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Dr. Ross Patterson
Telecommunications Commissioner
Commerce Commission
44-52 The Terrace
WELLINGTON

BY EMAIL

Dear Ross

Vodafone National Roaming Undertaking

We refer to the Commerce Commission's (the **Commission**) investigation under the Telecommunications Act 2001 (the **Act**) in relation to potentially amending the terms of the national roaming service and moving the national roaming service from a specified to a designated service.

We enclose a signed undertaking from Vodafone New Zealand Limited (**Vodafone**), pursuant to Schedule 3A of the Act, in relation to the national roaming service. We also enclose a copy of this undertaking, marked to show changes to Vodafone's draft undertaking of 31 August 2007.

In this letter, we describe the substantive changes that we have made to the undertaking.

Separate undertakings for national roaming and co-location

Please note that we have created two undertakings under Schedule 3A of the Act, one in relation to national roaming (enclosed) and one in relation to co-location (sent under separate cover to the Commission).

We do not believe this impacts on the substance of the undertakings, as compared to our draft undertaking of 31 August 2007. The enclosed mark up shows the changes that were made to achieve this separation.

Pricing

We have revised the pricing in the undertaking to make it simpler and more predictable, while still retaining the efficiency benefits of pricing that reflects the higher average costs of traffic on less-utilised parts of the Vodafone network. In particular, we have reflected on the concerns expressed at the conference and in the Commission's letter

with the complexity of the pricing in the undertaking. We have also considered the apparent preference by the Commission for a simpler pricing regime combined with a rollout requirement.

The new pricing set out in Schedule 2 features a price for each of the Vodafone Roaming Services (voice, text, data and video-telephony) that rises over the five year life of the undertaking to reflect an implicit rollout to 60% coverage. That is to say, when an Access Seeker commences service it has access to the year one pricing, and the pricing changes on each anniversary of that commencement date. There is no explicit rollout requirement in the undertaking, but, faced with a predictable increase in roaming rates, we would expect an Access Seeker to respond by building out its network. We have deliberately chosen the 60% threshold over five years to be conservative: certainly it is less than the stated coverage plans of NZ Communications and at the lower end of the range discussed at the conference. If an Access Seeker were to build more quickly than the undertaking pricing anticipates, then it will gain the benefit of lower roaming rates in more expensive areas.

The headline rates which appeared in the previous draft undertaking have all been reduced to eliminate the set up cost contribution (see below). In addition, the headline price for SMS has been reduced from 5.1c down to 4.6c, which derives a year one price of 4.9c. Under the previous draft undertaking, this year one price for SMS would have been 6.5c (including the set up cost contribution). In summary, the rates for a particular service are 106% of the headline rate for that service in year one rising to 139% in year five.

Appendix A describes the methodology in more detail.

This simple mechanism gives certainty to an Access Seeker about what prices it will face, and will encourage it to build out its network in line with rising roaming rates. This simplified pricing structure has also removed the need for a pricing request process prior to entry into a Deed of Acceptance, which has been deleted from the undertaking.

Set up costs

Concern was expressed at the conference over Vodafone's proposal to build into its pricing an increment to allow for the recovery of its costs to set up and develop the Vodafone Roaming Service.

We have taken these concerns on board and deleted any requirement for an Access Seeker to contribute towards Vodafone's set up and development costs for the service set out in the undertaking.

Inclusion of 3G W-CDMA

We have taken note of the concerns raised at the conference regarding Access Seekers being able to roam immediately on Vodafone's 3G W-CDMA network. We have now included 3G W-CDMA as a part of the Vodafone Network from day one (see the definition of Vodafone Network in Schedule 3).

However, we have retained the substance of clause 3.3 of Schedule 3, which now only applies to HSDPA and other radio access network technologies within the 3G W-CDMA family.

There have had to be several consequential changes to the undertaking, as a result of 3G W-CDMA being a part of the Vodafone Network, including:

- amendments to the Technical Specifications to allow for the inclusion of 3G W-CDMA (see Schedule 4); and
- amendments to the Exclusion Zone provision (clause 10 of Schedule 3) to allow for the creation of 2G Exclusion Zones and 3G Exclusion Zones¹. This would allow an Access Seeker to create, say, a 3G Exclusion Zone, but to roam on the Vodafone 2G network in that area. This diagram shows how we see this working for each geographical area where 2G and 3G Location Areas overlap:

Location areas	3G Exclusion Zone	Not 3G Exclusion Zone
2G Exclusion Zone	No service from VF	3G service from Vodafone
Not 2G Exclusion Zone	2G service from Vodafone	2G and 3G service from Vodafone

In relation to the initial Exclusion Zones, it will be necessary to create both 2G and 3G Exclusion Zones, but the 10% population coverage requirement would apply to the areas where the initial 2G and 3G Exclusion Zones overlap. See clause 10.3 of Schedule 3.

Implementation timing

We have sought to significantly reduce the time period for settlement of the Implementation Plan and the Operational Procedures, in case Vodafone and the Access Seeker are unable to reach agreement on their terms within a certain period of time. See clause 2.2 of Schedule 3.

Appendix B to this letter summarises the changes in the time periods.

New types of Access Seeker Mobile Networks

We have taken on board concerns by submitters that new types of radio access technologies may develop that would enable roaming on Vodafone's 3G W-CDMA and 2G GSM and GPRS network. Clause 3.16 of Schedule 3 enables an Access Seeker, when international standards have been adopted that allow for interworking with the Vodafone Network, to engage in a negotiation process with Vodafone that may result in amendments to the terms and conditions to permit roaming from that type of network.

¹ Location Areas represent topological divisions in the radio access network and, because the topology for 2G and 3G is different, the Location Areas for the two services do not exactly match

Flexibility to enable variations to the Technical Specifications

Recognising that an Access Seeker may wish to vary the Technical Specifications that describe the Vodafone Roaming Service, we have added clause 3.17 of Schedule 3, which enables an Access Seeker to engage in a negotiation process with Vodafone that may result in amendments to the Technical Specifications, insofar as they relate to the Access Seeker.

Access Fee

We appreciate there was concern, and some confusion, among submitters in relation to the Access Fee. We have deleted the requirement for an Access Fee.

Exclusion Zones

We have shortened the notice period for the Access Seeker to designate initial Exclusion Zones, and to add new Exclusion Zones, from 6 months to 30 Working Days.

Dispute resolution

We have added in a provision allowing the arbitral tribunal to order hearings or meetings to be held in Auckland if it would promote the convenience of the parties or witnesses. See clause 24.5(c) of Schedule 3.

If the Commission has any questions regarding this letter or the undertaking itself, then please do not hesitate to contact me.

Yours sincerely,



Tom Chignell
General Manager Corporate Affairs

Appendix A Pricing Methodology

The method for calculating the prices is as follows:

- We give each service a headline price.
- We calculate relative traffic-weighted average costs for each Location Area based on the replacement costs of the cellsites in that Location Area and recent 2G traffic volume data, and order the Location Areas by relative average cost.
- We calculate the "price factor" as the relative cost of an entrant roaming in the given area and all higher-cost areas as compared with roaming in all areas. This means that as an entrant builds out its network (and turns off roaming in the lower-cost Location Areas) the price factor rises.
- We set a target for coverage rollout, starting at 10% for the first year, and then increasing by 10% each year. The assumption is therefore that an entrant will build 60% population coverage by the end of the fifth year.
- We use the population figures from the 2006 census to equate a certain level of population coverage with build out of a number of Location Areas. For simplicity, we assume that an entrant builds the Location Areas in relative cost order, from the cheapest to the most expensive, although it may not in practice. For example, the model assumes that the sunrise 10% coverage is equivalent to covering [] VNZCOI, and that for 20% coverage the entrant will then build the three next least cost areas, [] VNZCOI.
- There is not a perfect correlation between the population living in a Location Area, and the 10% increments on the target, but the differences are small. For example, we calculate that covering the first three Location Areas would mean coverage of 9% of the population, as compared with the 10% sunrise requirement.
- We then multiply the headline rate for each service by the price factor that relates to the targeted level of coverage in each year.
- So, for example, for year 2 the targeted level of coverage is 20%, the relevant price factor for 20% population coverage is 1.16, and so in year 2 each price is 1.16 times the headline rate for each service.

The following table summarises the pricing for each service:

Year of service	1	2	3	4	5
Implicit coverage goal at start of year	10%	20%	30%	40%	50%
Price ratio to headline rate	1.06	1.16	1.25	1.30	1.39
Rates (cents)					
Voice (per min)	14.8	16.2	17.6	18.3	19.5
SMS	4.9	5.3	5.8	6.0	6.4
GPRS ² (per MB)	31.9	34.9	37.9	39.4	42.1
3G ³ (per MB)	8.6	9.4	10.2	10.6	11.3
HSDPA ⁴ (per MB)	5.5	6.0	6.5	6.8	7.3
Video telephony (per min)	35.2	38.5	41.7	43.5	46.5

These prices are subject to the price review and GST provisions in the undertaking.

- We have attached Vodafone's pricing model (which is VNZCOI) to illustrate more easily how the pricing is derived.

² The GPRS price is used if no 3G or HSDPA data services are employed

³ The 3G price is used if 3G but not HSDPA services are employed. In this situation the pricing also applies to GPRS usage

⁴ The HSDPA price is used for all data services if HSDPA service are employed

Appendix B
Implementation time periods

	31 August Undertaking	2 November Undertaking
Negotiation period following the Request Date (clause 2.2), after which a dispute notice may be given	90 days following Request Date	30 days following Request Date
Period for agreeing a Technical Expert, after which the Telecommunications Commissioner selects (clause 2.2(a))	15 Working Days following notice under clause 2.2	5 Working Days following notice under clause 2.2
Period for determination by the Technical Expert of Implementation Plan and/or Operational Procedures (clause 2.2(f))	40 Working Days from appointment	30 Working Days from appointment (determination final at that point)
Period in which notice must be given to dispute determination (clause 2.3)	10 Working Days from determination	
Period for parties to settle dispute (clause 2.4), after which notice of arbitration may be given	10 Working Days following notice under clause 2.3	
Totals (following notice of dispute under clause 2.2 excluding arbitration)	135 Working Days	55 Working Days
Period for commencement of arbitration under clause 24.5 (clause 2.4)	10 Working Days following notice of arbitration under clause 2.4	
Period for completion of arbitration under clause 24.5	(est.) 40-60 Working Days	
Total (following notice of dispute under clause 2.2 including arbitration)	185-205 Working Days	55 Working Days