

Public version

Vodafone New Zealand Limited: Clearance Application

9 October 2013

The Registrar
Business Acquisitions and Authorisations
Commerce Commission
PO Box 2351
Wellington

Pursuant to section 66(1) of the Commerce Act 1986 notice is hereby given by Vodafone New Zealand Limited or any interconnected body corporate seeking clearance of a proposed business acquisition of one additional lot (2x5MHz) of management rights in the 700MHz spectrum band in circumstances where it has already acquired three lots (2x15MHz) of management rights in this same spectrum band.

Confidentiality is asserted in respect of the information in this application that is highlighted in red and contained in square brackets, i.e. []

EXECUTIVE SUMMARY

The application

- i. Vodafone New Zealand Limited or any interconnected body corporate ('Vodafone', 'we' or 'us'), seeks clearance to acquire from the Crown management rights to one lot ('2x5MHz') of management rights in the band of radio spectrum within the frequency ranges 703-748 MHz and 758-803 MHz ('the 700MHz spectrum band') in the Supplementary Phase ('Further Round') of the auction ('the Auction') being run by the Ministry of Business, Innovation and Employment ('MBIE'). The proposed acquisition will occur in circumstances where we have already bid successfully for management rights to three lots (2x15MHz) in the same spectrum band of 700MHz spectrum in the Clock Phase ('Initial Round') of the Auction.
- ii. We are applying for clearance for the proposed acquisition pursuant to section 66(1) of the Commerce Act ('CA86') to account for the possibility that Vodafone may have the opportunity to acquire an additional 2x5MHz in the course of the Auction. Whether or not this opportunity in fact arises will depend on the outcome of the Initial Round, and commercial decisions about whether to participate, and if so on what basis, in any subsequent rounds. We consider that the proposed acquisition would not infringe section 47.

Policy context in which acquisition will occur

- iii. The Government has decided to allocate the 700MHz spectrum band via the Auction, which will commence on 29 October 2013. This decision and other decisions relating to the allocation of the 700MHz spectrum band are not open to change.¹
- iv. MBIE has specific policy objectives relating to the Auction, including:
 - encouraging broad participation, including by new or non-cellular operators; and
 - ensuring that successful bidders are incentivised to use 700MHz spectrum to deploy services as quickly as possible.
- v. Consistent with these objectives:
 - The reserve price for each lot of management rights for 700MHz spectrum is set at \$22million (plus GST).
 - An acquisition limit of 3 lots (2x15MHz) applies in the Initial Round of the Auction. This limit can be increased to 4 lots (2x20MHz) in the Further Round if some lots remain unsold after the Initial Round.
 - Successful bidders can pay for management rights by instalments over five years.
 - Deployment and coverage obligations are structured in a manner that is intended to encourage participation.
- vi. These features of the Auction provide ample opportunity for all three existing mobile operators to obtain the same number of lots of management rights for 700MHz spectrum.

¹ See the *700MHz: Auction Catalogue* (11 September 2013) ('the Auction Catalogue') at Annex C: Transaction Documents. These decisions also confine the scope of any plausible counterfactual, as reflected below in Part 4: Counterfactual.

Transaction rationale

- vii. Vodafone has invested substantial sums in developing a market leading national mobile telecommunications network. The nationwide deployment of 4G² (LTE³ and LTE-A⁴) services is the next step in the evolution of our network. 4G services deliver very high peak data throughput,⁵ greater data reliability and, importantly, low latency,⁶ which is superior for many business and consumer applications.
- viii. We have already made Vodafone 4G services available to more than 1 million New Zealanders using our existing 1800MHz spectrum holdings. However, it is not economically efficient to use 1800MHz spectrum to deliver 4G services in large, sparsely populated rural areas. This approach would involve higher costs because more infrastructure (e.g. additional cell sites) is required to achieve sufficient coverage in these areas.
- ix. The 700MHz spectrum band will enable Vodafone to deliver 4G services in rural areas. A minimum of 2x10MHz of 700MHz spectrum is necessary in order to obtain the necessary coverage and economically deliver 4G services to consumers across New Zealand. In addition, larger blocks of 700MHz spectrum (i.e. 2x15MHz or 2x20MHz) allow mobile providers to offer faster speeds than 2x10MHz.
- x. The proposed acquisition involves Vodafone obtaining additional 700MHz spectrum beyond what is necessary to enable the coverage needed to deliver 4G services. It would see Vodafone obtain an additional 2x5MHz in circumstances where it has already obtained 2x15MHz (i.e. 2x20MHz in total). For Vodafone, [

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Market context in which acquisition will occur

- xi. The proposed acquisition concerns 700MHz spectrum to be used in providing mobile telephony services, specifically 4G services.⁷ Mobile telephony services are currently provided in New

² Fourth Generation cellular telephony and data systems designed to carry high speed data, including voice signals converted to data. 4G systems are designed to offer higher data transfer speeds than 3G. Examples of 4G systems include Long Term Evolution, Long Term Evolution (Advanced) and WiMax.

³ Long Term Evolution refers to a 4G technology which offers even faster data transfer speeds than 3G/HSPA, increased network capacity.

⁴ Long Term Evolution (Advanced) is an enhancement of the LTE standard. LTE-A improves the capacity and coverage, and enables even higher data rates.

⁵ The data speed actually provided by a cellular system depends on a number of technical factors (e.g. channel bandwidth, modulation scheme etc.). On an LTE network when everything else is equal, a higher bandwidth will generally deliver a proportionally higher speed than a lower bandwidth.

⁶ Latency is a measure of time delay experienced in a system. In communications, latency limits the maximum rate that information can be exchanged and transmitted. Low latency is important many applications such as video conferencing and real-time gaming.

⁷ See Draft *700MHz Management Rights Agreement*, clause 8.3(b) at Annex C: Transaction Documents: "The Purchaser, as a minimum, must have implemented by 1 January 2019 a continuous and on-going

Zealand by mobile network operators, namely Vodafone, Telecom and Two Degrees Mobile Limited ('2Degrees'), and by Mobile Virtual Network Operators ('MVNOs'),⁸ including Callplus Limited, Compass Communications, Orcon Limited and others.

- xii. The Auction's terms and conditions require existing mobile operators to expand coverage and upgrade existing cell sites in rural areas to deliver 4G services within five years.⁹ These requirements are designed to ensure that at least 90 per cent of New Zealanders have access to a 4G network within this period of time.¹⁰
- xiii. New Zealand telecommunications markets in which Vodafone participates are highly competitive.¹¹ The proposed acquisition does not alter either the dynamics or intensity of competition in these markets. It does not alter existing operators' abilities to compete or change the prospect of entry by a new operator.¹²

Acquisition will not result in a substantial lessening of competition

- xiv. For the reasons set out in this application for clearance, we believe it is sufficient to assess the proposed acquisition with reference to the national market for spectrum management rights for mobile telephony uses. Provided that sufficient spectrum remains available to allow any other operator to provide services in competition with Vodafone, the proposed acquisition cannot have any material effect on competition in any downstream market. Competition in downstream markets is unaffected by the proposed acquisition. In any plausible scenario, other operators will have sufficient spectrum holdings to enable them to compete effectively.

Clearance should be granted

- xv. The proposed acquisition will not, and will not be likely to, result in any substantial lessening of competition in any market. Accordingly, clearance should be given.

telecommunications service that... (b) uses, as a minimum equipment standard, an OFDM-based system such as: (a) LTE (Long Term Evolution) ...; or (b) WiMax..."

⁸ An MVNO does not own network infrastructure or spectrum licenses. Instead, MVNO's have business arrangements with traditional mobile network operators to buy minutes of use for sale to their own customers.

⁹ See the Auction Catalogue and *700MHz Implementation and Coverage Requirements* (at http://www.rsm.govt.nz/cms/pdf-library/policy-and-planning/current-projects/digital-dividend-auction-700mhz/700_MHz_Implementation_and_Coverage_Requirements_Summary.pdf)

¹⁰ See <http://www.beehive.govt.nz/release/radio-spectrum-auction-details-announced>.

¹¹ See, generally, Commerce Commission *Annual Telecommunications Monitoring Report 2012* (April 2013) ('the 2013 Monitoring Report'); Commerce Commission Determination Vodafone New Zealand Limited and TelstraClear Limited [2012] NZCC 33 (29 October 2012) ('the Vodafone/TCL Determination') and IDC Market Analysis Note *Too Big to Fail: IDC NZ Telecommunications Market Analysis and Forecasts 2013-2017* (September 2013).

¹² To the extent that prospects of new entry are low, this is due to structural features of the market that are entirely unrelated to, and not affected by, the proposed acquisition.

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PART 1: TRANSACTION DETAILS¹³

A The acquirer: Vodafone New Zealand Limited

1. This notice is given by Vodafone New Zealand Limited. Vodafone's contact details are:

Vodafone New Zealand Limited
Level 1
20 Viaduct Harbour Avenue
Private Bag 92 161
Auckland 1030

Attention: Tom Thursby
Lead Counsel – Competition & Regulatory
Vodafone New Zealand Limited
Level 1
160 Lambton Quay
PO Box 1271
Wellington 6011
Telephone: 04 9203654 / 029 7733654
Email: tom.thursby@vodafone.com

B The vendor: Her Majesty the Queen, in right of the Government of New Zealand

2. Her Majesty the Queen, in right of the Government of New Zealand ('the Crown'), is the vendor of management rights to the 700MHz spectrum band, acting by and through Len Starling, Manager Radio Spectrum Policy and Planning, Infrastructure and Resources Markets Branch, MBIE, acting under the authority of the Chief Executive of MBIE.
3. The Crown's contact details, in this instance, are:

MBIE
33 Bowen Street
PO Box 1473
Wellington 6140

Attention: Len Starling
Manager, Radio Spectrum Policy and Planning
MBIE
Telephone: 04 4720030
Email: len.starling@mbie.govt.nz

¹³ Sub-parts A-D address Items 1-4 in the Commission's *Form for Notice under section 66*. Sub-part F addresses Item 5. Sub-part G addresses Item 6. Sub-part H addresses Item 7.

C Interconnected and associated companies

4. Vodafone is 100% owned (indirectly) by Vodafone Group Plc. A copy of the group structure chart is attached as Annex B.
5. There are no interconnected or associated companies between the parties.

D The proposed acquisition

6. MBIE intends to distribute nine lots of management rights in the 700MHz spectrum band via the Auction. Each lot consists of management rights for 2x5MHz.¹⁴ These lots are described in the Auction Catalogue.
7. The Auction will commence at 10.00 am on 29 October 2013. There is no deadline for its completion. All prospective bidders were required to register with MBIE by 4pm on 3 October 2013. We understand that four prospective bidders have done so. The Auction will be divided into the following discrete stages, which are explained in the Auction Catalogue and the document *700MHz Auction Process – MBIE Proposal*¹⁵:
 - a. Clock Phase: All bids must be unconditional. An initial 'acquisition limit' will be set at three lots of management rights (i.e. 2x15MHz) at this stage of the Auction. Under this limit, a minimum of three bidders will be able to successfully acquire spectrum at an auction, provided the reserve price is met. No bidder can acquire more than 2x15MHz at this stage.
 - b. Supplementary Phase: If demand in the Clock Phase is less than the available nine lots, a Supplementary Phase will be used to allocate the excess lot(s) and there is an opportunity for bidders who have participated in the prior stage of the Auction to acquire an additional 2x5MHz. The acquisition limit will be relaxed to 2x20 MHz to avoid spectrum remaining unsold if there is a willing purchaser. All parties that bid in the Clock Phase are eligible for bidding in the Supplementary Phase. Bids at this stage must also be unconditional, however we are advised that [

^{16]}
 - c. Assignment Phase: In this phase lots are allocated to successful bidders based on their preferred 'location' of lots within the 700MHz spectrum band and their determination of the value of particular allocations. Prices bid at this stage are additional to bids made at earlier phases. This is a single round where bidding is optional. MBIE's auction manager assigns lots at this stage to achieve the highest value combination.

¹⁴ Each lot comprises four discrete management rights. The first two management rights listed for each lot are 'early management rights'. These management rights will be available from 1 January 2014 and expire on 11 March 2020. If a successful bidder does not meet the implementation requirements outlined in the Management Rights Deed, they will not be renewed. The second two management rights listed for each lot are 'conditional management rights'. These management rights will be available from 12 March 2020 and expire on 28 November 2031. Where implementation requirements have been met as required in the Management Rights Deed, conditional management rights will be created and transferred to the relevant successful bidder.

¹⁵ See Annex C: Transaction Documents.

¹⁶ [

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8. The proposed acquisition will see Vodafone, or any interconnected body corporate, acquire from the Crown management rights to 2x5MHz of 700MHz spectrum in the Supplementary Phase of the Auction ('the Further Round') in circumstances where Vodafone has already bid successfully for management rights to 2x15MHz of 700MHz spectrum in the Clock Phase of the Auction ('the Initial Round').
9. The outcome of the Initial Round will determine whether Vodafone in fact has the opportunity to acquire 2x20MHz management rights (i.e. the Further Round will only occur if 700MHz spectrum is unsold following the Initial Round). This opportunity only arises if there is insufficient demand for 700MHz spectrum at this stage. In our view, this is only likely to occur if 2Degrees decides that it does not wish to acquire 2x15MHz in the Clock Phase for whatever reason despite having had a full opportunity to do so, and if any fourth bidder does not ultimately bid successfully.
10. For the purposes of this application it must be assumed that in any factual Vodafone will hold management rights for 2x20MHz of 700MHz spectrum from 1 January 2014 until 28 November 2031.
11. Spectrum management rights are deemed to be business assets pursuant to section 138(1) of the Radiocommunications Act 1989 ('RCA89'). The acquisition of these rights is therefore subject to relevant provisions in the CA86.
12. Vodafone considers that the acquisition of management rights for 2x20MHz will not infringe section 47 CA86.

E Background

Use of spectrum in mobile telephony

13. 'Spectrum' refers to a collection of various types of electromagnetic radiations on different wavelengths on which all wireless communications travel. Different wavelengths have different properties and are suitable for different applications. In very simple terms, some spectrum bands are unsuited to particular applications and, in contrast, application performance may be optimised using other bands.
14. In very general terms, signals sent via spectrum in lower frequency ranges (e.g. 700MHz spectrum) have greater 'propagation' (reach) than signals sent using spectrum in higher ranges (e.g. 2GHz spectrum). Under the same conditions, a signal transmitted via lower frequency will travel further than a signal transmitted using a higher frequency. The propagation qualities of particular spectrum bands are highly relevant to the provision of mobile telephony services in large rural areas with low population densities, as explained in paragraphs 18 *et seq.* below.
15. Existing mobile operators' current holdings of all spectrum bands that can be used to provide mobile telephony services, and the uses to which these holdings are now put and could be put in future is shown in Table 1 below.

Table 1: Existing mobile operators' current holdings and uses of mobile telephony spectrum

	700MHz	850MHz	900MHz	1800MHz	2100MHz	2600GHz
Current Use	4G	2G & 3G	2G & 3G	2G & 4G	3G	4G
Possible Future use	4G or 5G ¹⁷	3G, 4G or 5G	3G, 4G or 5G	4G or 5G	3G, 4G or 5G	4G or 5G
Vodafone			2x15MHz	2x25MHz	2x25MHz	2x15MHz
Telecom		2x15MHz		2x25MHz	2x15MHz	2x20MHz
2Degrees			2x10MHz	2x25MHz	2x15MHz	

16. As Table 1 shows, 4G services can be delivered via various spectrum holdings and do not necessarily require 700MHz spectrum. Any existing operator could provide 4G services using their current spectrum holdings (Vodafone is currently providing 4G services in certain areas in exactly this way). However, providing 4G services nationally, including in rural areas, without 700MHz would be more expensive, e.g. more cell-sites would be required to achieve the same coverage. In addition, an operator providing services on this basis may only be able to achieve limited peak speed in certain areas.
17. Internationally, operators are increasingly creating portfolios of spectrum and using the appropriate frequencies to meet specific coverage and capacity needs. In New Zealand, this challenge is less pronounced because there is more spectrum available for use for mobile telephony services to a significantly smaller population than other jurisdictions (particularly Europe). In addition, the distribution of spectrum in New Zealand is more balanced between operators. By way of contrast, some UK operators have very little or no sub-1GHz spectrum. The greater availability and more balanced distribution of New Zealand spectrum gives operators far greater scope to acquire and configure spectrum in a manner that best meets their needs.

Features of 700MHz spectrum

18. The benefits of Vodafone's 4G services are being realised now in certain urban areas of New Zealand, and we already have a significant 4G footprint covering more than 1 million of the New Zealand population. The higher population densities of urban areas enable 4G services to be deployed using higher frequency spectrum bands such as 1800MHz or 2.6GHz spectrum bands and our current 4G services are all delivered using existing spectrum holdings.
19. In contrast, it is difficult for any mobile operator to economically deliver 4G services using higher radio frequency bands over large geographic areas with sparse populations, such as New Zealand rural areas. In these areas, lower frequency bands have the propagation qualities necessary to achieve coverage with fewer sites. The economics of providing mobile coverage, particularly over large areas, therefore become much better with lower frequency spectrum. In reality, this is the

¹⁷ The next major phase of mobile telecommunications standards beyond the current 4G standards.

only spectrum band currently available that can economically deliver 4G services to rural areas.¹⁸ The acquisition of 700MHz spectrum band is therefore necessary to enable 4G services to be provided in these areas.¹⁹

Obligations on successful bidders for 700MHz spectrum

20. The Auction Catalogue sets out terms and conditions that will apply to the Auction, and records a number of decisions made by Government that are not open for further consultation, including decisions regarding the method of allocating 700MHz spectrum and requirements to ensure that services are deployed across New Zealand in a timely manner.
21. Successful bidders must use spectrum acquired to improve general mobile coverage (using 700MHz spectrum, other spectrum holdings or both in combination).²⁰ In addition, they will be subject to an 'Implementation Requirement' to deliver services via the 700MHz spectrum band and, where relevant, an 'Additional Coverage Obligation'. In combination, these requirements are intended to ensure that the spectrum is used and services are rapidly deployed across the country within a specific period of time. The extent of the overall requirement depends on the number of lots of management rights obtained, as shown in Table 2 below.²¹

Table 2: Implementation Requirements and Additional Coverage Obligations on successful bidders for management rights in 700MHz spectrum band

Quantity of spectrum purchased	New operator or existing non-cellular network operator: Implementation requirement (using 700 MHz)	Existing cellular network operator: Implementation requirement (using 700 MHz)	All successful bidders: Additional coverage obligation (using any spectrum)
2x5MHz	50% national population coverage within five years.	Upgrade 75% of existing rural cell-sites to 4G using 700 MHz (to a maximum of 300 cell-sites).	N/A
2x10MHz	50% national population coverage, including at least 30% population coverage within any given region, within five years.	Upgrade 75% of existing rural cell-sites to 4G using 700 MHz (to a maximum of 300 cell-sites).	N/A
2x15MHz	50% national population coverage, including at least 30% population coverage within any given region, within five years.	Upgrade 75% of existing rural cell-sites to 4G using 700 MHz (to a maximum of 300 cell-sites).	5 new coverage cell-sites (base stations) per year, for first five years.
2x20MHz	75% national population coverage, including at least 50% population coverage within any given region, within five years.	Upgrade 75% of existing rural cell-sites to 4G using 700 MHz (to a maximum of 300 cell-sites).	10 new coverage cell-sites (base stations) per year, for first five years.

22. Following the Auction, 'provisionally successful' bidders must contractually commit (via a Management Rights Agreement with the Crown²²) to comply with particular terms, including Implementation Requirements and relevant Additional Coverage Obligations.

¹⁸ Vodafone submission to MBIE *700MHz Auction: Consultation on Auction Design and Implementation Requirements, and Execution* (24 June 2013) ('the Vodafone submission'), paragraph 3.

¹⁹ 4G services could however be provided with a smaller holding of 700MHz spectrum or, as noted above, with no 700MHz spectrum at all. However, it would be difficult to deliver 4G services on a national basis in this way.

²⁰ MBIE Consultation Document, paragraph 50. The expectation is that successful bidders will use 700MHz spectrum to deliver 4G services – see Footnote 7 above.

²¹ See *700MHz Implementation and Coverage Requirements*.

²² See Annex C: Transaction Documents

F Commercial rationale for transaction

Reasons for the proposed acquisition of 2x20MHz by Vodafone

23. A key goal for Vodafone is [

] The proposed acquisition is [

]

24. Our current ambition is that any management rights to the 700MHz spectrum band acquired by Vodafone will []. There are strong incentives for Vodafone, as a partner in the Rural Broadband Initiative ('RBI'),²³ [

]

25. 700MHz spectrum will enable Vodafone to provide coverage and deliver 4G services, together with better peak speed, higher site capacity²⁴ and improved 'indoor coverage' in urban areas that 700MHz spectrum enables.

26. As explained above, a minimum of 2x10MHz in the 700MHz spectrum band is necessary to enable the coverage necessary to enable 4G services across rural areas.

27. Additional 700MHz spectrum in excess of 2x10MHz does not give any incremental coverage benefits. However, a higher holding delivers a tangible speed benefit that [] To illustrate, 2x10MHz would enable peak speeds of up to 75Mbps (downstream). In contrast, 2x20MHz would enable speeds of up to 150Mbps (downstream). In addition, a higher holding enables more network capacity (we can accommodate more users on the network while maintaining certain service levels).

28. [

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29. [

²³ The Rural Broadband Initiative is a joint project between Vodafone and Chorus for delivery of faster broadband services to rural New Zealand communities. The RBI involves the building of new cell-sites funded by Government and the upgrade of existing sites. Vodafone is responsible to the building and upgrade of new infrastructure. The new or upgraded cell-sites will provide an improved wireless broadband service for rural communities. To connect to these services, end users need a modem and roof-top antenna provided by a number of retailers (including Vodafone). For further information refer to <http://www.med.govt.nz/sectors-industries/technology-communication/communications/broadband-policy/rural-broadband-initiative>.

²⁴ The total capacity provided by a cell site depends on the amount of spectrum allocated to that site. Larger the amount of spectrum allocated to a site, larger the capacity.

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G Transaction documents

30. The following documents relate to the transaction and are included in Annex C: Transaction Documents:

- a. *700MHz: Auction Catalogue* (11 September 2013);
- b. *700MHz Auction Process – MBIE Proposal*; and
- c. *Draft 700MHz Management Rights Agreement*.

H No material overseas dimension

31. The proposed acquisition does not involve any overseas dimension.

PART 2: THE INDUSTRY²⁵

A Services supplied by Vodafone

32. As noted in the Vodafone/TCL Determination, Vodafone is the largest mobile network operator in New Zealand both in terms of revenues and customers. Consistent with our strategy of differentiation based on network leadership and experience, we are continuing to expand network coverage and quality by extending the availability of Vodafone 4G services using our existing spectrum. In addition, under the RBI Vodafone is the Government's selected provider of fixed wireless coverage. As noted above, []

Mobile services

33. The proposed acquisition is most obviously relevant to mobile services. We provide a nationwide 2G²⁶ (GSM²⁷) and 3G²⁸ (UMTS²⁹) mobile network, and a 4G (LTE) mobile network in certain areas. Our 2G and 3G mobile network has a similar geographic reach to Telecom's 3G network and provides coverage to approximately 97% of where New Zealanders ordinarily live, work and play. In addition, 1 million New Zealanders are now within the coverage of our 4G network.

Network infrastructure

34. Vodafone operates a range of networks assets and technologies to provide services to customers. These assets are primarily used for 'self-supply'. Vodafone also supplies co-location on cellular mobile transmission sites to other mobile operators. Under its agreements with Government relating to the RBI, Vodafone is required to allow other operators to collocate equipment on government funded RBI cell-sites.³⁰

Wholesale and retail services

35. We provide a range of wholesale and retail services to other market participants. We do not describe these services here because the proposed acquisition will not affect the terms on which Vodafone now supplies these services or the basis upon which it may do so in future. The Commission should note that Vodafone is required by its agreements with Government to ensure

²⁵ Sub-parts A-B address Item 8 in the Commission's *Form for Notice under section 66*. Sub-part C addresses Item 9. Sub-part D addresses Item 10. Sub-part E addresses Item 11.

²⁶ Second generation cellular telephone systems are designed primarily to carry voice converted into digital signals. (First generation systems carried voice as analogue signals). Examples of standard 2G systems include GSM, D-AMPS, and CDMA. 2G systems may be upgraded to carry data, for example, using the General Packet Radio Services (GPRS) standard. Such upgraded systems are commonly referred to as 2.5G.

Within New Zealand, two companies operate 2G systems. Vodafone and 2degrees both operate GSM networks,

²⁷ On the 900 and 1800 MHz bandwidths of the radio spectrum.

²⁸ Third generation cellular telephony systems are designed to carry both voice and data, with voice signals converted into data. Data speeds exceed 2.5G systems, and can be as high as 43Mbps. Examples of standard 3G systems are Universal Mobile Telecommunications System (UMTS) and CDMA2000. In New Zealand, Three companies operate 3G systems, with Vodafone, 2Degrees and Telecom have all deployed UMTS.

²⁹ On both 900 and 2100 MHz bandwidths of the radio spectrum.

³⁰ Clause 8.6, Rural Broadband Agreement between The Crown and Vodafone (2011).

that certain fixed wireless services that it provides under the RBI are made available on non-discriminatory wholesale terms.³¹

B Management rights supplied by The Crown

36. The Crown supplies spectrum management rights necessary to enable services provided by Vodafone and other participants in the telecommunications industry. MBIE is fulfilling a regulatory and commercial function when allocating management rights for the 700MHz spectrum band via the Auction. There is no overlap between MBIE and Vodafone in any market relevant to the proposed acquisition.

C The New Zealand telecommunications industry

37. The proposed acquisition concerns spectrum used in providing mobile telephony services. Participants in this segment of the industry are Telecom, Vodafone and 2Degrees together with a small number of MVNOs.
38. The markets in which these participants compete and the intensity of competition in them is well known to the Commission by virtue of its work relating to the Vodafone/TCL Determination, consideration of these markets through a range of regulatory activities, and ongoing monitoring of the evolution of competition in the New Zealand telecommunications industry.³² Consistent with the conclusions reached by the Commission through this work, a recent IDC Market Analysis Note observes generally that "*[t]he level of competition within the market has increased over the last year as operators compete on price and value.*"³³

D Recent and future industry trends

39. New Zealand's telecommunications market has evolved considerably as a result of regulatory changes, new technologies and changing customer preferences. As the Commission recognises, mobile operators compete in highly competitive markets.³⁴ The following additional trends are also relevant in the context of the proposed acquisition.

Data growth

40. The Commission's *Annual Telecommunications Monitoring Report 2011* (May 2012) ('the 2012 Monitoring Report') notes that mobile data has doubled year-on-year from 2009-10 to 2011-12.³⁵ We see this trend continuing. Broadband applications are placing greater speed and capacity demand on broadband networks. Our conservative expectation is that mobile data use will increase at [] compounding annual growth rate ('CAGR') to 2030, and the actual increase could in fact be considerably higher.

³¹ Clause 8.7, Rural Broadband Agreement between The Crown and Vodafone (2011).

³² Most recently in the 2013 Monitoring Report.

³³ IDC Market Analysis Note *Too Big to Fail: IDC NZ Telecommunications Market Analysis and Forecasts 2013-2017* (September 2013), page 3.

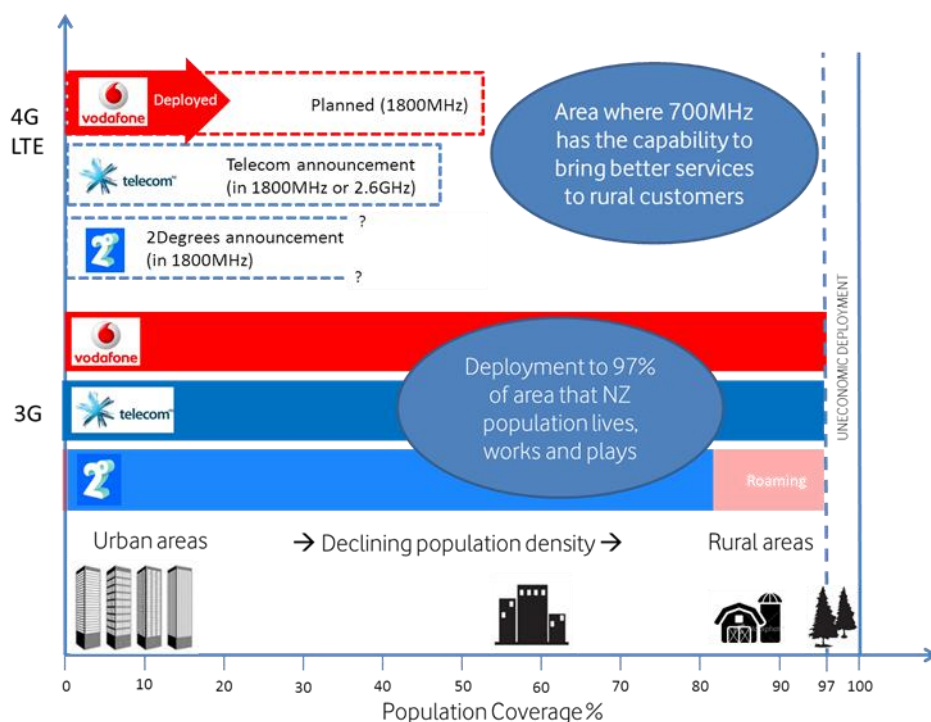
³⁴ 2013 Monitoring Report, paragraph 27.

³⁵ See Figure 33: Total mobile data consumed.

Network coverage and quality

41. Partly in response to the substantial anticipated growth in data, all mobile operators are investing in their networks in order to be able to meet current and future demands of users arising from current technology and applications. Vodafone’s current investments in rollout of 4G services using its existing spectrum holdings (and investments in its fixed networks) are indicators of this trend. Telecom has recently announced that it intends to launch 4G services in Auckland in 2013, and expects to cover close to half its network during 2014. Similarly, 2Degrees has indicated that it will deploy 4G next year.
42. Figure 2 below summarises the current and forecast coverage plans of each New Zealand mobile operator.

Figure 2: Mobile operators - current and forecast coverage plans



E Recent consolidation in the industry

43. The following consolidation has taken place in the industry in the past five years:
- 2degrees purchased 2x15MHz of 1800MHz spectrum divested by TelstraClear as a condition of its acquisition by Vodafone (2013);
 - Vodafone purchased TelstraClear (2012);
 - Vocus purchased Maxnet (2012);
 - Craig Wireless purchased Woosh (2011);
 - Orcon purchased Bizo (2010);
 - Orcon purchased iGRIN and Infogen (2010);
 - Trilogy International Partners purchased 2Degrees (2009);
 - Vodafone purchased ihug (2007);
 - Kordia purchased Orcon (2007);

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- j. Woosh purchased Quicksilver (2006); and
- k. TelstraClear purchased Sytec Resources Limited (2004).

PART 3: MARKET DEFINITION³⁶

A Horizontal aggregation

Relevant markets

44. The Commission has previously considered the acquisition of spectrum by Telecom and Vodafone on a number of occasions. For example, in 2008 the Commission cleared three applications by Telecom and Vodafone relating to spectrum in the 850MHz band,³⁷ 2.5GHz band,³⁸ and 900MHz band.³⁹ The Commission also cleared the sale of the management rights to 900MHz spectrum to Vodafone in 2002,⁴⁰ 2GHz to Telecom in 2001⁴¹ and 2GHz to Vodafone in 2000.⁴²
45. In the context of a business acquisition, the Commission has considered the relevant markets in the telecommunications sector most recently in October 2012 in the Vodafone/TCL Determination. The Commission has also considered telecommunications markets in a number of regulatory decisions, drawing on market definition principles contained in its Mergers and Acquisitions Guidelines.
46. We draw on these decisions for the purposes of this Application and, having had regard to them, consider that the following markets are relevant for the purpose of assessing that the proposed acquisition.

Spectrum management rights for use in mobile telephony

47. Management rights are not use-specific and allow the holder to create spectrum licences within a specific frequency band for any purpose. There is, however, a requirement for 700MHz spectrum to be used to provide mobile telephony services, specifically 4G services.⁴³
48. In the Vodafone/TCL Determination, the Commission examined the impact of the acquisition in question on management rights for spectrum used in the provision of mobile phone services.⁴⁴ It noted that it was unclear whether particular spectrum frequencies constituted individual product markets or formed part of a broader differentiated market. Ultimately, the Commission did not find it necessary to reach a conclusion on this point but, where necessary, it analysed management rights for individual spectrum bands in its competition assessment.

³⁶ Sub-part A addresses Item 12 in the Commission's *Form for Notice under section 66*. Sub-part B addresses Item 13. Sub-part C addresses Item 14.

³⁷ Decision 640 *Telecom New Zealand Limited and 850MHz Spectrum* (8 April 2008).

³⁸ Decision 635 *Telecom Leasing Limited and 2.5GHz Spectrum* (7 March 2008).

³⁹ Decision 634 *Vodafone Mobile NZ Limited and 900MHz Spectrum* (16 January 2008).

⁴⁰ Decision 479 *Vodafone Mobile NZ Limited and 900MHz Spectrum* (1 November 2002).

⁴¹ Decision 423 *Telecom New Zealand and 2GHz Spectrum* (15 March 2001).

⁴² Decision 413 *Vodafone Mobile NZ Limited and 2GHz Spectrum* (8 December 2000).

⁴³ See Footnote 7 above.

⁴⁴ Paragraphs 103-106.

49. For the purposes of this application, we have considered and provided information in relation to both:
- a. the 700MHz spectrum band, to the extent that it has specific advantages delivering mobile data coverage in rural areas; and
 - b. holdings of all spectrum frequencies capable of being used in providing mobile telephony services, but with specific reference to the characteristics of spectrum bands that enable particular services (e.g. 4G services).
59. Irrespective of the precise product dimension of this market, its geographic scope is national.

The mobile telephony market

59. In the Vodafone/TCL Determination, the Commission maintained its earlier view that there is a retail market for mobile phone services (the 'mobile telephony market').⁴⁵ This market encompasses both residential and business customers. The geographic dimension of this market is national.
60. The Commission noted that the mobile telephony market could in principle be further separated to differentiate between, for example, pre-pay and post-pay products or residential and business customers. However, we consider that such distinctions would have no material effect on the analysis of the proposed acquisition.
61. In the context of the proposed acquisition, a relevant consideration is whether 2G and 3G mobile services, and now 4G services, are provided in the same market. In its 2001 decision regarding Telecom's application for 1800 and 2100MHz spectrum,⁴⁶ the Commission decided that 2G and 3G services were provided in separate markets.
62. For present purposes, from a supply side perspective, the Implementation Requirements in the Management Rights Contract, which successful bidders must enter under rules of the Auction, imply that the acquisition of 700MHz spectrum is conditional on the acquirer rolling out 4G services using that spectrum. From a demand side perspective, the distinction between 3G and 4G services is much less clear than that between 2G and 3G services. 2G services were not generally used to carry data and had limited capability for this, whereas 3G services were developed with higher speed data carriage in mind. This distinction does not exist between 3G and 4G services - both are designed to carry data. The benefits of 4G services relate primarily to the speed at which that data can be downloaded and uploaded. For many customers, however, speed may not be seen as a significant differentiating factor. Accordingly, from a demand side perspective, 3G and 4G services are likely to be viewed as credible substitutes.
63. In our view, it is therefore appropriate for the Commission to consider 3G and 4G services as being provided within a single market. However, in the event that the Commission errs on side of caution and considers that 3G and 4G services are provided in separate markets, we have nevertheless considered the extent to which 3G services would continue to provide a competitive constraint in relation to 4G services following the proposed acquisition, to the extent that this is relevant.

⁴⁵ Paragraph 99.

⁴⁶ Decision 423 *Telecom New Zealand and 2GHz Spectrum* (15 March 2001).

64. In terms of future developments, operators will be able to use a broad range of spectrum holdings (850/900MHz, 1800MHz, 2100MHz, 2600MHz and any future bands) to deliver both 4G and 5G services. Therefore, any benefit from larger holdings of any particular spectrum band will be limited going forward.

B Product differentiation

65. Mobile operators may differentiate on the basis of:
- a. network quality and coverage;
 - b. the pre-pay and post-pay options that they provide to consumers;
 - c. pricing;
 - d. customer services; and/or
 - e. the range of add-on products or bundles they offer.

66. As noted at paragraphs 23 *et seq.* above, Vodafone [

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67. The proposed acquisition does not affect the ability of any industry participant to continue to differentiate in these ways.

C Vertical integration

68. Not applicable.

PART 4: COUNTERFACTUAL⁴⁷

A Summary

69. The factual(s) in which the proposed acquisition will occur, and the counterfactual(s) against which they must be compared, both depend on the outcome of the Initial Round, which will remain unknown until after 29 October 2013.
70. Under the proposed acquisition Vodafone will acquire 2x20MHz in the 700MHz spectrum band. This is the essential feature of any factual. The factual assumes that spectrum is unsold at the conclusion of the Initial Round. Unless this happens, Vodafone will not have the opportunity to bid for management rights to a further 2x5MHz of 700MHz spectrum in the Further Round.
71. The Further Round will therefore occur in circumstances where:
- a. Telecom has acquired 2x15MHz. We do not believe there is any plausible scenario in which Telecom would bid to acquire less than 2x15MHz in the Initial Round. [
 -]
 - b. 2Degrees has elected not to bid to acquire 2x15MHz in the Initial Round, for whatever reason, despite having had every opportunity to do so. If 2Degrees elects to acquire 2x10MHz only this implies that it does not value the acquisition of an additional 2x5MHz at the reserve price of \$22million.
 - c. Any additional bidder does not succeed in acquiring 700MHz spectrum.⁴⁸ We understand that four parties have registered to bid in the Initial Round, meaning one party in addition to existing mobile operators. However, registration may or may not result in active bidding in the Auction. If the fourth bidder does actively participate in the Initial Round then it is unlikely that there will be a Supplementary Round.⁴⁹
72. For reasons set out above, we believe that the most likely factual in which the proposed acquisition will occur is one in which Vodafone acquires 2x20MHz, Telecom acquires 2x15MHz and 2Degrees acquires 2x10MHz. Our analysis proceeds on this basis.

B The counterfactual

73. The proposed acquisition is a consequence of the allocation of spectrum previously put to other uses (i.e. a change from existing use) to mobile telephony services. The counterfactual is therefore not the status quo.

⁴⁷ This Part addresses Item 15 in the Commission's *Form for Notice under section 66*.

⁴⁸ If this is incorrect then, where 2Degrees acquires 2x10MHz, Telecom and Vodafone acquire 2x15MHz each and the fourth bidder also acquires management rights in the Initial Round, there will be no Further Round.

⁴⁹ In our view, Implementation Requirements (see paragraphs 20 *et seq.* above) raise a serious question as to whether the presence of a fourth bidder would in fact translate into new entry. Irrespective of the identity of this operator, the assessment of prospects for successful new entry set out in the Commission's December 2011 letter to MBIE remain valid: "[N]ew entry into the mobile market in the short terms is unlikely...based on the application of the Commission's mergers and acquisitions test of entry into the mobile market" (Letter from Ross Patterson, Telecommunications Commissioner to Len Starling, MBIE (16 December 2011)).

74. We understand that the Commission assesses transactions against all likely counterfactuals, and for the purposes of competition assessment will utilise the counterfactual that appears to be the most competitive.
75. As explained above, Vodafone will not have the opportunity to bid for management rights to a further 2x5MHz unless management rights for 700Mhz spectrum remain unsold at the conclusion of the Initial Round. In the factual set out above, Telecom is the only party other party at this stage that could bid to acquire additional management rights to 2x5MHz.⁵⁰ Accordingly, in Part 5: Competition Analysis below we have examined the competitive effects of the proposed acquisition against the counterfactual in which Telecom acquires the additional 2x5MHz, taking its total holdings to 2x20MHz, with Vodafone holding 2x15MHz and 2Degrees holding 2x10MHz.

⁵⁰ Even assuming it were entitled to do so, if 2Degrees has not bid for an additional 2x5MHz the Initial Round at the reserve price of \$22million, it is implausible that it would bid against Telecom and Vodafone in the Further Round where the price for additional spectrum may significantly exceed this reserve. A new entrant that has not participated in the Initial Round cannot bid in the Further Round.

PART 5: COMPETITION ANALYSIS⁵¹

A Summary

76. The proposed acquisition would allocate management rights for 2x5MHz, taking Vodafone's post-auction holdings to 2x20MHz in the 700MHz spectrum band. These rights will enable Vodafone to provide an enhanced network speed and experience, particularly in rural areas, when compared to a holding of 2x15MHz in the 700MHz spectrum band (see paragraphs 23 *et seq.* above).
77. Spectrum management rights do not themselves confer the ability to participate in any downstream markets. Activity in these markets depends on the rights holder's ability to utilise spectrum to deploy services that are attractive to consumers. We note that the Commission's previous approach in a number of decisions involving spectrum has been to assess the acquisition with reference to potential downstream effects.
78. In this competition analysis we consider any impact of the proposed acquisition on the mobile telephony market with specific reference, where relevant, to the mobile telephony services provided and the frequency bands held by mobile operators. In our view, unless the proposed acquisition materially affects other operators' abilities to compete in providing the services enabled by that spectrum on competitive terms then no harm can result in any downstream wholesale or retail market.

B Competition analysis: Spectrum management rights for mobile telephony uses

79. The proposed acquisition will involve an accretion in Vodafone's spectrum holdings for use in providing mobile telephony services. There is no aggregation in any downstream wholesale or retail market. It is therefore appropriate to focus analysis on any competition effects arising from the increase in Vodafone's holdings of spectrum management rights as a result of the proposed acquisition.
80. In considering the impact of the proposed acquisition, the Commission should consider the total spectrum holding of each mobile operator. An operator's holding in the 700MHz spectrum band alone is not decisive. What matters is whether each operator has sufficient spectrum holdings to enable them to compete effectively at wholesale and retail levels. This is consistent with the approach set out in the Commission's December 2011 letter to MBIE,⁵² which stated that:
- a. mobile operators would not need identical holdings of 700MHz spectrum in order to compete; and
 - b. spectrum holdings would need to be "*...reasonably balanced as a marked disparity in allocation is likely to harm competition.*"
81. Assessing the capability offered by any single operator's total mobile telephony spectrum holdings also acknowledges the reality, demonstrated across other jurisdictions, that:

⁵¹ Sub-parts A-B address Items 16-25 in the Commission's *Form for Notice under section 66*. Sub-part C addresses Item 26. Sub-part D addresses Item 27. Sub-part E addresses Item 28.

⁵² See footnote 49 above.

- a. there is frequently not parity of spectrum holdings across mobile operators;⁵³
- b. the operator with the largest market share may not have the largest spectrum holding;
- c. operators use different combinations of spectrum to deliver services;⁵⁴
- d. operators can configure their networks to reflect their spectrum holdings where necessary to compete in the market.

82. The proposed acquisition would take Vodafone’s holdings to 2x20MHz in this band and would alter holdings of spectrum for use in mobile telephony as highlighted in Table 3.

Table 3: Post-acquisition holdings and uses of mobile telephony spectrum

	700MHz	850MHz	900MHz	1800MHz	2100MHz	2600GHz
Current Use	4G (LTE and LTE-A)	2G & 3G	2G & 3G	2G & 4G	3G	4G
Future use	4G or 5G	3G, 4G or 5G	3G, 4G or 5G	4G or 5G	3G, 4G or 5G	4G or 5G
Vodafone	2x20MHz		2x15MHz	2x25MHz	2x25MHz	2x15MHz
Telecom	2x15MHz	2x15MHz		2x25MHz	2x15MHz	2x20MHz
2Degrees	2x10MHz		2x10MHz	2x25MHz	2x15MHz	

83. This table shows that different spectrum bands can support multiple generations of technology. As we explain above, 4G services can be deployed in urban areas using a range of spectrum holdings but in rural areas 700MHz spectrum is necessary in order to economically deliver 4G services. In principal, an operator could elect not to deploy 4G services in rural areas. It could, for example, elect to provide these services only in urban areas using existing spectrum with services in rural areas remaining 2G/3G. Customers on this network may pass in and out of 4G availability depending on their location. [

] It might be a viable model for a value operator, or an operator targeting those customers in urban areas who are less concerned with quality of service outside these locations.

84. In any event, LTE, LTE-A and future cellular technologies (i.e. 5G services) will be able to be deployed using a range of different spectrum bands and, when these new technologies become available, operators will be able to deploy them using a range of spectrum holdings. Any holding of a particular spectrum range is therefore likely to become even less important going forward.

⁵³ For example in the Australian digital dividend auction only Telstra and Optus purchased digital dividend spectrum. Vodafone did not purchase any digital dividend spectrum. This was not seen as problematic because Vodafone has other spectrum holdings that would enable it to deliver equivalent services and compete effectively.

⁵⁴ For example in the UK Vodafone and O2 have large holdings of sub 1GHz spectrum. In comparison EverthingEverywhere has a large holding of 2GHz spectrum. Each operator uses their different holdings to deliver identical competitive services.

Analysis of proposed acquisition against the likely counterfactual

85. In the counterfactual, if Vodafone were not successful in bidding for the additional 2x5MHz in the Further Round then Telecom would acquire 2x20MHz instead.
86. In this scenario, all existing mobile operators would acquire sufficient holdings of 700MHz spectrum to enable coverage needed to provide 4G services, including in rural areas where it would not be economic to do so using other spectrum bands. Provided that all existing mobile operators acquire 2x10MHz of 700MHz spectrum then they can achieve this outcome.
87. As noted at paragraphs 23 *et seq.* above, acquiring more than 2x10MHz of 700MHz spectrum does not confer any incremental coverage benefit. The incremental benefit of any additional 700MHz spectrum above 2x10MHz is related to []
88. The choice before the Commission is therefore quite simple: should Vodafone be allowed the potential 'network leadership' advantage to be gained from acquiring an additional 2x5MHz in the Further Round or, in the alternative, should Telecom? Neither scenario appears more competitive than the other. We submit that an outcome in which Vodafone, rather than Telecom, acquires the additional 2x5MHz does not substantially lessen competition in any market.
89. In fact, []

Conclusion

90. The proposed acquisition would have no material effect on the ability of other mobile operators to access spectrum holdings necessary to provide mobile telephony services. No existing operator is deprived of the holdings required to deliver competitive 4G services and all can continue to compete on the same basis as at present. The proposed acquisition does not alter barriers to, or the likelihood of, new entry.
91. In particular, the likely counterfactual does not appear to be any more competitive than the factual. Vodafone and Telecom would remain in broadly equivalent positions in either case, and there is no reduction in 2Degrees ability to continue to compete on the same basis as it currently does.

C Coordinated effects

What characteristics of the market will either facilitate or impede co-ordination?

92. The proposed acquisition concerns the allocation of new spectrum previously put to other uses. It does not result in any accretion or concentration in wholesale or retail markets. The mobile telephony market does not show signs of coordinated conduct today and, more importantly, the acquisition does not remove any unique factor that is preventing co-ordination today or create

any new factor which will provide an incentive for co-ordination in the future. Put simply, no feature of the proposed acquisition would make collusion more easy, stable or effective. Indeed, allowing for an asymmetry of spectrum holdings between Vodafone and Telecom will, if anything, decrease the likelihood of coordinated effects arising in the mobile telephony market.

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D Efficiencies

93. The proposed acquisition will enable Vodafone to deliver 4G services to rural areas and improve indoor coverage in urban areas economically. Networks using low frequency spectrum, such as 700MHz spectrum, require fewer sites and offer better energy efficiency to achieve the same level of coverage. Ultimately, Vodafone will be able to deliver higher quality 4G services in rural areas and this is consistent with Government's RBI objectives.

E Other factors

94. Not applicable.

PART 6: FURTHER INFORMATION AND SUPPORTING DOCUMENTATION⁵⁵

95. The Commission already holds substantial information relevant to the proposed acquisition. See also:
- a. Annex B: Shareholding structure for Vodafone Group Plc.;
 - b. Annex C: Transaction documents;
 - c. Annex D: Interested parties' contacts;
 - d. Annex E: Annual report of Vodafone Group Plc.

⁵⁵ This Part addresses Items 29-30 in the Commission's *Form for Notice under section 66*.

PART 7: CONFIDENTIALITY⁵⁶

96. Confidentiality is not sought in respect of the fact of this application. However, the Commission may wish to discuss with MBIE the extent to which publication of the fact of this application may signal Vodafone's bidding intentions in a manner that would or might undermine the competitive tension underpinning the Auction.
97. Confidentiality is asserted in respect of the information in this Application that is highlighted in red and contained square brackets, i.e. - [REDACTED].
98. Confidentiality is sought for the purposes of section 9(2)(b) of the Official Information Act 1982 on the grounds that:
 - a. the information is commercially sensitive and contains valuable information which is confidential to Vodafone; and
 - b. disclosure would be likely unreasonably to prejudice the commercial position of the Vodafone, as the party providing the information.
99. Vodafone requests that it is notified of any request made to the Commission under the Official Information Act 1982 for Vodafone confidential information, and that the Commission seeks its views as to whether the information remains confidential and commercially sensitive at the time those requests are being considered.
100. The foregoing applies equally in respect of any additional information provided to the Commission that is expressed to be confidential.

⁵⁶ This Part addresses Items 31-33 in the Commission's *Form for Notice under section 66*.

ANNEX A: DECLARATION

THIS NOTICE is given by **Vodafone New Zealand Limited**.

Vodafone New Zealand Limited hereby confirms that:

- all information specified by the Commission has been supplied;
- if information has not been supplied by **Vodafone New Zealand Limited**, reasons have been included as to why the information has not been supplied;
- all information known to **Vodafone New Zealand Limited** which is relevant to the consideration of this application/notice has been supplied; and
- all information supplied by **Vodafone New Zealand Limited** is correct as at the date of this application/notice.

Vodafone New Zealand Limited undertakes to advise the Commission immediately of any material change in circumstances relating to the application/notice.

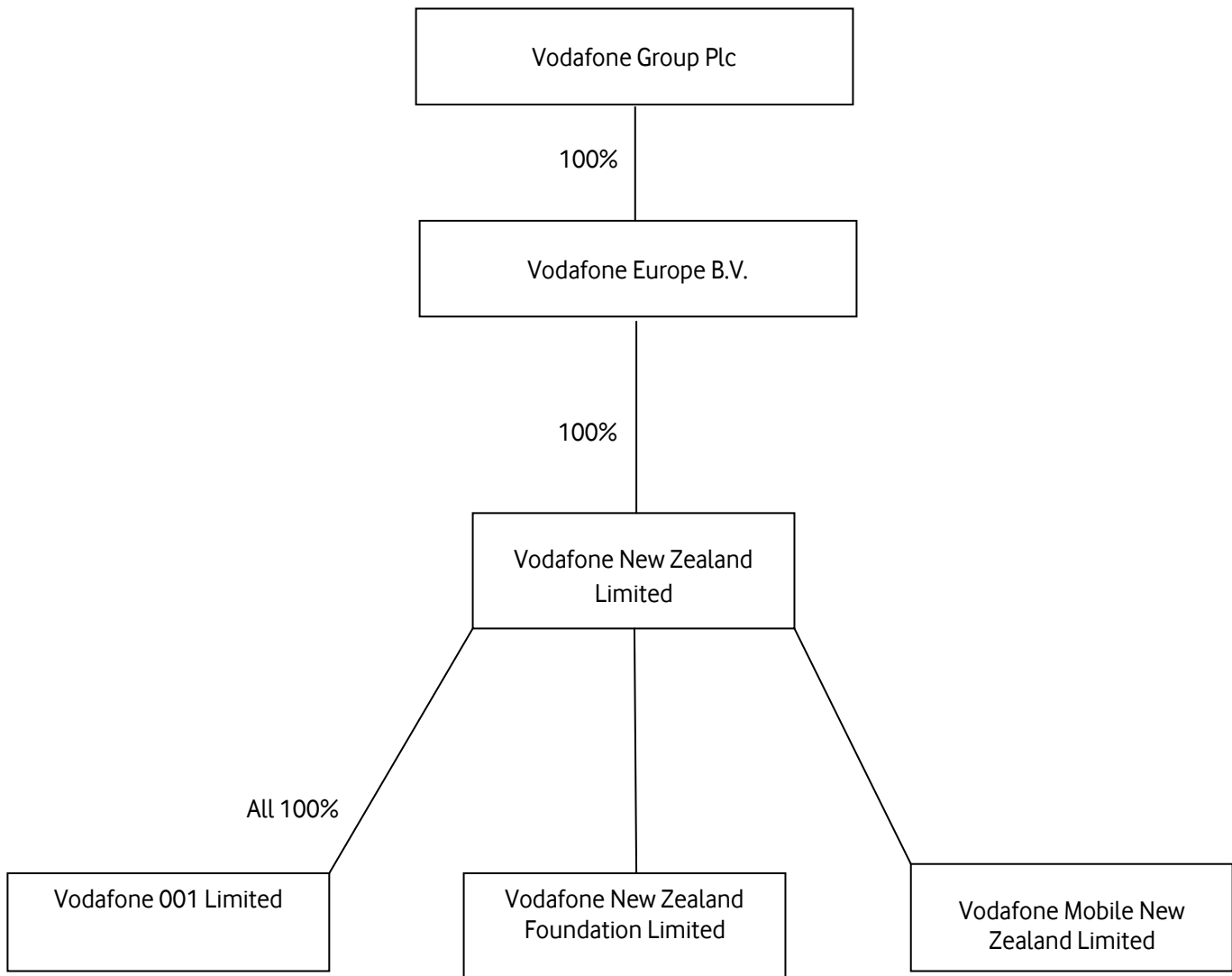
Dated this 9th day of October 2013.

Signed by **Vodafone New Zealand Limited**

Liesbeth Koomen, Legal Director and UFB Programme Director

I am a ~~director~~/officer of the company and am duly authorised to make this application/notice.

ANNEX B: SHAREHOLDING STRUCTURE FOR DIAGRAM VODAFONE GROUP PLC.



ANNEX C: TRANSACTION DOCUMENTS

- *700MHz: Auction Catalogue* (11 September 2013) (See - http://www.rsm.govt.nz/cms/pdf-library/policy-and-planning/current-projects/digital-dividend-auction-700mhz/700_MHz_Auction_Catalogue_11_September_2013.pdf);
- *700MHz Auction Process – MBIE Proposal* (See - <http://www.rsm.govt.nz/cms/pdf-library/policy-and-planning/current-projects/digital-dividend-auction-700mhz/700-mhz-auction-flowchart-28-may-2013.pdf>);
- *Draft 700MHz Management Rights Agreement* (See - <http://www.rsm.govt.nz/cms/pdf-library/policy-and-planning/current-projects/digital-dividend-auction-700mhz/700-mhz-auction-management-rights-agreement>).

ANNEX D: INTERESTED PARTIES' CONTACTS

Name of interested party	Contact details	Contact person
<i>Existing Mobile Operators and Prospective Bidders</i>		
2Degrees Limited	Address: 131 Khyber Pass Road, Grafton, Auckland 1010 Postal Address: PO Box 8355 Auckland 1150 Telephone: 09-919 7000 Fax: 09-919 7001 Website: www.2degreesmobile.co.nz	Name: Stewart Sherriff Position: Chief Executive Email: stewart.sheriff@2degreesmobile.co.nz
Telecom Corporation of New Zealand Ltd	Address: Level 2, Telecom Place 167 Victoria Street West Auckland 1142 Postal Address: Private Bag 92028 Auckland Telephone: 0800 246 631 Fax: 04-801 9001 Website: www.telecom.co.nz	Name: Simon Moutter Position: Chief Executive Officer Email: simon.moutter@telecom.co.nz
KLR H.K. Int. Ltd. ⁵⁷	Address: Unknown	Name: Simon M Edwards Position: Owner
<i>Mobile customers (five largest)</i>		
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⁵⁷ Further details relating to this entity are available from MBIE.

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Public version

ANNEX E: ANNUAL REPORT OF VODAFONE GROUP PLC

See -

http://www.vodafone.com/content/annualreport/annual_report13/downloads/vodafone_annual_report_2013.pdf