

One NZ submission on Radio Spectrum Management consultation regarding the allocation of 24–30 GHz spectrum

12 December 2025

Introduction

1. We welcome the opportunity to comment on the Radio Spectrum Management's (RSM) consultation regarding the allocation of 24–30 GHz spectrum. We acknowledge that RSM is managing a range of competing interests in developing an appropriate allocation framework.
2. We note Cabinet has already decided to:
 - a. Allocate the 26 GHz frequency band primarily to mobile service use, with the option to include some satellite services (e.g. Earth Exploration Satellite Service (EESS) and Space Research Service (SRS) (space-to-Earth)) in specific areas under technical conditions; and
 - b. Allocate the 28 GHz band across two portions:
 - i. 27.5 – 28.35 GHz (**lower 28GHz band**): to be shared between mobile and fixed-satellite services with an appropriate sharing model; and
 - ii. 28.35 – 29.5 GHz (**upper 28GHz band**): to be allocated primarily for satellite services, with the option to include some mobile use under technical conditions.
3. We acknowledge that RSM is not seeking further feedback on Cabinet's decision. However, we reiterate our strong view that the lower 28GHz frequency range should be preserved and made available to support mobile, FWA and private network use, rather than being effectively pre-empted for satellite and non-MNO private deployments. This reflects our view that allocation of the lower 28GHz frequency range for alternative uses such as satellite effectively forecloses mobile, FWA and private network use cases that are likely to emerge in the future. Emerging use cases could well be best suited to spectrum within this range, and the opportunity they present could be lost if it cannot be made available as they emerge.

4. This submission sets out One NZ's views on RSM's proposed overall strategy for the allocation of mmWave spectrum for mobile and satellite use. In summary:
- a. One NZ supports RSM's proposal to delay actual allocation of the 26 GHz band until approximately 2028–2030. Globally, mobile use cases for mmWave are still emerging and demand will take time to materialise. Deferring allocation avoids forcing MNOs to commit capital too early and diverting investment from current national priorities such as continued 5G rollout in the 3.5 GHz band and enhancing existing networks to meet increasing capacity constraints.
 - b. We consider that demand from the mobile industry for mmWave spectrum will steadily grow and that both the 26 GHz and 28 GHz bands will become important components of New Zealand's future mobile, FWA and private network ecosystem. There will be use cases even if we cannot specify precisely when each use case will emerge or at what scale. The Government's mmWave spectrum strategy therefore needs to be nuanced, flexible and staged. In practice, this would mean:
 - i. starting the necessary preliminary work for the allocation of the 26GHz band now so that, if mobile demand emerges earlier than expected, RSM can move quickly to assign mmWave spectrum to MNOs;
 - ii. enabling targeted FWA and private network deployments (including those delivered by MNOs) in the lower 28GHz band as soon as practicable, based on clear technical rules.
 - iii. keeping options open for future wide-area/national mobile deployments in the 26GHz band by not prematurely fragmenting or giving away key spectrum blocks for satellite use. Instead, RSM should retain flexibility to make decision that will best support specific uses as they emerge;
 - iv. preserving the option to allocate up to 1GHz of mmWave spectrum for each MNO in the 26GHz band in contiguous 200MHz blocks to support 5G/6G evolution and align with leading international practice; and
 - v. not treating mmWave allocation as a revenue generating exercise by either i) creating artificial spectrum scarcity for the mobile sector by allowing satellite operators to access the 'shared' lower 28GHz spectrum cheaply and ahead of mobile operators; and/or ii) allocating 26GHz spectrum via auction rather than other more efficient methods such as direct allocation.
 - c. We are concerned that the proposed approach for mmWave allocation does not provide equivalent treatment for mobile and satellite operators and, in the context of increasing competition and convergence between these sectors, risks unintentionally

favouring satellite. There is no economic rationale for an approach that favours satellite providers and delivers an effective cross-subsidy from domestic MNOs (where they pay a higher price to access spectrum than international satellite operators). Any such cross-subsidy operates to distort competition between these groups in the provision of networks (with spectrum being the critical network input). This distortion will ultimately affect each domestic MNO's investment decisions in areas beyond spectrum access, likely to result in outcomes that are not in the best interests of end users of telecommunications services in New Zealand. This could include decisions to forego investment in uplifting resilience, improving capacity, upgrading equipment or investing in new innovation or services. The Government's spectrum strategy should, where feasible, prioritise domestic operators that invest in nationwide networks and are fully subject to New Zealand's regulatory, economic and security frameworks.

5. Responses to technical questions are set out at the end of this submission.

Allocation of 26GHz frequency band

6. Cabinet has decided that the 26 GHz band will be allocated primarily for mobile service use, with the option to include some satellite-based services (e.g. EESS and SRS) under technical conditions.
7. One NZ supports RSM's proposal to delay allocation of 26MHz spectrum for mobile use until approximately 2028-30. This is consistent with current demand and avoids premature capital commitments. However, while mobile use cases for mmWave are limited today, international developments are progressing rapidly and new applications are emerging at pace. We are confident that mobile use cases for 26 GHz will materialise, but the precise timing remains uncertain. To avoid delays when that demand does arise, we recommend that RSM commence preliminary planning work now. Early planning would enable spectrum to be allocated more quickly if mobile use cases develop sooner than anticipated.
8. RSM proposes that assignment of the 26GHz frequency band should be on a geographic area basis (e.g. urban areas) and that a national basis (i.e. all New Zealand) is not appropriate. RSM's rationale for recommending against nationwide management rights is that wide-area mmWave coverage is unlikely, and national rights may leave some areas under-utilised. We consider this conclusion premature, given that mmWave mobile use cases are still in the early stages of development. It is too early to determine with certainty that nationwide management rights will not be required or desirable in the future.
9. One NZ believes that national-scale use cases will emerge over time, and that the 26 GHz band should ultimately be allocated for mobile use on a national basis. National

management rights support more efficient network design, planning, and operation. By contrast, allocating this spectrum on a regional basis would likely:

- a. Create interference and coordination challenges, affecting services delivered both within and beyond an operator's allocated regions, which would impact service quality for end users;
 - b. Slow and substantially complicate the deployment of applications that use mmWave spectrum;
 - c. Constrain enhancements to mobile and FWA services; and
 - d. Impose extra administrative and compliance costs that ultimately flow through to end users.
10. National allocation could be accompanied by appropriate 'use-it-or-lose-it' obligations, with an option to allocate sub-nationally in this scenario. This would preserve flexibility for MNOs to respond dynamically to rapidly increasing capacity demands and evolving use cases, while ensuring that spectrum is not warehoused and remains available for productive use.
11. For these reasons, Government should avoid foreclosing the option of nationwide allocation at this early stage. We recommend that:
- a. RSM recognises that national mobile use cases may emerge, even if their timing is currently uncertain; and
 - b. decisions on national versus regional licensing be deferred until closer to the point of allocation (2028–30), so they can be informed by more developed technology, clearer demand signals, and international deployment experience.
12. Although decisions on allocation terms will not be made at this stage, One NZ's strong preference is that 26 GHz spectrum be allocated for a 20-year term, in contiguous 200 MHz blocks, up to 1 GHz per operator. While the consultation touches on auctions and other allocation mechanisms, we encourage the Government not to treat mmWave spectrum as a revenue-generating tool. As we have consistently made plain to RSM, the sector is increasingly capital constrained while facing a range of competing demands for investment. Every dollar spent on an auction is a dollar that cannot be invested in delivering tangible improvements to New Zealand's connectivity and digital infrastructure: the things that end users want or value. In contrast, an allocation method that sees spectrum directly allocated in return for an operator committing to specific investments by a deadline will unlock outcomes that have substantial value to end users in New Zealand: more resilient connectivity, increased network capacity or the expansion of coverage etc. While spending capital in order to win an auction undermines the business case for such investments, direct

allocation tagged to an investment assures it. A direct allocation approach should be considered. Direct allocation:

- a. provides an efficient means for Government to support policy outcomes such as improved rural connectivity and network resilience;
- b. reduces transaction and participation costs for operators; and
- c. provides greater certainty for long-term investment.

Allocation of the 27.5 – 28.35 GHz frequency range

13. Cabinet has decided that the lower 28GHz frequency band is to be shared between mobile and fixed-satellite services with the appropriate sharing model. Under RSM's current proposal, satellite operators would be given access to this spectrum now while allocation for mobile use would be delayed until after 2028-30. We do not support this approach. Providing satellite operators with early priority access to the lower 28 GHz band would:

- a. Allow satellite operators to pre-empt a substantial portion of the usable spectrum in this band, leaving limited or potentially no practical opportunity for mobile use in future; and
- b. Risk forcing the entirety of mobile mmWave demand into the 26 GHz band, creating artificial scarcity and driving inflationary pressure on 26 GHz spectrum prices.

This outcome would undermine spectrum efficiency, reduce competitive neutrality between mobile and satellite services, and compromise long-term policy flexibility.

14. We also do not support the proposal to prevent future 26 GHz right-holders from acquiring lower 28 GHz spectrum (and vice versa). Such restrictions would unnecessarily constrain network architecture choices, limit the ability of MNOs to design integrated FWA and private network solutions, and distort competition.

15. Instead, One NZ recommends a staged and more nuanced approach to allocating the lower 28 GHz band:

- a. **Allocate lower 28 GHz now for FWA and private networks**, including those delivered by MNOs. This would allow New Zealand to benefit immediately from deployment models already being used internationally (e.g., in the US) without waiting for nationwide mobile mmWave requirements to mature.
- b. **Do not structurally exclude future 26 GHz right-holders from accessing lower 28 GHz.** The two bands serve complementary purposes: lower 28 GHz is well suited to FWA and private network deployments, while 26 GHz provides a broader capacity layer for mobile. A framework that prohibits 26 GHz licensees from accessing lower 28 GHz

would compromise efficient spectrum use and limit competitive delivery of private network offerings.

- c. **Do not allocate lower 28 GHz to satellite operators on long-term or preferential terms until the band is available for mobile.** Any satellite access should be structured on a sharing basis that explicitly preserves future mobile use. Granting satellite operators effectively unconstrained, low-cost access now would carry a material risk that mobile deployment in this band becomes infeasible later.

- 16. RSM notes that 40.5 – 43.5 GHz may be considered for future 5G/6G mmWave mobile if there is more demand for bandwidth in the future. Our view is that this band should not be treated as a simple substitute for 26 GHz and lower 28 GHz. The propagation characteristics, equipment ecosystem and global harmonisation for 40+ GHz are different and less mature. Relying on this band as the ‘pressure valve’ for mobile would be risky and could increase deployment costs in New Zealand.

Terms of spectrum allocation to satellite operators

- 17. One NZ is concerned that the proposed approach does not provide equivalent treatment for mobile and satellite operators and, in the context of increasing competition and convergence between these sectors, risks unintentionally favouring satellite services. RSM’s proposed settings appear to advantage satellite operators in two key respects:
 - a. priority access to portions of the 27.5 – 28.35 GHz band ahead of mobile operators, despite mobile deployment being envisaged in this range in future; and
 - b. allocation terms, particularly the approach to spectrum charges, under which satellite operators would pay only administrative fees while MNOs face substantial spectrum acquisition costs.
- 18. RSM proposes that satellite operators continue to pay only administrative licence fees for mmWave spectrum, including shared bands such as 27.5 – 28.35 GHz, on the basis that domestic satellite demand is unlikely to exceed supply.
- 19. One NZ does not agree that the traditional model of minimal spectrum charges for satellite operators is appropriate in a market where satellite and mobile services are increasingly converging and competing. RSM’s own analysis acknowledges that there is increasing spectrum demand from GSO/NGSO satellite networks, as well as for EESS (space-to-

Earth)/SRS (space-to-Earth) and the importance of 27.5 – 28.35 GHz spectrum to FSS systems.¹ In addition, RSM's proposal to allocate mmWave spectrum to satellite operators ahead of mobile is in itself indicative of the fact that meaningful demand from satellite operators exists.

20. When combined with the delay in mmWave allocation for mobile, a continuation of a low- or no-fee regime for satellite operators carries a significant risk that satellite providers will occupy a large share of usable mmWave spectrum before mobile allocation occurs. This would lead to artificial scarcity for mobile services, likely driving higher spectrum prices for MNOs and undermining the objective of keeping mobile services affordable and widely available to New Zealanders.
21. Providing satellite operators with access to valuable spectrum at minimal or no cost also creates a distorted competitive environment. Historically, satellite and mobile operators served distinct markets. However, today satellite operators are increasingly offering services that compete directly with mobile and fixed wireless offerings. This convergence trend will continue and is likely to accelerate.² In such a context, applying materially different allocation and pricing terms risks disadvantaging domestic MNOs and ultimately New Zealand consumers.
22. For these reasons, One NZ recommends that:
 - a. satellite operators in mmWave bands – particularly where there is or will be overlap with mobile – pay for spectrum on substantially similar terms to those applying to MNOs; or
 - b. if the policy intent is to treat mmWave/high-frequency bands differently (e.g. to promote innovation), **MNOs should receive equivalent treatment** in those bands, such as exemption from or significant reduction in spectrum charges in these bands.

¹ Radio Spectrum Management, *Allocation of 24-30 GHz Spectrum, Technical discussion document*, 17 October 2025, pp. 24, 33, 43

² [IEEE Xplore Full-Text PDF:](#)

23. The Government should be cautious not to inadvertently create a spectrum management framework that favours overseas operators over domestic providers who invest heavily in nationwide networks and are fully subject to New Zealand's regulatory, economic and security frameworks. Previous allocation decisions illustrate the potential for spectrum to remain unutilised despite having significant value to local operators.³ New Zealand's mobile networks continue to face rapidly increasing demand and capacity pressures, and we expect this trend to continue. To support long-term investment and maintain world-class connectivity, the Government's spectrum strategy needs to: i) maximise access to spectrum for mobile use, ensuring operators can meet growing national capacity needs; and ii) provide long-term regulatory and allocation certainty, enabling sustained private-sector investment in critical digital infrastructure.

Responses to technical questions

1. Do you agree with RSM's proposed new spectrum uses outlined in Section 1.1? If not, provide details on the modifications you wish to propose with appropriate reasoning.

One NZ agrees in principle with the proposed uses outlined in Section 1.1. We emphasise that the 26 GHz band (24.25 – 27.5 GHz) should be allocated primarily for mobile use, with EESS, SRS and RAS operating on a secondary basis. Any licences offered for satellite-related uses in this band should be secondary to mobile services and must not constrain or limit the deployment of mobile networks.

2. Do you agree with RSM's assessment of the impact on existing users within 23.6 – 24 GHz, 24 – 24.25 GHz and 24.25 – 27.5 GHz, including the proposed technical and operational considerations, as well as technical conditions for the protection of EESS (passive) and potential RAS use in 23.6 – 24 GHz from future Mobile Service emissions in the adjacent 24.25 – 27.5 GHz band? If not, please provide further specific technical details and rationale, including technical studies.

³ Acquisition of 2600MHz spectrum by DenseAir, which remained unused until purchased by One NZ, is a recent example.

One NZ agrees with RSM's assessment of the impact on existing users in these bands and does not object to the proposed technical conditions to protect EESS (passive) services. We note that these conditions are expressed as unwanted emissions limits that will primarily be addressed by equipment vendors. We therefore urge RSM to carefully consider submissions from network equipment vendors and user device manufacturers to ensure that any conditions are technically feasible and economically reasonable.

3. Are you aware of other locations apart from those listed in Table 3 which would be likely be used for RAS within New Zealand? If so, please provide details of these locations including the technical and operational parameters of the RAS receiver along with supporting material showing firm plans to establish a site at these locations.

No.

4. Are there any further application/system details you wish to provide which qualifies as an existing user?

No.

5. Do you agree with RSM's understanding of the spectrum requirements and key usage scenarios for enabling different services and applications (e.g., Mobile Service, EESS and SRS) in 24.25 – 27.5 GHz?

One NZ considers RSM's estimate of mobile spectrum requirements in the 26 GHz band to be conservative. As we have submitted previously, the mobile industry's view is that 800 MHz – 1 GHz should be allocated to each mobile operator to support future mobile use cases. This is consistent with international practice; for example, Ofcom has allocated 800 MHz in 26 GHz and 1 GHz in the 40 GHz range to each MNO in the UK. We propose that at least 800 MHz – 1 GHz in the 26 GHz band be reserved and allocated to each MNO in New Zealand.

6. What are your spectrum estimates for the use of Mobile Services, EESS and SRS in 24.25 – 27.5 GHz which you wish to implement or use? Present a technical analysis with appropriate justification.

One NZ, together with other MNOs, has previously provided views and justification on spectrum requirements in this band. We consider that 800 MHz – 1 GHz per mobile operator will be required to enable new and future use cases. This range is consistent with allocations made in other countries, including the UK, where 800 MHz in 26 GHz and 1 GHz in 40 GHz have been allocated to each MNO.

7. Can you provide a link budget of a system which you plan to operate in 24.25 – 27.5 GHz, which will assist RSM to better plan, allocate and assign this frequency range?

A typical link budget for mobile network design depends on a range of parameters, including intended use cases, equipment characteristics and the RF environment. As mmWave use cases are still being developed, it is too early to define a meaningful link budget. One NZ will be able to provide

a more realistic link budget closer to the allocation date, based on updated assumptions, which will be more useful for spectrum and network planning.

8. Do you plan on operating mobile systems that are not standardised by 3GPP? If so, what type of equipment do you plan to operate and what are its technical characteristics? Where possible, please provide the relevant supporting technical documentation.

One NZ does not currently plan to deploy or operate non-3GPP-standard systems using this band.

9. Does the mobile BS and UE you wish to operate within 24.25 – 27.5 GHz have unwanted emissions falling within 23.6 – 24 GHz of –39 dBW/200 MHz for BSs and –35 dBW/200 MHz for UEs? If so, could you provide details of the unwanted emission mask as a function of frequency? If not, could you provide the unwanted emissions limits of the equipment you wish to operate with the necessary technical justification?

One NZ has not yet selected mobile BS equipment or UEs for this band and therefore does not have detailed specifications for unwanted emissions. We suggest that network equipment and UE vendors be consulted directly on these parameters.

10. Does the mobile BS you wish to operate meet the –60 dBW/MHz Category B spurious emissions limit from Recommendation ITU-R SM.329? If not, what do you propose for the necessary protect EESS (passive) receivers in 50.2 – 50.4 GHz and 52.6 – 54.25 GHz from the second harmonic of mobile BS emissions within 24.25 – 27.5 GHz?

As above, One NZ has not yet selected mobile BS equipment for this band and therefore does not have details of spurious emission performance. We recommend that network equipment vendors be consulted regarding compliance with the –60 dBW/MHz Category B limit and any related technical measures.

11. Do you agree with our 5% quantification for the use of the terms “very limited” number of BSs operating in 24.25 – 27.5 GHz that are expected to communicate with a positive elevation angle towards indoor mobile UEs? If not, what technical modifications would you suggest to this quantification?

One NZ does not object to the use of a 5% threshold for quantifying a “very limited” number of BSs.

12. For mobile system deployments envisaged in 24.25 – 27.5 GHz, what are the typical range of values for electrical and mechanical tilts which you intend to use? Do these parameters relate to the deployment environment (i.e., urban, sub-urban, etc)? If so, provide details of the relationship.

Electrical and mechanical tilt values depend heavily on intended use cases, equipment characteristics and the surrounding RF environment. As mmWave use cases are still evolving and no equipment has yet been selected, it is too early to define these parameters. One NZ will be able to provide more detailed information closer to the time of allocation and deployment.

13. How would you mathematically characterise the term “normally” pointing the BS below the horizon, as quoted in “resolves 2.1” of Resolution 242 (WRC-19)?

One NZ does not object to RSM’s proposed interpretation of “normally” pointing the BS below the horizon as set out in the consultation.

14. What would be your mobile BS’s typical elevation beam steering range and would the composition of the BS antenna array cause grating lobes to occur? If so, would you be able to quantify the direction and magnitude of these grating lobes?

One NZ does not have this information at this stage, as network equipment for this frequency range has not yet been selected.

15. What type of TDD synchronisation options would you prefer and why? Do you prefer to have a default frame structure? What do you consider the underlying technical conditions to manage the any potential interference should be?

One NZ considers that TDD synchronisation options should be determined collectively by the industry and key stakeholders. RSM should facilitate industry discussions and, if necessary, mandate a specific synchronisation option if consensus cannot be reached, to ensure effective interference management.

16. Do you agree with RSM’s assessment on the need to design exclusion areas around the proposed EESS and SRS (space-to-Earth) sites in 25.5 – 27.0 GHz to protect them from aggregate Mobile Service emissions in 24.25 – 27.5 GHz? If not, what other technical alternative(s) would you suggest?

One NZ does not object to appropriately designed exclusion areas around EESS and SRS sites in the 25.5 – 27.0 GHz band to protect these services. However, we propose that:

- a. Exclusion zones should be calculated using reasonable, industry-accepted methods and parameters and should not be artificially inflated beyond what is required for real interference scenarios; and
- b. Any new EESS or SRS sites should be located as far as practicable from areas where mobile coverage in this band is likely to be required, in order to minimise the impact on the primary mobile use of the 26 GHz band.

17. Do you agree with RSM’s assessment of the licencing framework for EESS (space-to-Earth) and SRS (space-to-Earth) anticipated to operate in 25.5 – 27 GHz? If yes, provide your reasoning. If no, which other alternative would you suggest to licence these services and why?

One NZ does not object to the proposed licensing framework for EESS and SRS. However, we urge RSM to ensure that protection criteria are reasonable, aligned with best practice in comparable jurisdictions, and do not unduly constrain the deployment of mobile services in this band. As above,

we also propose that new EESS and SRS sites be located away from areas likely to require mobile services.

18. Do you agree with RSM's assessment of the licencing framework for RAS operating in 23.6 – 24 GHz? If yes, provide your reasoning. If no, which other alternative would you suggest to licence these services and why?

One NZ considers RSM's proposed licensing framework for RAS operations in 23.6 – 24 GHz to be practical and reasonable, and agrees with the proposal.

19. Do you agree with RSM's proposed new spectrum uses within 27.5 – 28.35 GHz, noting the growing demand for FSS (Earth-to-space) GSO and NGSO gateways and user terminals?

One NZ does not object to the proposed spectrum uses for the 27.5 – 28.35 GHz band, subject to our broader comments that mobile services – including private networks delivered by MNOs – should have access to this band and that MNOs should not be structurally excluded.

20. Do you agree with RSM's assessment of the impact on existing users, including the sharing and compatibility scenarios, considerations and overall conclusions in the form of conditions to be met for the protection of existing users such as individually licenced FSS GSO and NGSO Earth stations, as well as FSS satellite receivers operating within 27.5 – 28.35 GHz? If not, please provide further specific technical details and rationale.

One NZ agrees with RSM's assessment of the impact on existing users, and with the proposed sharing and compatibility conditions within the 27.5 – 28.35 GHz band.

21. Is there any further application/system details you wish to provide which qualifies as an existing user? If so, please provide the details, including any relevant technical information.

No.

22. Do you agree with RSM's understanding of the spectrum requirements for enabling different services and applications, e.g., FSS (Earth-to-space) and Mobile Service in 27.5 – 28.35 GHz?

One NZ does not disagree with RSM's understanding of the spectrum requirements for enabling services in the 27.5 – 28.35 GHz band, but notes our broader concerns regarding access by MNOs and the need to preserve options for mobile use.

23. What are your spectrum estimates for FSS (Earth-to-space) and Mobile Services (including their applications) which you wish to implement or use in the 27.5 – 28.35 GHz range?

One NZ has no additional comments on this question.

24. Can you provide a link budget of systems which you plan to operate in 27.5 – 28.35 GHz, which will assist RSM to better plan, allocate and assign this frequency range?

As noted previously, One NZ would be able to provide a more realistic link budget closer to the time of allocation, once use cases and equipment parameters are better defined.

25. Can you provide further insights into the typical metrics and calculation methodologies often used for GSO to GSO, GSO to NGSO and NGSO to NGSO FSS coordination? In doing so, given an application, how can we ultimately determine the amount of spectrum an FSS operator can ultimately use relative to another, while respecting the provisions contained in Article 9 of the ITU RR? RSM encourages you to share as much detail as possible.

One NZ has no comments on this question.

26. Do you agree with the geography-based by area type option of sharing the 27.5 – 28.35 GHz frequency range between FSS (Earth-to-space) and Mobile Services, as detailed in Option 1? If not, please propose alternatives with the required details for RSM's consideration.

One NZ does not agree with Option 1 as proposed. However, we would not object to Option 1 if mobile services are allowed to operate in medium and low urban accessibility areas, as well as remote and very remote areas, at least on a secondary basis.

27. Do you agree to divide Option 1 by Part A and Part B by using the Statistics New Zealand defined area accessibility criteria? If not, please suggest an alternative criterion which RSM could use?

One NZ does not object to the use of the Statistics New Zealand area accessibility criteria for dividing Part A and Part B.

28. In accordance with Part A of Option 1, do you agree that L-ESIMs should not be permitted inside major, large, medium, small urban areas and high urban accessibility areas? If not, please provide an alternative with a detailed explanation.

One NZ's view is that L-ESIMs should not be permitted to operate in 27.5 – 28.35 GHz in any area of the country, as such services could interfere with mobile services operating in this band.

29. To facilitate the use of the Mobile Service in accordance with Option 1, do you have any suggestions on how RSM could implement coordination of mobile BSs with FSS (Earth-to-space) GSO and NGSO gateways and user terminals? In particular, which coordination trigger and methodology should RSM use (including any relevant reasons)?

One NZ considers that the coordination mechanisms proposed by RSM are sufficient to manage interference between mobile BSs and FSS GSO and NGSO gateways and user terminals.

30. In accordance with Part B of Option 1, do you agree that Mobile Service (and its applications) should not be allowed to operate inside medium and low urban accessibility areas, as well as remote and very remote areas? If not, please provide an alternative with a detailed explanation.

One NZ does not agree that mobile services should be prohibited in medium and low urban accessibility areas, or in remote and very remote areas. We propose that mobile services be allowed in all these areas on a secondary basis, with FSS operating on a primary basis. It is highly likely that there will be mobile use cases in these areas, and a blanket prohibition would unnecessarily prevent such developments.

31. Would you like to propose any modifications for Option 1? If so, please provide modifications with relevant associated details.

As noted above, One NZ recommends that mobile services be allowed in all area types.

32. Do you agree with the geography-based by priority of service type option of sharing the 27.5 – 28.35 GHz frequency range between FSS (Earth-to-space) and Mobile Services, as detailed in Option 2? If not, please propose alternatives with the required details for RSM's consideration.

One NZ does not agree with Option 2 as currently proposed. However, we would accept and even prefer Option 2 over Option 1 if mobile services are assigned higher priority in urban areas and FSS has higher priority outside urban areas.

33. Which areas would you like FSS to have priority over Mobile Services, and vice versa, and why?

One NZ considers that mobile services should have higher priority in major, large, medium and small urban areas, as well as in high and medium urban accessibility areas. FSS can have higher priority in other areas.

34. How would you recommend RSM to calculate the coordination zones described in Part A and Part B of Option 2?

One NZ would be happy to work with RSM on the detailed calculation of coordination zones as part of the preparation for licensing these services.

35. Are there any other suggestions for licencing conditions which you wish to see included as part of Option 2? RSM encourages details of specific conditions for different types of FSS user terminals, e.g., fixed terminals vs. A-ESIMs and M-ESIMs.

Not at this stage. We are open to further discussions on this matter.

36. Would you like to see any additional technical conditions which facilitate sharing for Parts A and B of Option 2? Describe in detail, the changes you would want to make to this proposal.

Not at this stage. We are open to further discussions on this matter.

37. Do you agree with our approach of ESIM use in 27.5 – 28.35 GHz?

We agree with RSM's proposed treatment of A-ESIMs and M-ESIMs. However, we believe L-ESIMs should not be permitted to operate in 27.5 – 28.35 GHz anywhere in the country.

38. Do you wish to offer, implement or use pier-to-pier or gate-to-gate M-ESIM and A-ESIM applications in 27.5 – 28.35 GHz?

One NZ has no plans to offer, implement or use any M-ESIM or A-ESIM applications at this time.

39. Is there any other change which you wish to see in our approach for using A-ESIM and M-ESIM? If so, provide the relevant details.

It is important that M-ESIMs and A-ESIMs do not cause interference to mobile services in areas where mobile has higher priority. Clear communication of technical requirements and obligations to all ESIM operators will be essential so that these conditions are well understood and complied with.

40. Do you agree with RSM's proposed new spectrum uses outlined in Section 3.1? If not, provide details on the modifications you wish to seek with appropriate reasoning.

One NZ has no further comments on this matter beyond our previous submissions.

41. What is the likelihood of interference from land ESIM terminals operating in 28.35 – 29.5 GHz to Mobile Service receivers (BSs and UEs) operating in 27.5 – 28.35 GHz under possible shared use of FSS (Earth-to-space) and Mobile Services in 27.5 – 28.35 GHz?

One NZ considers the likelihood of interference from L-ESIM terminals operating in 28.35 – 29.5 GHz to mobile BSs and UEs operating in 27.5 – 28.35 GHz to be very low, provided L-ESIMs have a minimum elevation angle of 30 degrees, as proposed by RSM.

42. What technical conditions may be required to ensure that future L-ESIM use is not constrained in 28.35 – 29.5 GHz while protecting possible Mobile Service receivers in 27.5 – 28.35 GHz. Provide necessary technical justification to support your answer.

One NZ proposes that further technical discussions be undertaken to determine appropriate conditions that ensure L-ESIM use in 28.35 – 29.5 GHz is not unduly constrained while still protecting mobile receivers in 27.5 – 28.35 GHz.

43. To not constrain future use of A-ESIMs and L-ESIMs, do you propose any changes to the technical conditions for operating A-ESIMs and L-ESIMs within 28.35 – 29.5 GHz? If so, what would these be and what assumptions as well as processes did you use to derive these changes?

One NZ proposes that further discussions be held on this matter, including input from satellite operators, equipment vendors and MNOs.

44. Do you agree with RSM's proposed licencing arrangement to licence FSS (Earth-to-space) GSO or NGSO gateways operating in 28.35 – 29.5 GHz? If not, what changes would you recommend?

One NZ does not agree with RSM's proposal that satellite services pay only administrative licence fees for using the spectrum. As set out earlier in this submission, it is inequitable that satellite

operators do not pay for spectrum on a similar basis to mobile operators, particularly where the industries are increasingly competing. This creates an uneven playing field.

45. Which licencing option would you prefer for licencing FSS GSO and NGSO fixed user terminals and moving user terminals (ESIMs), respectively? RSM requests for appropriate justification to support your answer.

One NZ proposes that further consultations be undertaken on this matter, including consideration of options that support efficient coordination with mobile services and a level playing field in relation to spectrum pricing.

46. Do you agree with RSM's proposed approach to 29.5 – 30 GHz? If not, what modifications would you suggest to our proposal?

One NZ does not object to RSM's proposed approach to 29.5 – 30 GHz. However, we reiterate our view that satellite users should pay a fair price for using spectrum, comparable to what MNOs pay.

47. Do you agree with RSM's proposed approach to 17.7 – 20.2 GHz? If not, what modifications would you suggest to our proposal?

One NZ does not object to RSM's proposed approach to 17.7 – 20.2 GHz. Again, we consider it important that satellite users pay a fair and comparable price for spectrum, or that MNOs receive equivalent treatment (e.g. exemption from spectrum charges for similar high-frequency bands).

24. Please contact the following regarding any aspect of this submission.

Tom Thursby

GM, Legal and Regulatory

Privacy of natural persons

Kamile Stankute

Government and Regulatory Affairs Manager

Privacy of natural persons