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10 June 2011

2degrees Spectrum Renewal Offer - Proposed Approach

Purpose

This paper outlines a preferred approach for developing a renewal offer for cellular spectrum held by Two Degrees Mobile in the 800/900 MHz band. We seek your agreement to develop a renewal offer as recommended in the paper.

Action Sought

	Action Sought	Deadline
Minister for Communications and Information Technology	Agree to the recommendations.	17 June 2011

Ministry Contacts

Name	Position and Unit	Telephone		1 ST Contact
		Work	After Hours	
Len Stirling	Manager, Radio Spectrum Policy and Planning	04 462 4221	89(2)(a)	✓
Ben Craven	Policy Analyst, Radio Spectrum Policy and Planning	04 474 2642	N/A	

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10 June 2011

Minister for Communications and Information Technology

2degrees Spectrum Renewal Offer - Proposed Approach

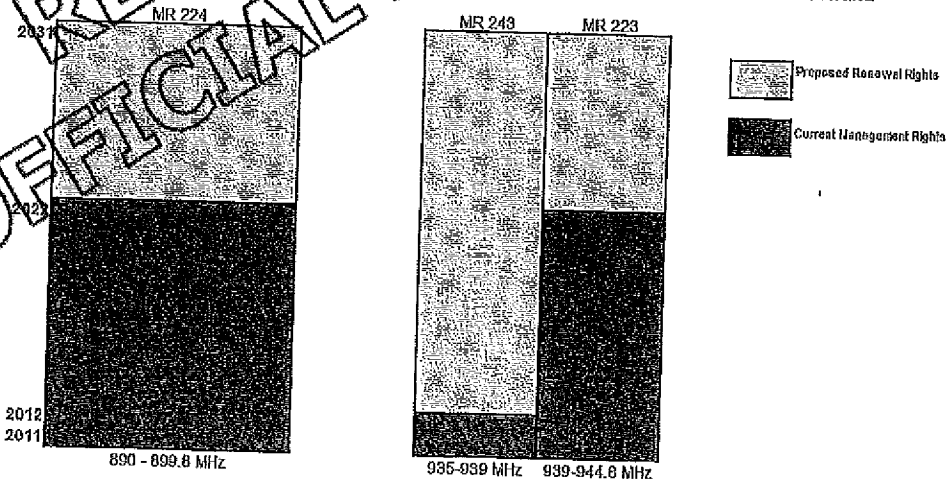
Executive Summary

The Ministry is seeking your agreement to develop renewal offers for spectrum held by Two Degrees Mobile ('2degrees') in the 800/900 MHz band.

2degrees has five separate Management Rights (Rights) in the band; three expire in 2012 and two in 2022. Three of the Rights are used for 2degrees' cellular service, a fourth is used as a guard band, and a final Right is unused.

Rights used to provide services

Figure 1: 2degrees Management Rights Used to Provide Services in the 900 MHz band



MR 243, which expires in June 2012, and the adjacent MR 223, which expires in 2022, are paired with a single Right MR 224, also expiring in 2022. These Rights, totalling 9.8 MHz paired, are used to provide GSM-based mobile services.

In 2007, Cabinet agreed that the renewal offer for 2degrees' spectrum expiring in 2012 should be made subject to the same conditions as offered to Vodafone and Telecom for their spectrum expiring in 2011/12, including:

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- a price of \$3.8 million per MHz paired for 20 years;
- an implementation requirement that the spectrum be used to provide services covering 65% of the population within five years of renewal; and
- alignment of expiry dates for all Rights in the band to 2031.

We propose that a renewal offer for MR 243 be developed accordingly, with minor structural adjustments to allow that Right to be amalgamated with the adjacent MR 223. This will enable 2degrees to manage its spectrum more efficiently and eliminate duplicate spectrum licence fees. The renewal price for this Right would be approximately \$7.4m.

We also propose that the Crown make an offer now to renew the other two Rights (MRs 223 and 224) for the period 2022-2031. This would require Cabinet approval. It would benefit both the Crown and 2degrees by providing long-term certainty of spectrum tenure and use. It would also address the current non-alignment of the expiry dates of 2degrees' Rights.

The Ministry's proposal in relation to the latter two Rights is that, if 2degrees contracts to renew the spectrum, payment would be permitted at any point between 2012 and May 2022. We do not consider that it would be fair to require 2degrees to pay any sooner than other spectrum managers, which is typically six months prior to expiry.

The price would be based on the \$3.8m per MHz-paired price already determined for spectrum rights for the 2011-2031 period, pro-rata'd and adjusted for inflation and net present value at the date of settlement. Treasury and 2degrees concur with this approach, which the Ministry considers is fair to 2degrees, its competitors and to the Crown.

Right used as a 'guard band'

MR 228, expiring in 2012, is set aside by 2degrees as a guard band to protect its services from interference from adjacent services operated by Telecom. This was required by the Crown as a condition to a 'spectrum swap' in early 2009 to allow 2degrees to utilise the previous guard band as part of a commercial tranche of 900 MHz spectrum to deploy mobile services.

As this spectrum is unpaired and unable to be used for mobile services, the Ministry had it revalued by an independent consultant to inform the development of a renewal offer. The consultant has recommended a renewal price of \$1.5 million total for the 20-year period, considering the limited alternative uses. We propose to develop a renewal offer based on this price. This would require Cabinet approval.

2degrees may refuse the offer, in which case the Ministry will consider alternative uses for the spectrum.

Right not to be renewed

MR 229, expiring in 2012, is unused. 2degrees does not wish to renew it.

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Next Steps

If you agree to these proposals, the Ministry will prepare a Cabinet paper seeking approval in respect of the renewal offers for MRs 223, 224 and 228. The renewal offer for MR 243 does not require additional approval from Cabinet.

2degrees would be required to settle no later than six months prior to the current Rights' expiry. This would be January 2012 for MR 243, and May 2012 for the unused guard band.

Risks

There are risks to offering to renew spectrum now that does not expire for another 10 years. The value of spectrum may change over time as markets and technology evolve, and the market value in 2022 could be significantly different from the value set in these 2011 offers. However, there are upside and downside risks for both the Crown and 2degrees. The Ministry considers that the offers are fair and reasonable to both parties.

Recommended Action

We recommend you:

- a **Note** that Cabinet agreed in April 2007 that the renewal offer for spectrum on sold to a new entrant and expiring in 2012 should be made subject to the same conditions as offered to Vodafone and Telecom.
- b **Note** that the previously agreed renewal price for spectrum in the 800/900 MHz band was \$3.8 million per MHz paired, for a renewal period of 20 years.
- c **Agree** to offer MR 243 for renewal for the period 30 June 2012 – 28 November 2031 at a price of \$1.9 million per MHz and pro-rata'd to align expiry with that of other Rights in the band, in 2031.
- Yes / No
- d **Agree** that MR 228, currently used as a guard band, should be offered for renewal to 2degrees, indicatively at a price of \$1.5 million for the twenty year period (to be confirmed by Cabinet).
- Yes / No
- e **Note** that the Ministry has developed a price formula for the early renewal of MR 223 and MR 224, and that Treasury and 2degrees have both agreed to this formula.
- f **Agree** that MR 223 and MR 224 also be offered now for renewal, for the period 2022-2031 based on a price formula as set out in this paper (to be confirmed by Cabinet); and

Yes / No

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- g **Agree** that officials begin drafting a Cabinet paper, seeking approval to the renewal conditions and price of MR 228, MR 223 and MR 224 (recommendations d and f).

Yes / No

Len Starling
Manager, Radio Spectrum Policy and Planning
Energy and Communications Branch

Steven Joyce
Minister for Communications and
Information Technology

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2degrees Spectrum Renewal Offer - Proposed Approach

Purpose of Report

- 1 This paper outlines a proposed approach for developing a renewal offer for cellular spectrum held by Two Degrees Mobile ('2degrees') in the 800/900 MHz band. We seek your agreement to develop a renewal offer as recommended in the paper.

Background

Spectrum Held by 2degrees

- 2 2degrees holds five Management Rights in the 800/900 MHz band, with expiry dates in either 2012 or 2022. The current rights and proposed changes are shown in the table below.

Right No.	Range (MHz)	MHz	Pair	Expiry	Proposal
MR 229	840-841	1	W/A	29-Oct-12	Allow to revert to the Crown.
MR 228	885-890	5	W/A	28-Oct-12	Guard band. Renew to 2031 for a total price of \$1.5 million
MR 224	890-899.8	9.8	MR 243 MR 223	24-Nov-22	Offer contract now for renewal for the period 2022-2031. Pricing formula described below.
MR 243	935-939	4	MR 224	29-Jun-12	Renew to 2031 at pro-rata'd benchmark price.
MR 223	939-944	5.8	MR 224	24-Nov-22	Offer contract now for renewal for the period 2022-2031. Pricing formula described below.

- 3 2degrees provides 2G GSM cellular services using MR 224 (890-899.8 MHz) paired with MR 243 (935-939 MHz) and MR 223 (939-944.8 MHz). MR 228 is used as a guard band, and MR 229 is unused.
- 4 2degrees provides 3G Wideband Code Division Multiple Access (W-CDMA) services using spectrum in the 2.1 GHz band held by Hautaki Limited. 2degrees has indicated that it plans to implement 3G W-CDMA in its 900 MHz spectrum in some 'secondary townships' and rural areas in 2011.
- 5 Only MR 229, MR 228, and MR 243 are expiring in 2012. Proposed approaches to renewing each of these are set out below. We have also developed an option which will allow the Crown to offer, and 2degrees to commit to, renewing MR 224 and MR 223 now, for the period 2022 – 2031.

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Previous Cabinet Decisions

- 6 In 2007, Cabinet agreed to a renewal offer formula and process for the cellular management rights in the 800/900 MHz band, held by Telecom and Vodafone. This included an incentive to sell some spectrum on the secondary market to a new entrant, NZ Communications, now known as 2degrees. Cabinet also agreed that the renewal offer for onsold spectrum to the new entrant expiring in 2012 be made on substantially the same terms and conditions as made to the incumbents.
- 7 These terms included:
- a a price of \$3.8 million per MHz paired for 20 years, a benchmark price agreed by the then Minister for Communications and Information Technology, within a range identified as appropriate by Network Strategies (an economic consulting firm) using an Incremental Optimal Deprivation Valuation methodology;
 - b an implementation requirement that the spectrum be used to offer services to at least 65% of the population within five years (with a further two-year 'buy-out' option); and
 - c a renewal period of between 19 and 20 years, to align expiry dates of all cellular management rights in the 800/900 MHz band to a common date (28 November 2031).
- 8 The implementation requirement was given effect through the creation of successive rights - a five year 'early' management right, followed by conditional rights which will only be transferred if the 65% threshold is met. Once the 'early right' has commenced and the manager has met the 65% threshold, the successive rights out to 2031 are able to be transferred. Alternatively, if the manager needs longer than five years to reach the 65% threshold it is able to purchase an additional two years' time to reach it.¹
- 9 Settlement is required no later than six months before the existing rights expire. Vodafone settled its renewal offer in January 2009, and Telecom is expected to settle in April 2012.

Renewal Offer

- 10 The Ministry has considered several options for potential renewal offers regarding 2degrees' spectrum holdings. We have consulted 2degrees on these options, and have agreed that the offer set out below is the preferred approach. Two alternative options that we considered, but that are not recommended, are included in an appendix to this paper.

¹ For 15% of the renewal price.

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- 11 We recommend an offer comprised of three parts:
- a Part 1: a renewal offer for MR 243, out to 2031;
 - b Part 2: an offer to also commit to renewing MR 223 and MR 224, for the period 2022 to 2031; and
 - c Part 3: an offer to renew MR 228, the 'Guard Band'.
- 12 Part 1 is necessary for 2degrees to offer service after 2012 but leaves uncertainty about its position after 2022 as its Right for the band ~~can~~ would expire at that time.
- 13 Part 2 would enable 2degrees to secure its paired spectrum requirements until 2031, providing it with spectrum tenure on par with its competitors.
- 14 Part 3 responds to 2degrees' desire to retain control over the Guard Band, minimising the risk of any interference from adjacent services.
- 15 We consider that each part of the renewal offer should be independent (that is, able to be accepted or rejected regardless of its decision on another part), as it allows 2degrees commercial flexibility to select its ongoing spectrum holdings to suit its service requirements and business plans.

Part 1: Offer to Renew MR 243

- 16 MR 243 is part of 2degrees prime spectrum holdings, used to provide its core cellular mobile services. MR 243 (935-939 MHz), and the adjacent MR 223 (839-944.8 MHz), are paired with MR 224 (890-899.8 MHz).

- 17 MR 243 (935-939 MHz) expires on 29 June 2012. s9(2)(ba)(i)

A similar process has been undertaken by Telecom and Vodafone. The Ministry supports this intention, as it will enable 2degrees to more efficiently administer its spectrum, with fee payments reducing accordingly.

- 18 Under s46 of the Radiocommunications Act 1989, adjacent rights may only be aggregated if their expiry dates are aligned.
- 19 The Ministry proposes to design a renewal offer similar to those offered to Vodafone and Telecom, consisting of early and conditional Management Rights, but with modified expiry dates for the Conditional Rights to allow the aggregation of MR 243 with MR 223.

s9(2)(ba)(i)

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- 20 As 2degrees expects to reach the 65% implementation threshold in mid-2012, we have agreed that a two year 'buy-out right' to obtain additional time to meet the implementation requirement, as included in the offers to Telecom and Vodafone, would not be required.
- 21 Therefore, we would structure a renewal offer for MR 243 until 28 November 2031 comprised of the following successive rights:
- a 5 year 'Early Right' until June 2017;
 - b 'Conditional Right (A)', from 2017 to 2022, to align with the expiry of MR 223, and conditional on 2degrees reaching 65% population coverage;
 - c 'Conditional Right (B)' from 2022 until 2031.
- 22 2degrees would be issued with the 'Early Right' soon after settlement date (January 2012). The subsequent Conditional Rights (A) and (B) would be created and held in the Crown's name, to be transferred to 2degrees once it reaches the 65% coverage implementation requirement. This would enable the aggregation of the Management Rights as desired by 2degrees.
- 23 This process would be straightforward, and would not require any additional approval from Cabinet. While a slight deviation from the structure of the original offers to Telecom and Vodafone, provided 2degrees was happy with a shorter implementation period there would be no impact in terms of equity for the other Right holders.

Part 2: Offer to also renew MR 223 and MR 224 now, from 2022 to 2031

- 24 The Ministry proposes to also offer to renew MR 223 and MR 224 (the other two Rights owned by 2degrees and used to provide mobile services in the 900 MHz band) now, for the period 2022-2031. This would allow all three Rights to be aligned in time, to create one set of paired spectrum expiring in 2031.

25 This would be beneficial from a spectrum planning perspective, as it provides:

- a long term certainty of tenure to the Crown;
- b long term certainty of access to spectrum to 2degrees (including higher value spectrum assets should it wish to sell its spectrum holdings at some point in the future);
- c equitable treatment to all mobile providers, as it allows 2degrees to invest expecting the same long-term access to spectrum (and subsequently, long term financial returns) as the larger mobile network operators; and
- d aligned expiry dates amongst all Management Rights used for cellular mobile services in the 800/900 MHz band.

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- 26 The Ministry has discussed this approach with 2degrees. ^{s9(2)(ba)(i)}



- 27 The Ministry agrees that settlement for these two rights should not be required ten years before expiry, but notes that some form of commitment now could be advantageous to both parties. Therefore, the Ministry proposes an approach which will allow 2degrees to commit now to renewing these two rights, with the price to be determined by an agreed formula, allowing 2degrees to settle at any given point between 2012 and May 2022.

Proposed Renewal Price Formula

- 28 The formula would use the base price of \$3.8 million per MHz paired, being the price in 2011/12 dollars for renewing cellular spectrum in the 800/900 MHz band for a 20-year period. The formula would include appropriate adjustments for inflation, and a 'net present value' discount for settlement prior to 2022 (the standard deadline for settlement being six months prior to expiry of a right). The steps for calculation would be as follows:

a \$3.8m per MHz paired, pro-rated for renewal period and quantity of paired spectrum

b adjusted for inflation from 2012 dollars to provide a 2022 dollar figure:

using exact CPI rate from Statistics NZ applied for the period from 2012 to the date of settlement, and

using the mid-point of the Reserve Bank inflation target at settlement applied for the period from date of settlement to 2022;

adjusted to the 'net present value' at the date of settlement, applying a discount rate to represent benefit to the Crown in receiving payment early:

i using as a discount rate the Treasury bond rate at the date of settlement, as agreed with the Debt Management Office.

- 29 We have discussed this proposed formula with both 2degrees and Treasury. Both are satisfied with the approach.

- 30 2degrees will have the option to either:

a Accept the offer and agree to contract now to renewing the spectrum at any point over the coming decade, at a price to be determined through the agreed formula and no later than a set date; or

b Decline to consider the renewal of MR 223 and MR 224 at this point.

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This will be a commercial decision for 2degrees, able to be made independent of its decision on whether or not to renew MR 243. If 2degrees decides to decline the offer, then the Ministry will follow usual renewal policies and procedures, and consider whether to offer the spectrum for renewal, for what period of time and at what price, five years before the Rights expire (that is, in 2017).

31 §9(2)(b)(i) The Ministry does not consider it appropriate to commit to future allocations or offers of spectrum tenure without a reciprocal commitment to pay for the rights. To commit to a first right of refusal may lead to a situation where 2degrees declines to renew the spectrum, and the spectrum sits unused for a period while alternative uses are identified or an auction is developed.

32 As these Management Rights are not covered by the previous Cabinet decision, Cabinet approval will be required to offer the spectrum for renewal now, and to confirm the pricing formula.

Part 3: Offer to Renew MR 228, the Guard Band

33 MR 228 is unpaired and acts as a guard band between MR 224, being the 2degrees base receive (mobile transmit) band, and MR 227 (880-885 MHz), being Telecom New Zealand's base transmit (mobile receive) band. This guard band is necessary because New Zealand has utilised both the US and European band plans in the 800-900 MHz frequency range.

34 2degrees originally purchased this spectrum block from Telecom with the intention of using part of its pair in a spectrum swap with the Crown. Before agreeing to the swap, the Crown required that the remaining 885-890 MHz be set aside as a guard band to prevent interference from and against adjacent services. This enabled use of the then guard band (890-894 MHz) for deploying 2degrees' current commercial services.

35 §9(2)(b)(i)

Potential Value

36 The Radiocommunications Act 1989 prevents any potential owner of a Right (including the Crown) from knowingly creating licences for services which would directly cause harmful interference with either 2degrees' or Telecom's services.⁴

³ Telecom operates in what is known as the 850 MHz band, aligned with the United States. Vodafone and 2degrees operate in the Extended-GSM 900 MHz band, aligned with Europe.

⁴ It can at times be difficult to be certain of the amount of interference a new service will cause, and whether it is the new service or the existing equipment at fault.

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We do not consider it appropriate for the Crown to commit to not use or allocate spectrum in the future, where alternative, non-interfering services may be developed.

37

s9(2)(f)(iv)

- 38 A preliminary planning analysis suggests that the spectrum is unusable for mobile services at the current time. Few other services could be implemented in the band, except limited allocation to unidirectional fixed links; for example, Studio to Transmitter Links (STLs).
- 39 Given the limited use options, the Ministry agrees that the spectrum could not realistically be valued at the price determined by Network Strategies for spectrum used to provide cellular services (being \$3.8 million per MHz paired).
- 40 The Ministry has therefore engaged an external party to independently determine the value of the spectrum, considering its value to 2degrees as a guard band preventing interference to its mobile services, and the opportunity cost to Government in not allocating the spectrum to alternative uses. The consultant has recommended a price of \$1.5 million for the twenty year period.

Recommended Options for Renewal

- 41 The Ministry proposes to offer MR 228 for renewal to 2degrees, for a price of \$1.5 million for the twenty year period.⁵ It is worth noting that spectrum users are not typically required to purchase guard bands. However, the rationale for offering this spectrum for renewal is to accommodate 2degrees' desire for protection above that provided for in the Act. The recommended price reflects the limited potential alternative use of the band, while still requiring payment from 2degrees in exchange for ownership rights and the additional protection offered by holding the band.
- 42 2degrees may either accept the offer and pay the determined amount to ensure protection of its services, or it may reject the offer, and ownership, including the right to sell or allocate to other users, will revert to the Crown. This will be a commercial decision for 2degrees.
- 43 This approach will require Cabinet approval to deviate from the terms of the original offers, the ability to renew spectrum not currently "in use,"⁶ and to amend the renewal price.

⁵ As the spectrum acts as a guard band between services operated by Telecom and 2degrees, it could be argued that both parties should meet any cost of renewing the spectrum. As 2degrees currently holds the spectrum, the Ministry intends to offer it only to 2degrees for renewal. 2degrees may seek to reach a commercial arrangement with Telecom, if it so desires.

⁶ Existing Government policies allow renewal offers to be made only when spectrum is 'in-use,' recognising the investment made by incumbents. However, in this case it may be that the highest value use of the spectrum is as a guard band to protect the integrity of 2degrees' and Telecom's services.

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No offer to Renew MR 229 (840-841 MHz)

- 44 s9(2)(b)(i) [REDACTED] It is the remnant of a spectrum swap with the Crown in 2008 which allowed 2degrees to pair spectrum in the Extended GSM 900 band (880-935 MHz). The Ministry agrees that there is no value in 2degrees holding the spectrum. Ownership of this spectrum will revert to the Crown. The Ministry will consider potential uses in due course.

Settlement

MR 243

- 45 Settlement is typically required no later than six months in advance of the original right expiring. As MR 243 expires 29 June 2012, 2degrees would be required to settle 29 December 2011. Due to difficulties created by the Christmas period, the Ministry has agreed that the deadline for settlement should be extended to no later than 31 January 2012.
- 46 The renewal offer for MR 243 would be based on a renewal price of \$3.8 million per MHz paired for a period of 20 years. As only one half of the spectrum pair is being renewed at this time (with the pair, MR 224, not expiring until 2022) we propose that the price be halved to \$1.9 million per MHz. It would also be pro-rata'd from 20 years to the actual renewal period (from 30 June 2012–28 November 2031).
- 47 The renewal price would therefore be \$7,376,618.

MR 228

- 48 The renewal price for MR 228 will be \$1.5 million. Settlement, should 2degrees accept the renewal offer, would be required by 29 April 2012.

MR 223 and MR 224

- 49 As set out in the formula above, we propose that the renewal price for MR 223 and MR 224 will be \$3.8 million per MHz paired over 20 years, pro-rata'd to a 9-year term and adjusted for inflation (until 2022) and discounted by the Treasury bond rate at the point where 2degrees chooses to settle. This approach will allow 2degrees to choose to settle at any point from 2012, but no later than 24 May 2022.

Next Steps

- 50 Should you agree to the proposals in this paper, we will draft
- a a Cabinet paper seeking agreement to the proposals for renewing MR 228 (guard band) and MR 223/224 (not expiring until 2022). We plan to aim for EGI in mid-July, with a draft to you by the end of June.
 - b a renewal offer to 2degrees. Following the Cabinet process, we will aim to provide this to 2degrees for its consideration by the end of July.

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Risks

- 51 The risks in this proposed approach primarily relate to the secondary offer to renew spectrum, or commit to renewing spectrum, expiring in 2022. The risks are that:
- a the spectrum might change in value over the period. The spectrum might become more valuable if demand for wireless communication increases dramatically. The spectrum might become less valuable if anticipated demand does not occur or if new technology reduces demand for this part of the spectrum. The Ministry considers that these risks are evenly balanced and that, should either risk crystallise, the Crown's position would be defensible as the risks were part of the consideration of both sides at the time the commercial agreement was entered into;

b

89(2)(g)(i)

c

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Appendix 1 – Other Renewal Options

Renew According to Existing Conditions

- 52 The Ministry could make a renewal offer strictly based on the conditions of the offers made to Telecom and Vodafone.
- 53 Offer to renew MR 243 until 28 November 2031, following the same implementation requirements as set for Vodafone and Telecom. Renewal right would consist of
- a Five-year 'early' right, until 2017 (to meet 65% requirement)
 - b two-year 'buy out' right, until 2019 (additional time to meet 65%, able to be purchased for 15% of renewal price)
 - c 'conditional' right, until 2031 (only available once the 65% requirement has been met).
- 54 This option is not preferred by either the Ministry or 2degrees as it does not permit aggregation of MR 243 with MR 223, a process which has been able to be undertaken by both Vodafone and Telecom to reduce their annual spectrum licence fee payments. Preventing 2degrees from undertaking a similar process could be considered unfair treatment of the fibre mobile operator.

Renew MR 243 until 2022 only

- 55 Another option would be to renew MR 243 only until 2022, to align with the expiry of MR 224. This would constitute a renewal period of just over 10 years.
- 56 This would make the aggregation with MR 223 possible, and avoid an 'overhang' of MR 243 being renewed for an additional 9 years beyond the expiry date of the aggregated right. However, it provides less certainty of tenure for both the Crown and for 2degrees.

57 s9(2)(ba)(i)



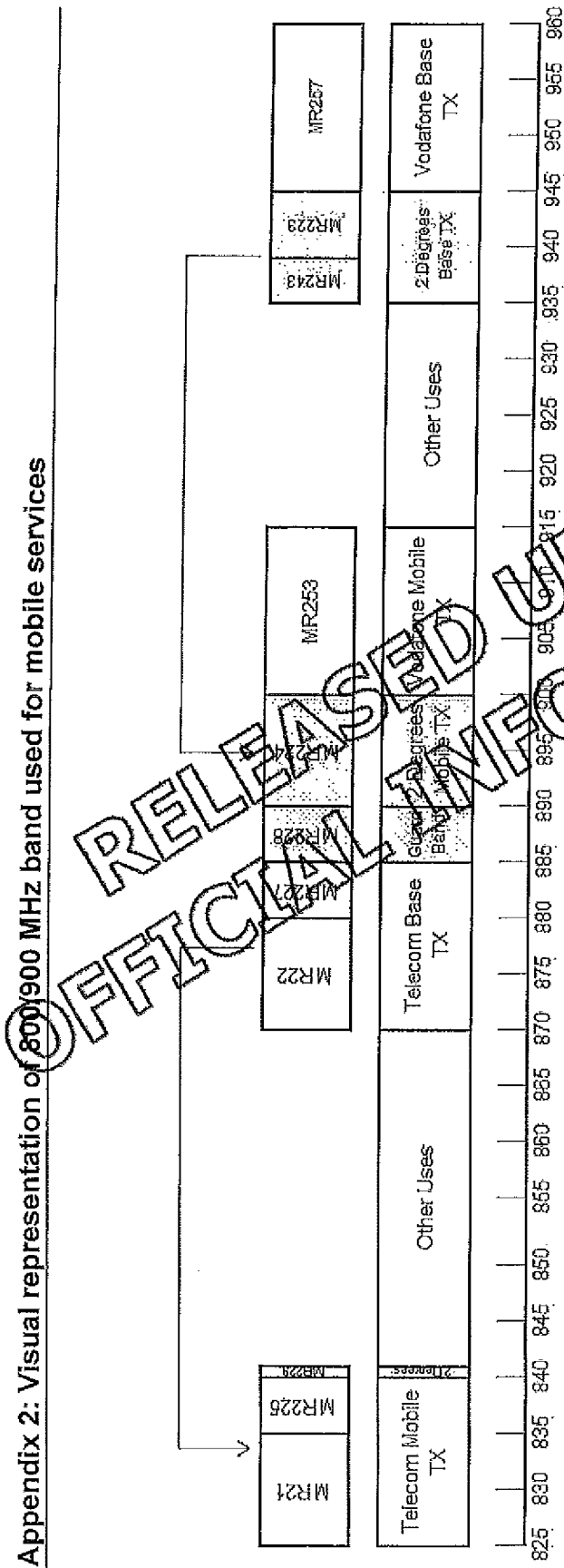
- 58 Modifying the renewal period would require a return to Cabinet.

59 s9(2)(ba)(i) and (2)(g)(i)



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Appendix 2: Visual representation of 800/900 MHz band used for mobile services



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Digital Dividend: Outcomes of Consultation

Purpose

This briefing summarises outcomes from the recent consultation on the allocation of the digital dividend 700 MHz radio spectrum band, and sets out the Ministry's proposed next steps. It seeks agreement for officials to begin drafting a Cabinet paper on the allocation methodology and associated policy rules.

Action Sought

	Action Sought	Deadline
Minister for Communications and Information Technology	Agree to the recommendations.	24 February 2012

Ministry Contacts

Name	Position and Unit	Telephone		1 ST Contact
		Work	After Hours	
Len Starling	Manager, Radio Spectrum Policy	+64 4 462 4221	89(2)(3)	✓
Ben Craven	Policy Analyst, Radio Spectrum Policy	+64 4 474 2642		

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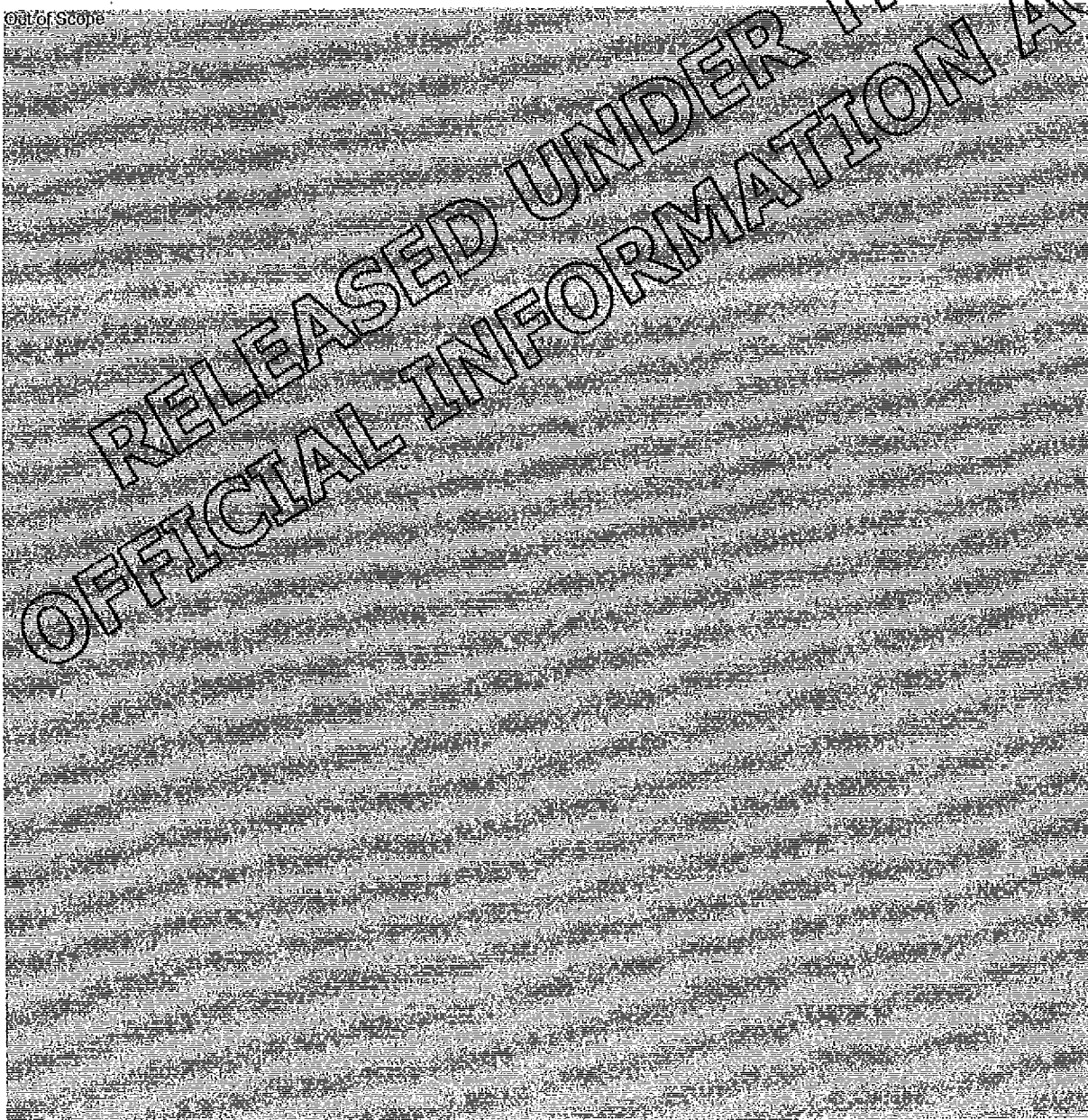


15 February 2012

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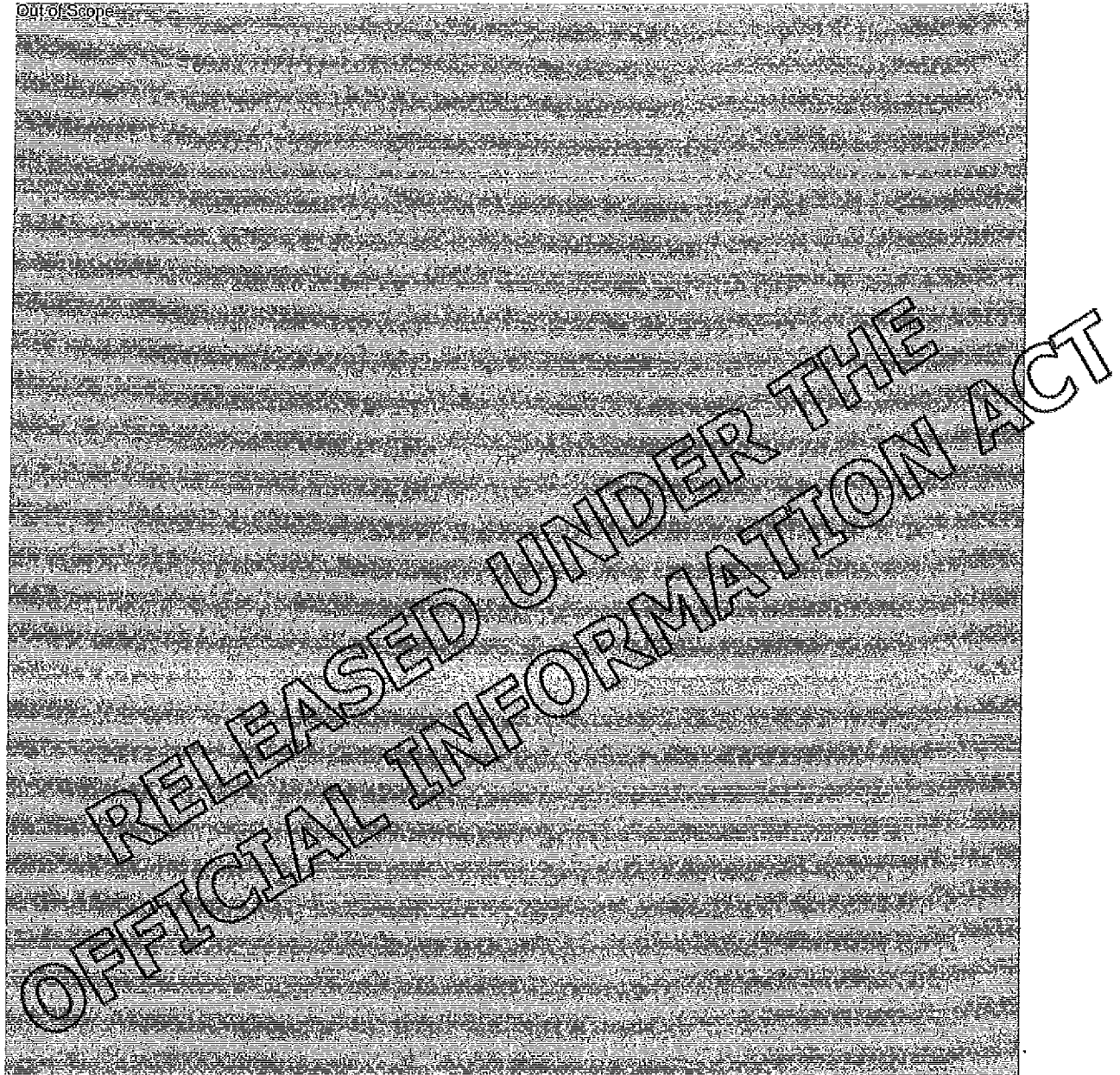
Digital Dividend: Outcomes of Consultation

Out of Scope



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Competition Controls

39. The Ministry considered whether provision should be made in the allocation process to ensure new entry into the market. We also proposed imposing both acquisition limits ('caps') and implementation requirements ('use it or lose it') on the digital dividend spectrum. These proposals were well received and supported by almost all submitters. Debate focused on the detailed design of these measures, such as the level of any cap and the extent of any rollout requirement.

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New Entry

40. In general, submissions demonstrated industry scepticism regarding the likelihood of new entry in the cellular mobile market. Many submitters noted the consolidation trend internationally that has seen the number of nationwide mobile network operators reduce in many countries. Submitters also commented on the small size of the New Zealand market, and the rugged terrain (requiring greater investment in radio towers), making it difficult for additional operators to reach minimum efficient scale.
41. Those parties arguing that provision should be made for a new entrant tended to consider themselves as new entrants, or sought specific rules favourable to their situation. 2degrees, for example, strongly argued that new entry was unlikely as a business case would not exist. Instead, it argued that it should be treated as a 'new entrant' and be treated favourably for spectrum allocation.
42. The Commerce Commission indicated that it does not consider new entry likely in the short term, and that a set-aside would not be necessary or an efficient use of spectrum. The Commission prefers that the Ministry support an effective secondary market to enable spectrum trading between operators, thereby allowing new entrants to acquire unused spectrum through private agreement. The Ministry concurs with this approach.
43. The Ministry considers that:
- a set-aside would be an inefficient use of spectrum, artificially constraining spectrum supply;
 - the 'sell down' proposal was not fully understood by all parties, and is likely to complicate the auction and create uncertainty in the market; and
 - setting caps to ensure four parties would result in less spectrum likely to be deployed in the short term, for uncertain future gains.
44. The Ministry therefore does not recommend setting specific conditions to ensure a fourth entrant. However, it is still possible that a fourth entrant may emerge and secure spectrum at auction.

Acquisition Limits

45. Acquisition limits (commonly known as 'caps') set a maximum amount of spectrum that any operator can hold in a particular band. The prime objective of a cap is to minimise risks to competition by preventing dominant firms from acquiring a significant portion of spectrum, thereby blocking access for weaker firms to an important resource. Caps may also be used to determine the minimum number of operators desired in the market using that particular spectrum band, and to ensure an equitable allocation between operators.
46. The Ministry had proposed a 2x15 MHz cap, while allowing one party to exceed this to acquire 2x20 MHz (subject to a sell-down requirement of some holdings in the 800/900 MHz bands). This would allow one party to deploy the largest possible LTE carrier, offering end users greater speeds and data transfer capacity.¹ While some submitters supported the ability to maximise the technical capability of the band, others were concerned about the potential negative effect on competition.

¹ This is due to the technical specifications of LTE. Carriers are able to be deployed in 1.4, 3, 5, 10, 15, and 20 MHz sizes, with larger carriers capable of greater data transfer speeds and throughput.

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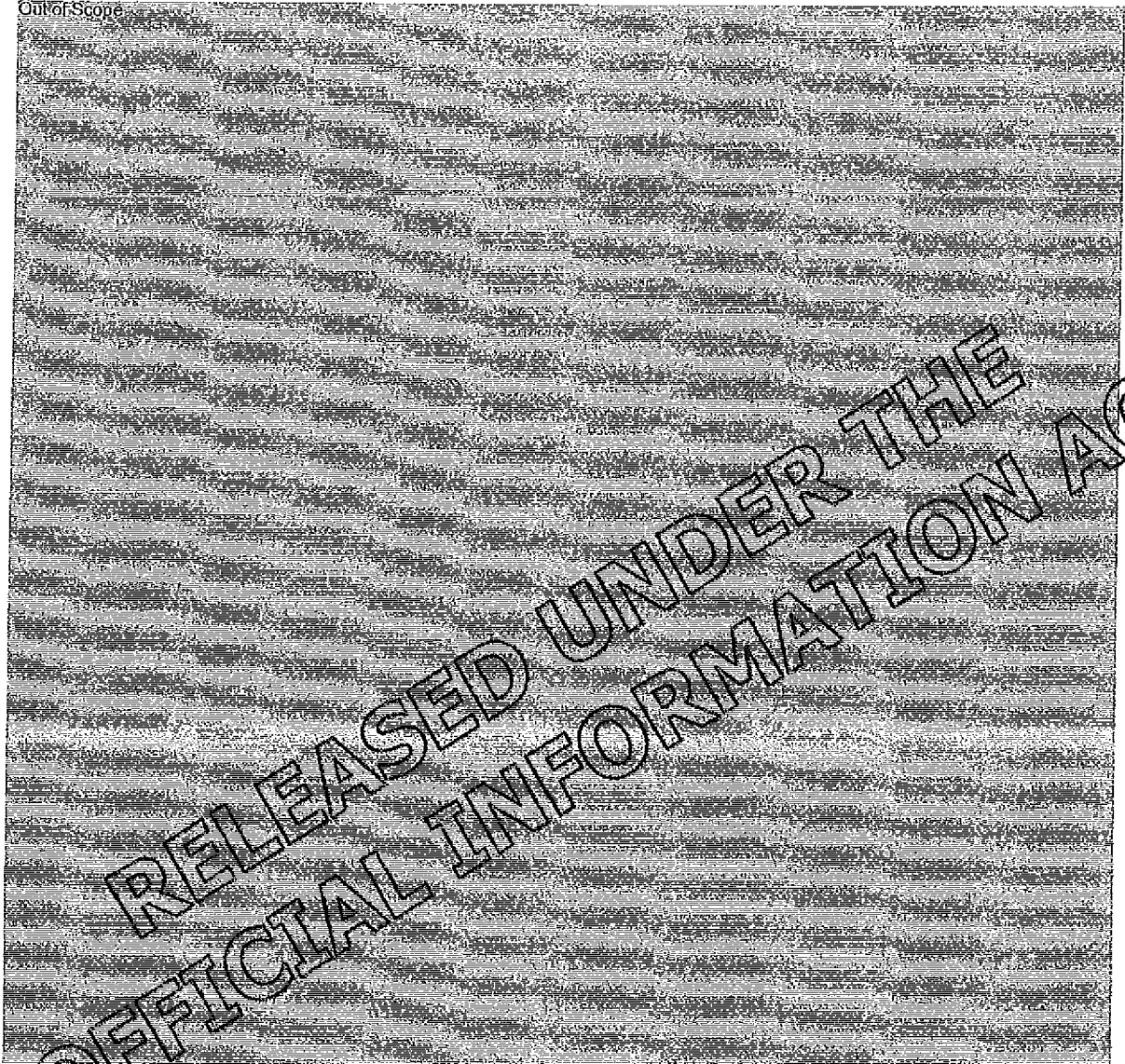
47. Since the release of the discussion document, the international standards body 3GPP has indicated that it is considering not supporting a 20 MHz carrier in the APT band plan, due to technical difficulties. In addition, several submitters did not grasp the intention of the sell-down proposal, and those who did noted the level of uncertainty that it would add to the market.
48. The Ministry agrees that the sell-down proposal would complicate the auction and create uncertainty for managers and, given the uncertainty from 3GPP on the ability to deploy a 20 MHz carrier, officials now consider that a flat 2x15 MHz cap, which will ensure at least three parties are able to acquire spectrum, would be most appropriate.
49. Assuming no set-asides of spectrum for other parties, the most likely outcome under such a proposal is that each of Telecom, Vodafone, and 2degrees will acquire 2x15 MHz of spectrum. Competition at auction will therefore likely be limited. Careful consideration will therefore need to be given to setting appropriate reserve prices for spectrum.
50. We propose seeking Cabinet delegation for you to work with the Ministers of Finance and Economic Development to jointly agree appropriate auction reserve levels.

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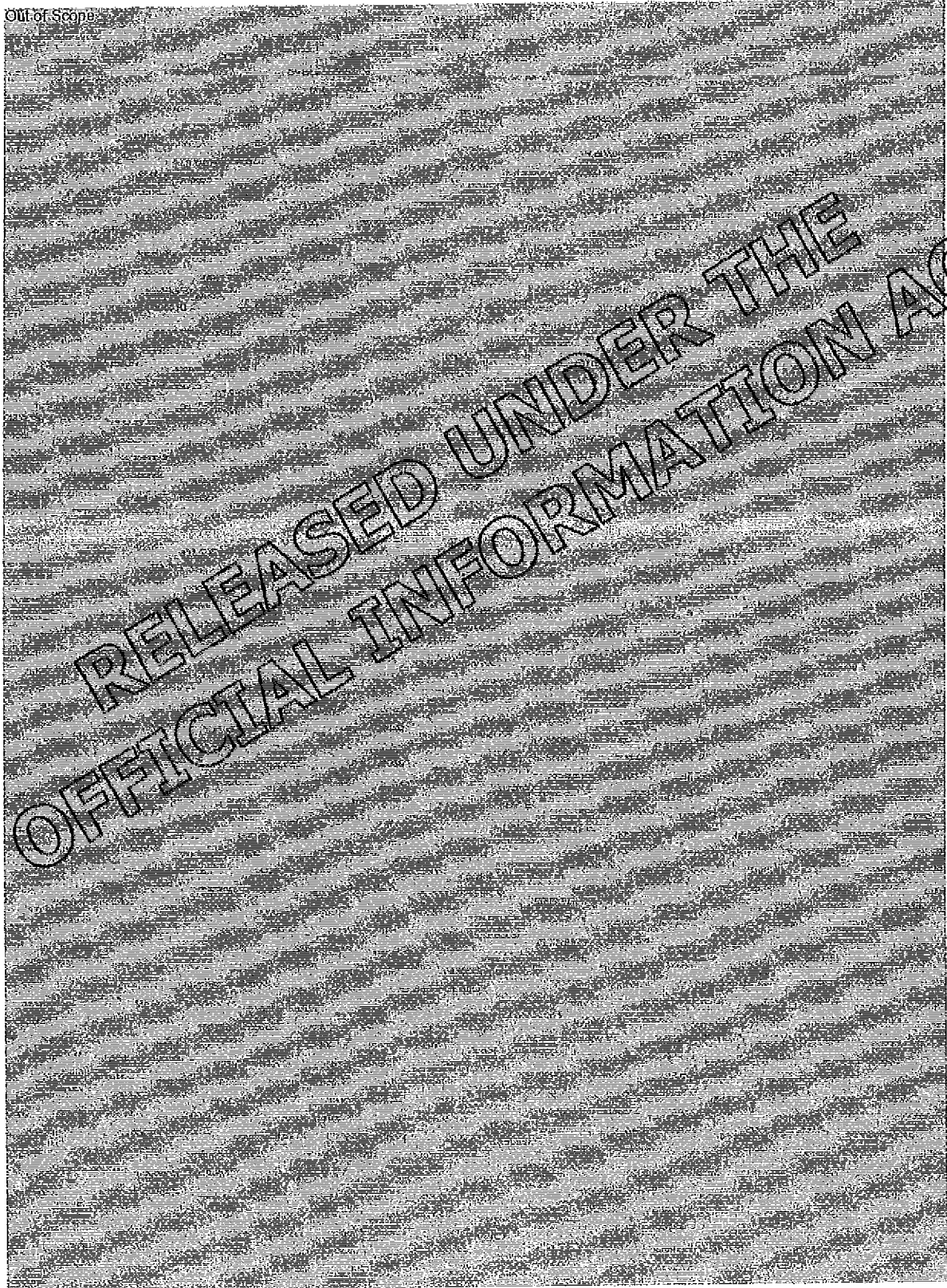


Spectrum Portfolio Equality

73. 2degrees sought intervention by the Crown to ensure that all three mobile operators held equivalent quantities of spectrum across various bands, particularly below 1 GHz. It saw this as a necessary component of maintaining effective competition.
74. In our view such an approach would limit the flexibility of mobile network operators to tailor spectrum portfolios to their specific needs. Acquiring different quantities of spectrum enables network operators to reduce infrastructure costs, offer greater data speeds and higher capacity. This is a key competitive point of difference for networks, and should not be dictated by the Crown.
75. While 2degrees holds less spectrum than Telecom or Vodafone, in the Ministry's view it has access to sufficient spectrum by international standards to operate a competitive network. The Ministry does not propose additional intervention to equalise spectrum holdings across all network operators.

In Confidence

76. The Commerce Commission agreed that network operators did not need to hold identical spectrum portfolios, but added that large disparities should be avoided. The proposed 2x15 MHz caps for the 700 MHz band will be sufficient to achieve this goal.



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Minister (x3)
CEO
Dep. Sec
Director
Manager
File/s

In Confidence

FILE

P/028/PR023/002

3

Spectrum: Māori interests in the 700 MHz band

To	Hon Amy Adams	Priority	High
Date	12 March 2012	Deadline	13 March 2012

Purpose

- 1 To provide you with options for discussion with the Minister of Maori Affairs about Māori interests in the 700 MHz band.

Recommendation

- 2 We recommend that you note this briefing.

Summary

- 3 This paper describes a range of options that could be used to accommodate Māori interests in the 700 MHz band and, more broadly, to achieve shared government and Māori economic development objectives. We have provided some commentary on each option and have suggested the factors that would need to be considered before settling on each option.

- 4 *Option 1: Direct allocation of a significant amount of spectrum at zero cost (as recommended by Te Puni Kōiri)* Out of scope

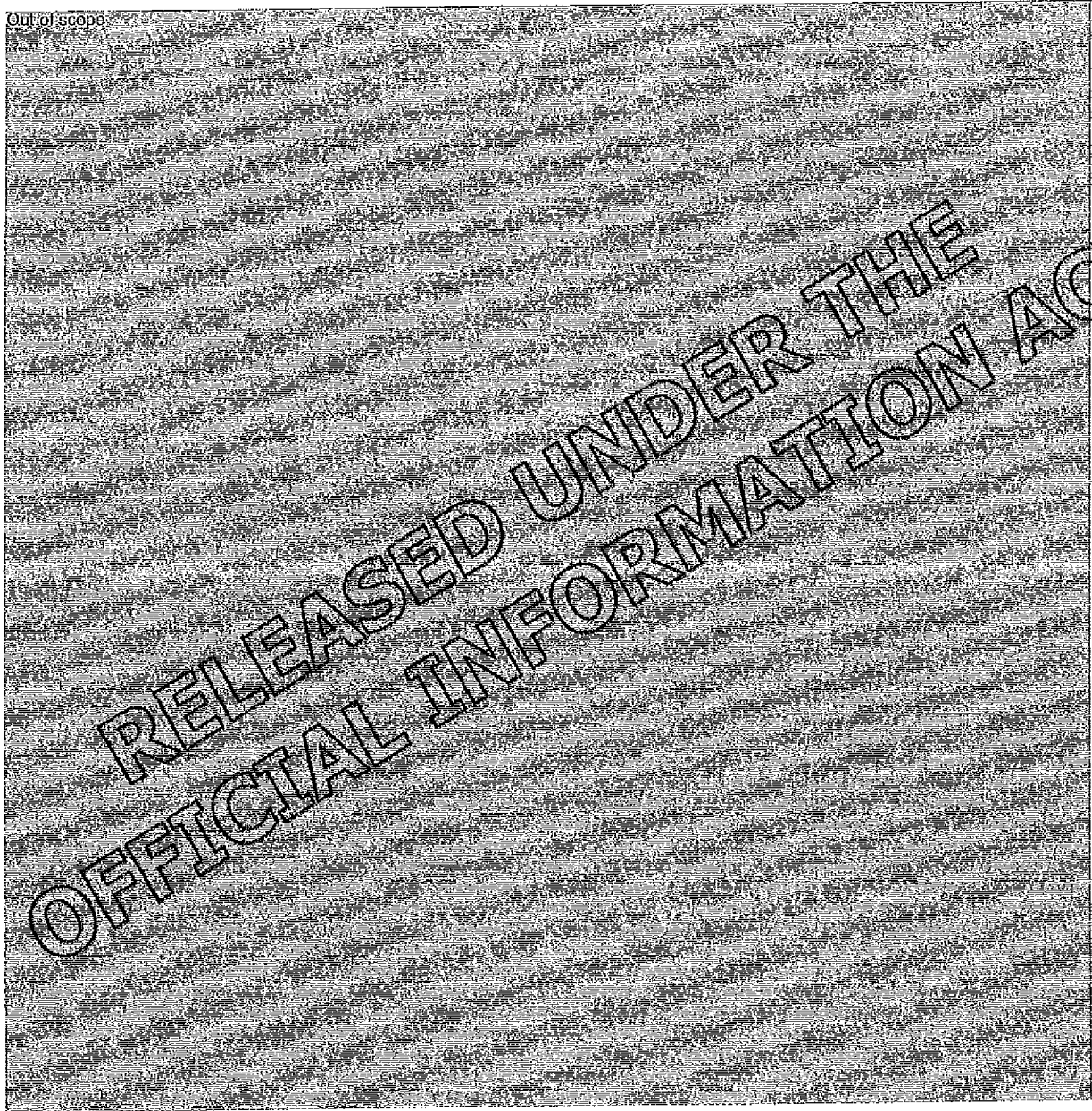
- 5 *Option 2: Allocation of commercial spectrum at a discount to market price.* Out of scope

However, direct returns to Māori have yet to appear. Out of scope

- 6 Out of scope
- 7

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Option 1. Direct allocation of a significant amount of spectrum at zero cost



Other risks

27

Out of scope
The easiest case to analyse involves a continuation of the existing Hautaki-2degrees linkage. In that case 15 MHz of spectrum valued at \$40 m would likely enable Hautaki to increase its stake in 2degrees from its current 5 percent level to about 15 percent. This is well short of a controlling interest and Hautaki would remain reliant on dividends from 2degrees to provide any significant return to its beneficiaries.

28 [Redacted]

Option 2. Allocation of commercial spectrum at a discount to market price

29 [Redacted]

However, ten years after the reservation of the spectrum and disbursement of the funds, Hautaki has returned no dividends to the beneficiary trust, and has had to borrow to maintain its proportionate shareholding in 2degrees.

30 Te Huarahi Tika Trust and 2degrees recently launched a scholarship fund of \$50k per annum, a high school careers advice programme and a school leavers recruitment programme into 2degrees for Māori. However, this equates to a very modest return on the funds invested.

31 [Redacted]

[Redacted]

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Annex 1 - Spectrum allocations for Māori and related Initiatives

Spectrum Allocation (Date of decision)	Terms and Conditions	Related Initiatives	Comments
Out of scope			
<i>Policy Objective: Promote Māori participation in the knowledge economy</i>			
3G cellular services 25% of available Dotted spectrum 2.1 GHz band (2000)	Spectrum for commercial use, reserved for Hautaki to purchase. Discounted price (95% of lowest price at auction) – \$12.67m. (Value of discount approx \$0.03m p.a.)	\$5m provided to Te Huarahi Tika Trust as seed funding to explore development of the spectrum with a commercial partner; \$15m provided for promotion of Māori language and culture (Mā Te Reo fund).	This spectrum was purchased in November 2009, and is being used for 2degrees' 3G services. The purchase arrangements provide comparability with other market players.
Out of scope			



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Meeting with WAI 2224 Claimants, 15 August 2012

To	Hon Amy Adams	Priority	High
Date	10 August 2012	Deadline	14 August 2012

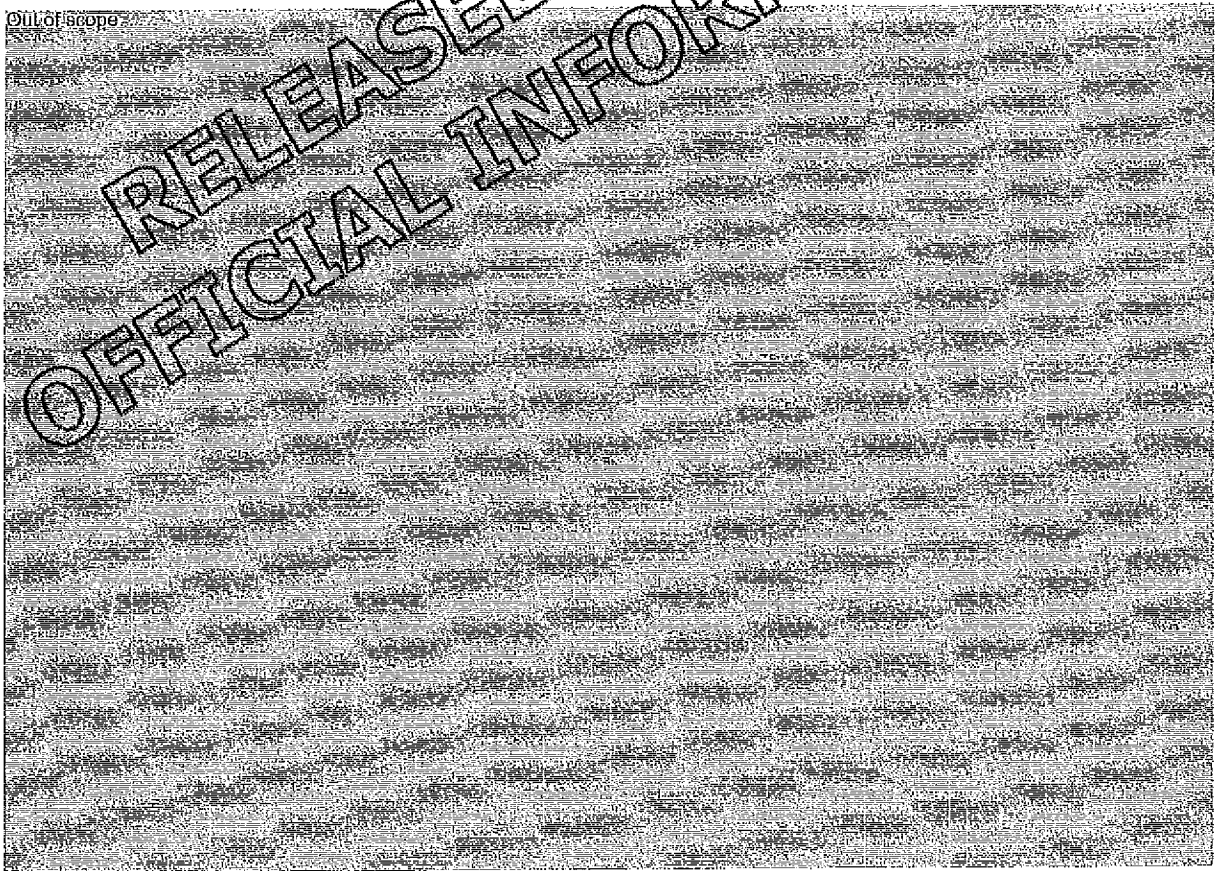
Purpose

- 1 This brief provides background information and speaking points for your upcoming meeting with Minister Sharples, the WAI 2224 Claimants and a coalition of other key Māori stakeholders, scheduled for 15 August at 7.00 pm.

Recommendation

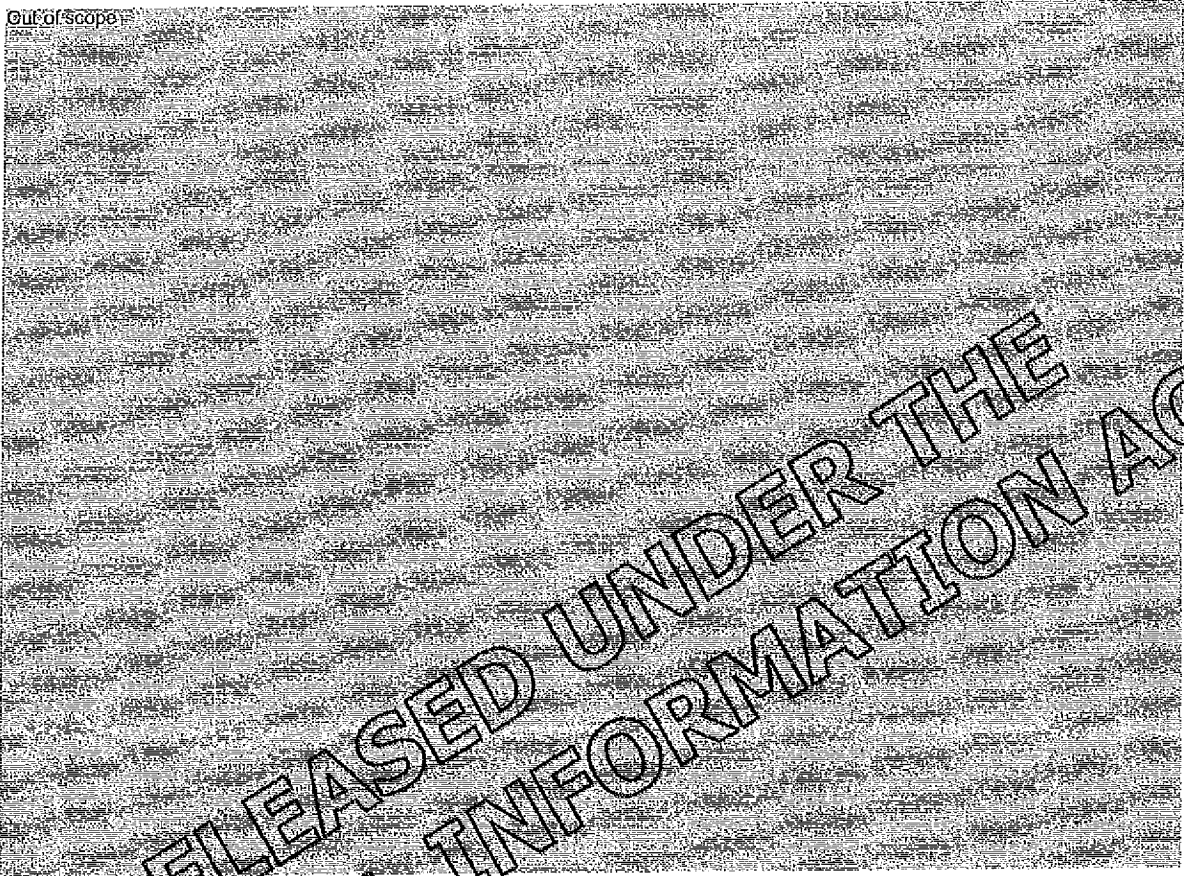
- 2 We recommend that you:
 - a. **Note** the contents of this briefing, and
 - b. **Note** the talking points provided.

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Out of scope



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Meeting Attendees

7 You and Dr Sharmles are meeting with a coalition of Māori stakeholders. The coalition includes:

- a. Te Pūtahi Paoho – Tuwhakairiora (Tu) Williams (Chair)
- b. Hautaki Limited – Antony Royal and Mavis Mullins
- c. Te Huarahi Tika Trust – Daphne Luke
- d. WAI 2224 Claimants
 - i. Te Huirangi Waikerepuru and Piripi Walker, for Nga Kaiwhakapumau i te Reo
 - ii. Whatarangi Winiata for New Zealand Māori Council
 - iii. Graeme Everton for WAI 776 Claim

8 Short biography notes are attached in Annex 2.

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25 Annex 1 sets out the previous Waitangi Tribunal claims on the radio spectrum, the reaction of the Courts, and the response of the Crown. Crown Law has previously advised that ^{§9(2)(f)}

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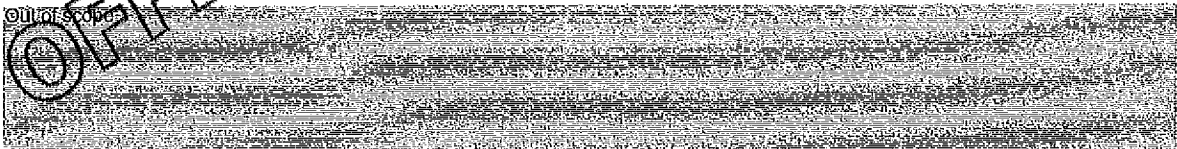


Len Stirling
Manager, Radio Spectrum Policy & Planning
Energy and Communications Branch

Hon Amy Adams
Minister for Communications and
Information Technology

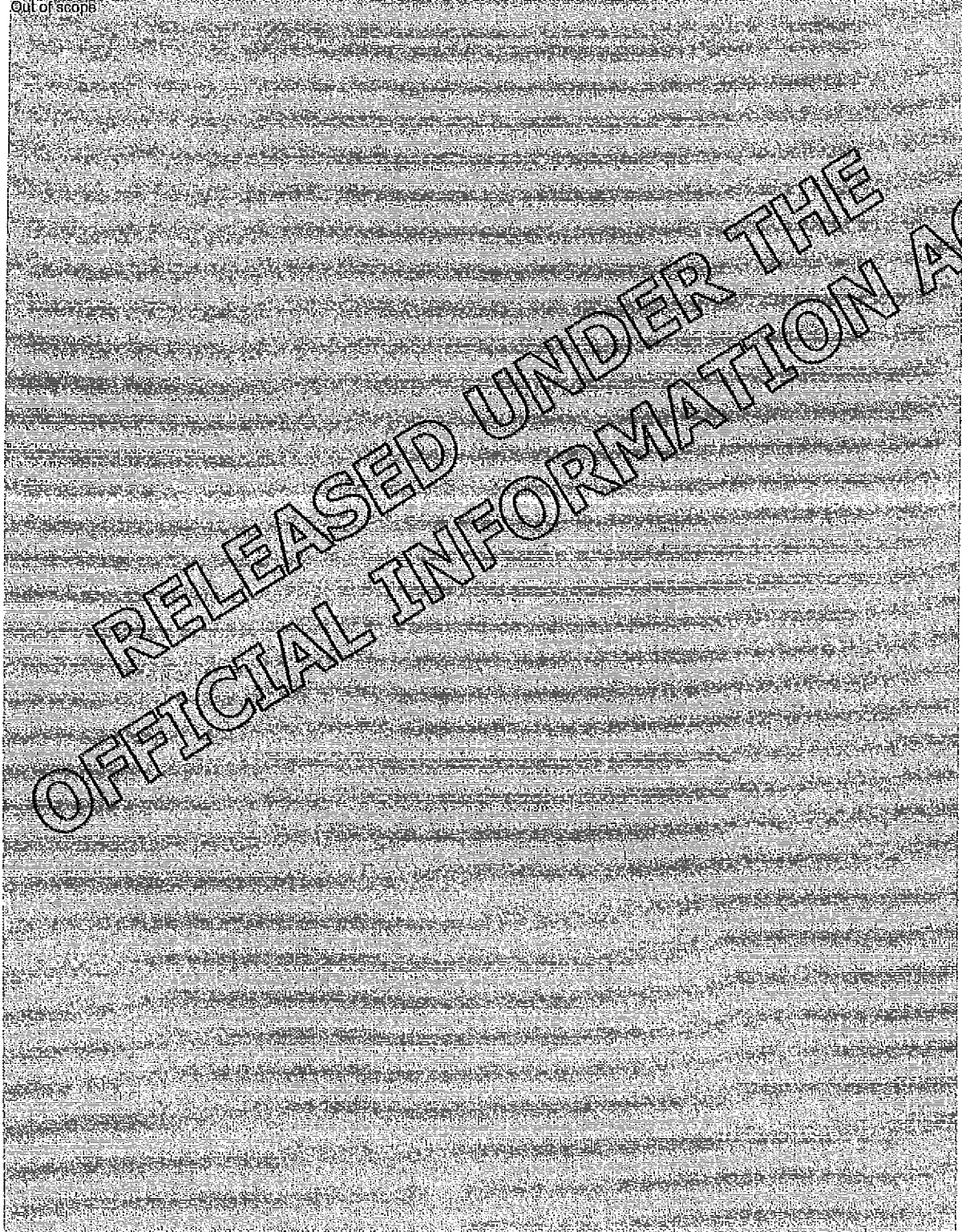
§9(2)(a)

Out of scope



Annex 1: Background on Māori Interest in Spectrum

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Related Policy Decisions

- 14 Following the Waitangi Tribunal's findings in 1990, and again in 1999, Government provided some specific spectrum allocations or reservations, and significant new funding for Māori development. The policy objectives of these decisions were (i) to promote the Māori language and culture through broadcasting, and (ii) to promote Māori participation in the knowledge economy.

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20

Out of scope

(ii) Promoting Māori participation in the knowledge economy

21 In 2000, the Government set aside from the 3G spectrum auction a block to be used for the benefit of Māori⁶. It similarly reserved a block from the 2007 auction of spectrum suitable for wireless broadband. A charitable trust, Te Huarahi Tika, is to use dividends from commercialisation of the spectrum to fund ICT skills development and promote ICT research and development that would benefit Māori.

22

Out of scope

23

Out of scope

24 The trust's corporate arm, Hautaki, leveraged its purchase option over the 3G spectrum to secure a shareholding in what is now the third mobile network operator, 2degrees. The company launched its 2G services in August 2009, following its purchase of 2G spectrum from Telecom and Vodafone, and launched 3G services in August 2010 using Hautaki's spectrum. 2degrees agreed to pay the purchase price to Hautaki in return for exclusive rights to use the spectrum royalty-free; 2degrees has also agreed to bear all costs of any future renewal of the spectrum rights (commercial-in-confidence).

25

No dividends have yet been returned to the trust from Hautaki's shareholding in 2degrees, which still faces capital expenditure challenges. The trust has therefore not yet been able to fulfil any of its training or research objectives. The telecommunications industry is capital-intensive, and it may be several years before 2degrees shareholders see a return on their investments.

⁶ In order for this policy decision to comply with the Human Rights Act 1993 and the Bill of Rights Act 1990, there was a requirement to show that Māori were disadvantaged with respect to participation in the knowledge economy compared to non-Māori, and that there was a real connection between the allocation of spectrum and the amelioration of the disadvantage.

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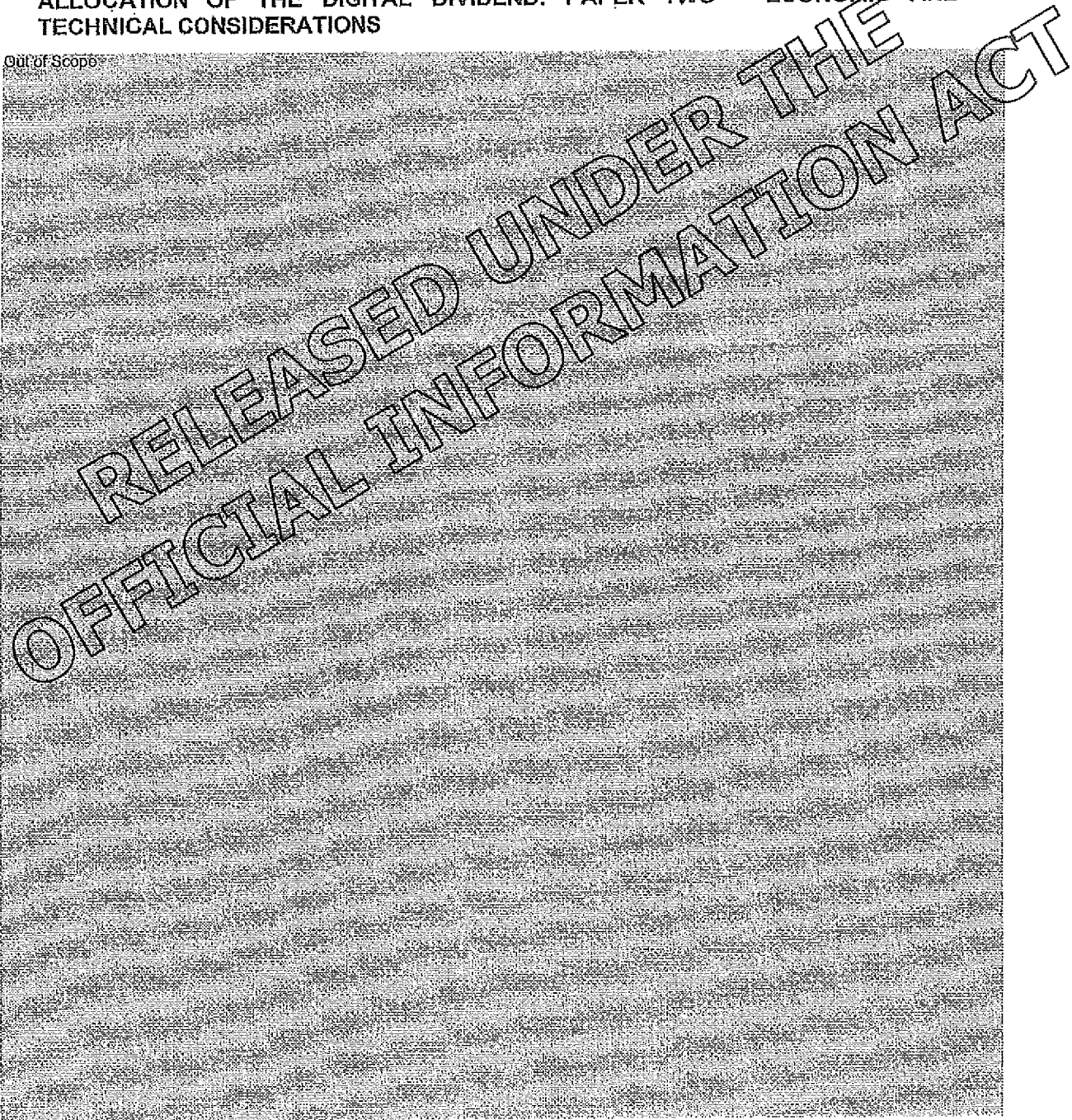
COMMERCIAL IN CONFIDENCE

OFFICE OF THE MINISTER
FOR COMMUNICATIONS AND INFORMATION TECHNOLOGY

The Chair
Cabinet Economic Growth and Infrastructure Committee

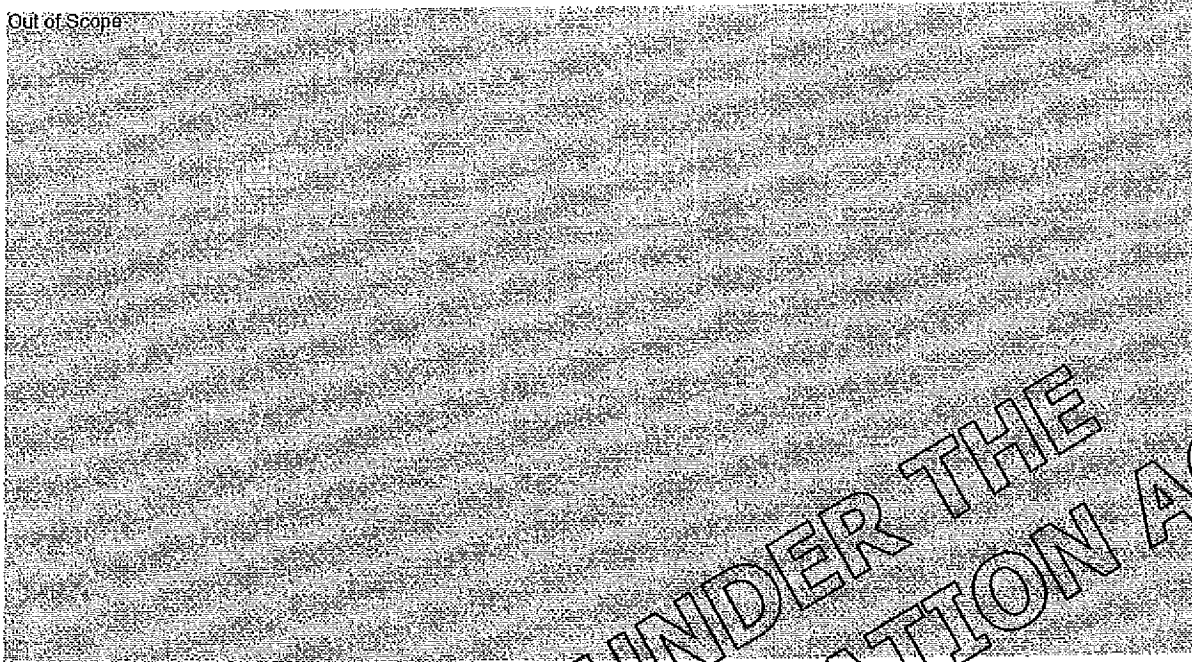
ALLOCATION OF THE DIGITAL DIVIDEND: PAPER TWO - ECONOMIC AND
TECHNICAL CONSIDERATIONS

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B. Policy Considerations

Competition Safeguards

28 Spectrum is a key resource in the provision of mobile communications, with the quantity of spectrum available to an operator linked to the quality and capacity able to be offered in the network. Major spectrum allocations have the potential to determine the long term shape of the market.

29 Competition safeguards seek to prevent or minimise behaviours such as spectrum speculation, hoarding, or blocking, where the purchase is intended simply to deny others access. Such practices can be detrimental to the market, delaying rollout of services to consumers and preventing uptake, from which new economic activity and growth will come.

30 It is therefore appropriate to include conditions to encourage a competitive allocation. I recommend two competition safeguards:

- a. acquisition limits, which limit the maximum amount of spectrum that any purchaser can hold. These are designed to ensure a competitive allocation of spectrum rights by preventing larger entities from blocking acquisition by smaller entities or new entrants to the market.
- b. implementation requirements, also known as 'use or lose,' to help guide spectrum allocation to parties most likely to deploy services and minimise spectrum hoarding or speculation.

² LTE allows carriers of 1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz and 20 MHz. The larger carriers increase the speed able to be offered to users. In real-world conditions, it is likely that average speeds for users will be around 20 Mbps with a 10 MHz carrier, 30 Mbps with 15 MHz, and 40 Mbps with 20 MHz.

- 31 Imposition of such competition safeguards may reduce the fiscal return from an auction. However, such safeguards are important to ensure that the full economic benefits are achieved, and are increasingly recognised as necessary by the market.

Acquisition Limit

- 32 Acquisition limits are applied as *ex ante* measures to ensure that spectrum auctions are not used as a mechanism to force smaller players to exit the market. The key goal of an acquisition limit in this auction is to ensure that a minimum number of parties are able to acquire sufficient spectrum to operate a competitive service.
- 33 In its consultation with industry, the Ministry originally proposed setting an acquisition limit of 2x15 MHz (one third of the available spectrum), but allowing one party to exceed the cap to acquire 2x20 MHz. This would allow at least three operators sufficient spectrum to compete, but would also allow flexibility in how much spectrum each operator acquired. Submitters were generally opposed to such an approach, as it was seen to bed in a long-term competitive disadvantage for at least one party. The proposal also caused some confusion among operators. The major operators appeared to prefer a straight 2x15 MHz limit.
- 34 [REDACTED]
- 35 The mobile market consists of two stronger market players, and a more recent entrant in a weaker position. If a 2x20 MHz cap was allowed, the most likely outcome of an open auction would be for the two dominant firms to purchase 2x20 MHz spectrum each, leaving only 2x5 MHz for the weaker firm. I consider that this would have a long term detrimental effect on competition in the market, and would undermine the ongoing viability of 2degrees.
- 36 Accordingly, the Ministry and I consider that a simple 2x15 MHz acquisition limit is preferable. This would ensure a minimum of three operators are able to acquire spectrum, maintaining the current competitive mobile market and reducing the risk of a reduction in mobile operators as a result of the auction.
- 37 Under such a cap, it is possible that 2degrees may decide to purchase only 2x10 MHz rather than the full 2x15 MHz allowed by the acquisition limit. If this occurs, and a fourth bidder does not eventuate, I propose to allow the acquisition limit to be relaxed to 2x20 MHz. This would allow any unsold spectrum to be auctioned to bidders whose demand may exceed that of 2degrees.
- 38 This approach would ensure that at least three parties are able to acquire spectrum, provide some protection to 2degrees against blocking moves from dominant competitors, and offer flexibility should some spectrum remain unsold under a 2x15 MHz cap.
- 39 I recommend that these limits remain in place for a minimum of three years, to allow certainty at the time of allocation and provide the expectation that competitive services will be developed. After three years, they may be continued, relaxed, or allowed to expire based on an assessment of competition in the market at that point.

Implementation Requirements

- 40 The Ministry consultation proposed an implementation requirement to provide 50% population coverage nationwide, within five years. The general approach was supported by industry, though several parties considered that it was too light handed, allowing parties to purchase valuable nationwide spectrum rights, but only deploy services in the three major centres.
- 41 I propose that the implementation requirement be designed to ensure timely deployment of services across New Zealand, not just focused on the major cities. I considered several options, including requiring a "roll-out ratio" for urban and rural cellsites, and establishing a community cell-site scheme similar to one currently operated by Vodafone.
- 42 The best solution is one that provides a comprehensive network across urban and rural New Zealand. To the extent that it is economically feasible and what should be required as a baseline for all operators, as well as what should be left to competitive pressure will be considered by a subcommittee of Ministers.
- 43 I propose that the minimum requirement be no less than 50% nationwide population coverage within five years as originally proposed, and to include 25% population coverage within any given region (based on the regional council boundaries). This approach will be easily understood by industry and should be relatively easy for nationwide operators to achieve, while still ensuring that services are not deployed solely in the major cities. The exact design of this would benefit from additional consultation with industry, which can be undertaken at the same time as consultation on final auction design.
- 44 I propose that Cabinet agree in principle to the use of an implementation requirement, and delegate decisions on the final design to a subcommittee of Ministers as mentioned above, following consultation.

Set Asides for Public Policy Objectives

45 Out of Scope



- 46 Both of these options would set aside spectrum for potential use, which may or may not eventuate. Such an approach denies access to spectrum by commercial operators seeking to use it now, creates artificial scarcity and carries a significant opportunity cost. It would affect the quality of services able to be deployed using the 700 MHz band, with the effects likely to be disproportionately felt by the weaker recent market entrant, 2degrees.

47 Out of Scope



New Entrant

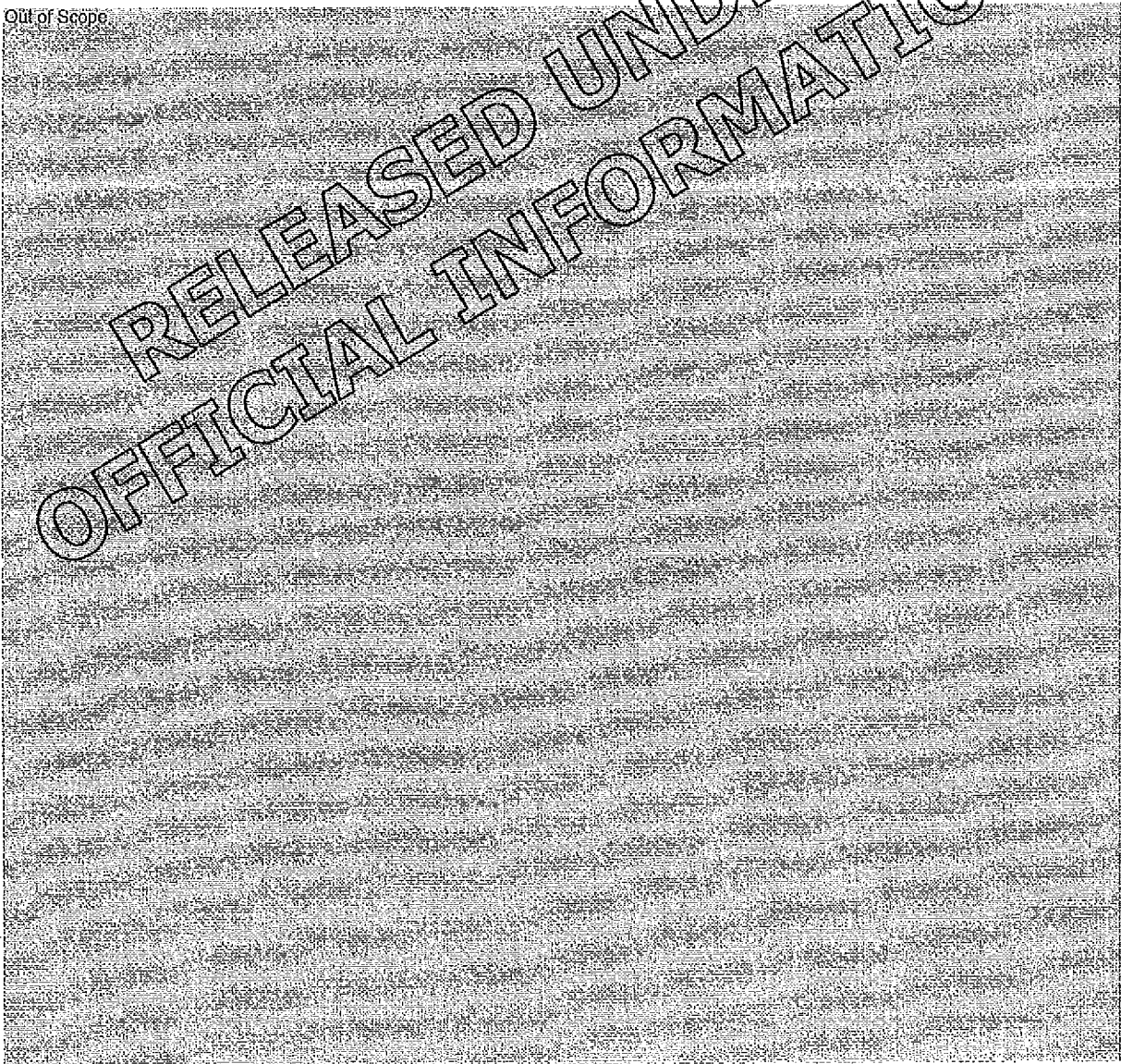
- 48 Setting aside spectrum for a new entrant is not recommended, as
- a. it is unlikely that the market could sustain a fourth nationwide mobile operator;

- b. I am advised that providing spectrum only in the 700 MHz band would not be sufficient to allow for a comprehensive service to compete with other major operators;
- c. The party often considered to be the most likely new entrant, TelstraClear, is now in merger proceedings with Vodafone, reducing the likelihood of it entering the market;
- d. I am not convinced that any other suitably-resourced mobile operator is seeking to enter the market.
- e. Any set-aside is likely to disproportionately affect the recent market entrant 2degrees, and may in fact negatively impact on competition in the market.

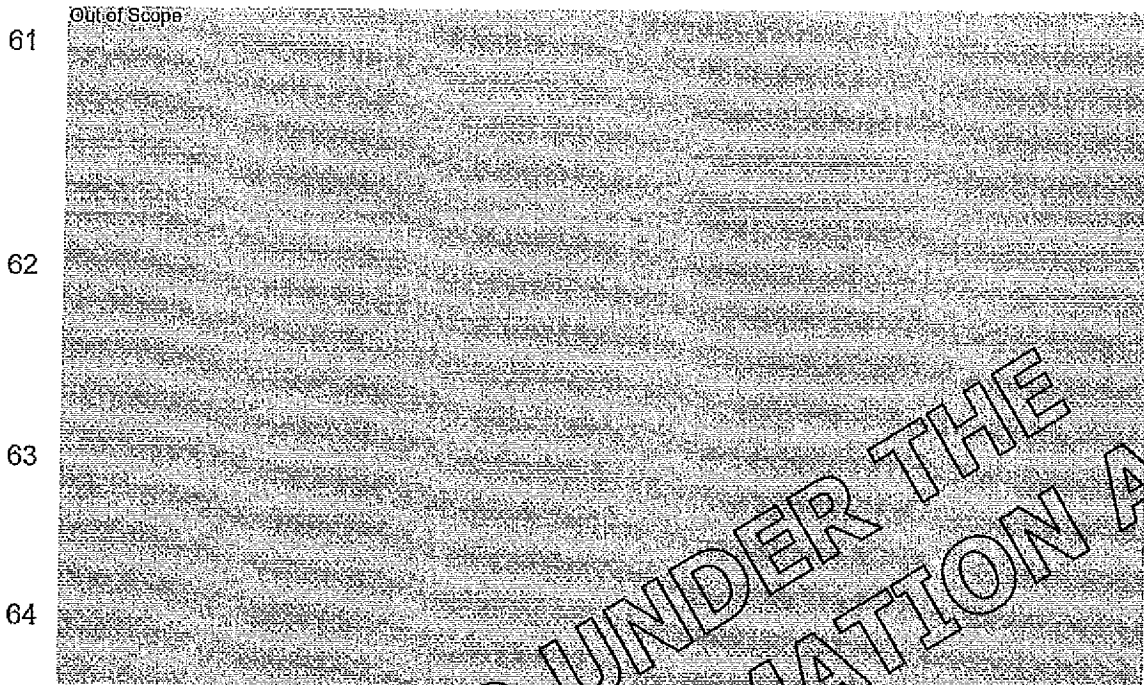
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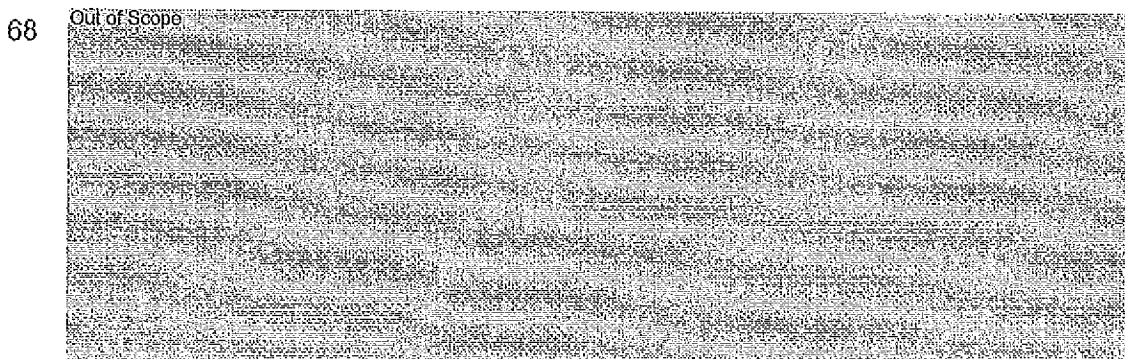


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Setting Reserve Prices

- 65 In allocating spectrum by auction, there is some financial return to the Crown. The primary goal of the auction is not to raise revenue, but rather to determine the party who values the spectrum the most. It will, however, be important to ensure that the spectrum is allocated for a reasonable price to ensure a fair return to taxpayers.
- 66 As mentioned in paragraph 36, I have recommended an initial acquisition limit of 2x15 MHz, to ensure a competitive allocation between at least three parties, supporting longer term market competition in mobile services. The longer term economic benefits of such a policy are compelling; however, there is a risk that it will significantly reduce competition at auction, as only three nationwide mobile operators are currently in operation. A likely outcome is that the spectrum will be split between the three operators at a price near to the reserve price; just high enough to outbid the second tier operators, whose willingness to pay is likely to be substantially lower.
- 67 It will be therefore essential to carefully set the reserve prices at a level which will see the spectrum sold at a fair price – which means that the reserve prices may be set comparatively high compared to previous allocations.



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