80% of observed cases one or other of the parties did not deploy a network.
10. Furthermore, the RSM policy with respect to spectrum sharing agreements is that they are private contracts between the two participating MSP license holders. Thus, any disputes between the two license holders become a purely commercial issue and RSM is not involved.
11. This situation would possibly improve if RSM allowed the contents of the spectrum sharing agreement to be included as special conditions within the MSP license. This would make such conditions legally binding.
12. Such a change in RSM policy may make spectrum sharing more feasible. This would be particularly so if additional spectrum is made available to WISP organizations within a Managed Spectrum Park context.

3. Allocation Methods (Question 2)

3.1 Eligibility

13. Prior to considering the desirability of alternative allocation methods for the Managed Spectrum Park it is first necessary to consider what the eligibility criteria will be for applicants.
14. The eligibility criteria should attempt to achieve two objectives:
 - a. To preserve the spectrum for organizations that do not have access to nationwide spectrum.

- b. To prevent any one organization from controlling all or a significant portion of the regional spectrum allocations.
15. The current eligibility criteria need to be enhanced to facilitate the functioning of the Managed Spectrum Park. The following enhancements are suggested:
- a. Government agencies & local government organizations and associated entities should, not eligible to apply for licenses within the Managed Spectrum Park.
 - b. Access to any nationwide management right (not just those in the 2.3GHz and 2.5GHz bands) should render an applicant ineligible to apply for licenses within the Managed Spectrum Park.
 - c. Organizations that are publicly listed companies should be ineligible to apply for licenses within the Managed Spectrum Park.
16. The current association criteria should also be maintained. These criteria are essentially the same as those used when determining eligibility to participate in the allocation process for nationwide management rights. These are tried and tested criteria that prevent associated organizations dominating any allocation process.
17. With respect to the proposed restriction on government agencies and local government organizations participating in the MSP, the history of these organizations is not particularly glorious. A summary, is given below.
- a. A New Zealand government agency obtained spectrum in the MSP. The spectrum was subsequently leased to a 3rd party (this is prohibited by the MSP contract). The government agency in question appeared to have associations with other MSP license holders running a similar application. This appeared to contravene the acquisition limits within the MSP rules. The agency agreed to voluntarily relinquish its licenses when a complaint was made.
 - b. A regional council made an application to obtain spectrum within the MSP. The regional council's equipment supplier also made an identical application. Correspondence between the two parties indicated that the applications were an attempt to "stack the ballot" or to quote the correspondence "get two straws in the draw". Both sets of applications were withdrawn when the complaint was investigated by RSM.
 - c. A unitary authority council made an application and obtained MSP spectrum. The spectrum was subsequently leased to a 3rd party (this is prohibited by the MSP contract). The licenses are to be cancelled shortly.
18. With respect to the proposed restriction on listed companies participating in the MSP. It is submitted that any listed company probably possesses the resources to access nationwide spectrum if desired.

3.2 Allocation Method

19. If the above modifications were made to the eligibility criteria, then maintaining the status quo with respect to the Managed Spectrum Park is advocated.

4. Managed Spectrum Park Technical Requirements (Question 3)

4.1 Technical Licensing Parameters

20. The requirements for licensing within the MSP are already considerably more stringent than those required of the operators within the adjacent national management rights.
21. As an is example management right 481 which within the same 2.6GHz band as the Managed Spectrum Park. The owner of this management right has specified 486 geographic base station locations at which the spectrum is in use.
22. These licenses all specify completely omnidirectional radiation patterns with unknown equipment types, unknown antenna types and protection areas defined as a simply geometric shape (four points).
23. The only information that can be derived from such a license is that there is a transmitter present at a particular location.
24. The purpose of this commentary is not to be critical of the licensing regime within nationwide management rights. However, the process and speed at which national operators can obtain base station licenses puts WISP operators at a disadvantage.
25. It is acknowledged that within the MSP there is a need for more detail within the licenses by comparison to those in a nationwide management right. This is to enable proximal coordination. However, the current licensing regime appears to be about right.
26. The net effect of making the MSP license requirements more stringent than they currently are, would be to drive an administrative burden onto WISP's to continuously modify licenses via the form 8 process, when conducting what would ordinarily be minor operational adjustments.
27. To be specific there is a need for MSP licenses to have the following characteristics:
 - a. A horizontal radiation pattern that allows a degree of flexibility with respect to precise sector orientation and antenna type.

- b. A radiated power level that allows for a degree of flexibility with respect to updates and enhancements to equipment.
28. The current technical licensing parameters appear to be fit for purpose.

4.2 Spectrum Denial

29. With respect to the comment in the discussion document that spectrum denial is occurring within the MSP. If a prospective applicant genuinely believes that spectrum denial is occurring, then there is a defined interference risk notice and arbitration process within the current rules that may be utilized.
30. The fact that this process has not to date been genuinely used suggests that spectrum denial within the MSP is not a significant issue.
31. There is a view, currently being espoused, that any flexibility present in an MSP licenses is evidence of spectrum denial.
32. As mentioned above if a prospective applicant has a belief that spectrum denial is occurring then the defined interference risk notice and arbitration process may be activated.
33. However, any such applicant should note that the park rules require that the arbitration process to specifically consider *“whether the Licensee is making sufficient use (or has viable plans to make sufficient use) of the Licences” [writers emphasis]*. Thus it is possible for the arbitration tribunal to consider the incumbent licenses holders future plans for license usage with the current rules.

5. Summary

34. With respect to the Managed Spectrum Park questions the following is a summary:
- a. Cooperation within the MSP would be more feasible if the requirements of a spectrum sharing agreement could be encapsulated as spectrum license conditions;
 - b. Cooperation within the MSP would be more feasible if more spectrum was able to accessed by this method (not necessarily just in the 2.6GHz band);
 - c. The current MSP allocation method should be maintained but the eligibility criteria should be tightened;
 - d. Tightening the MSP technical licensing criteria simply drives an administrative burden on to WISP's;
 - e. MSP licenses require a degree of flexibility to cope with operational needs.; &

- f. The existing Interference Risk Notice and arbitration process are adequate to deal with spectrum denial (if any exists).