



COMMERCE COMMISSION

**Standard Terms Determination for the specified service
Co-location on cellular mobile transmission sites**

Decision 661

Determination under section 30M of the Telecommunications Act 2001

The Commission: Paula Rebstock
Anita Mazzoleni
Gowan Pickering

Date of Determination: 11 December 2008

**THERE IS NO CONFIDENTIAL MATERIAL CONTAINED IN THIS
DETERMINATION**

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LIST OF TERMS AND ABBREVIATIONS

Access Provider	means an access provider under the Act to whom an Access Seeker has made, or may make, a request.
Access Seeker	means an access seeker under the Act that has made a request in writing pursuant to section 30S(1) of the Act to make the Mobile Co-location Service available on the Mobile Co-location Standard Terms.
Act	means the Telecommunications Act 2001.
Antenna	means equipment that transmits or receives radio communications signals in a cellular mobile telephone network.
Antenna Minimisation	means the process whereby an Access Provider's existing Antenna are replaced with Antenna that will facilitate the accommodation of Access Seeker Antenna on the Relevant Facilities. For example, this may include replacing multiple Antennas with a single cross-polarisation Antenna or a single multi-band Antenna.
Application	means any application made by the Access Seeker in relation to any part of the Mobile Co-location Service.
Approval to Build	means approval of the Access Seekers project plan, in accordance with clause 19.3 of the Mobile Co-location Operations Manual.
BAU	means business as usual.
Commission	means the Commerce Commission in the course of performing its functions under the Act.
Common Format Site Database	means a database maintained by the Access Provider in accordance with section 30 of the Mobile Co-location Operations Manual, containing information on the Access Provider's Relevant Facilities.
Determination Date	means the date on which the Mobile Co-location Standard Terms Determination comes into force.
Final Site Approval	means the notification provided to the Access Seeker confirming that the Access Provider is satisfied that all of the conditions contained in the preliminary site approval have been fulfilled.
Full Site Application	means a full Application for the Relevant Facilities that incorporates a detailed site design.
Initial Site Application	means a preliminary Application for the Mobile Co-location Service at the Relevant Facilities.
Interference Desktop Study	means a desktop study, undertaken by the Access Provider and any existing co-locators, of the interference and performance degradation that may occur at the Relevant Facilities.

KPIs	means the key performance indicators set out in the Mobile Co-location Implementation Plan.
Mast	means any tower, pole, mast or other similar structure that is used for the transmission or reception of telecommunications via a cellular mobile telephone network and that is the subject of a Relevant Occupation by the Access Provider. For the avoidance of doubt, a Mast may include a building, or part of a building.
Mobile Co-location Access Terms	means the terms set out in schedule 4 to the Mobile Co-location General Terms.
Mobile Co-location Conference	means the conference held by the Commission on 9 – 10 October 2008 in respect of the Mobile Co-location STD under section 30L of the Act.
Mobile Co-location General Terms	means the document 'Mobile Co-location General Terms' set out in Appendix A of the Mobile Co-location Standard Terms Determination.
Mobile Co-location Implementation Plan	means the document 'Mobile Co-location Implementation Plan' that is part of the Mobile Co-location Terms.
Mobile Co-location Interference Management and Design	means the Interference Management and Design document set out in schedule 5 to the Mobile Co-location General Terms.
Mobile Co-location Operations Manual	means the manual set out in schedule 3 to the Mobile Co-location General Terms.
Mobile Co-location Service	means the specified service “Co-location on cellular mobile transmission sites” as described in the Act.
Mobile Co-location Service Description	means the description set out in schedule 1 to the Mobile Co-location General Terms.
Mobile Co-location Service Level Terms	means the terms set out in schedule 2 to the Mobile Co-location General Terms.
Mobile Co-location Standard Terms Determination	means the standard terms determination in relation to the Mobile Co-location Service.
Mobile Co-location Terms	means, together, the Mobile Co-location General Terms, all of the schedules to the Mobile Co-location General Terms, and the Mobile Co-location Implementation Plan.
Multi-Site Application	means the process whereby an Access Seeker is able to submit one Application for the Mobile Co-location Service on ten or more Relevant Facilities.
Operational Support Systems	means the Access Provider’s fault management system and provisioning system, as set out in the Mobile Co-location Operations Manual.
Relevant Facilities	has the meaning given in clause 1.1 of the Mobile Co-location General Terms.
Relevant Occupation	means a lease, sub-lease, licence, sub-licence or other right to occupy or possess (which may arise, without limitation, as a result of ownership) by

the Access Provider of any Relevant Facilities.

Service Levels	means the service levels set out in the Mobile Co-location Service Level Terms.
Site Data Pack	means an information pack supplied by the Access Provider in order for the Access Seeker to assess the suitability of the Relevant Facilities for the Mobile Co-location Service.
Soft Launch	means a period of testing to identify any faults in the Mobile Co-location Service (and its supporting systems or processes), that may prevent an Access Seeker or the Access Provider from fully implementing the Mobile Co-location Service in accordance with the Mobile Co-location Terms.
STD	means a standard terms determination made by the Commission under section 30M of the Act.
STP	means Vodafone's standard terms proposal for the Mobile Co-location Service.
TCF	means the Telecommunications Carriers' Forum.
UBA	means unbundled bitstream access.
UCLL	means unbundled copper local loop.
UCLL Co-location STD	means the standard terms determination in relation to the UCLL co-location service.
Working Day	has the meaning give to that expression in the Act.

EXECUTIVE SUMMARY¹

- i. The Mobile Co-location Service is a service that enables co-location of cellular mobile telephone network transmission and reception equipment on or with an Access Provider's transmission sites.
- ii. The Mobile Co-location Service allows Access Seekers to utilise Access Providers' existing infrastructure in order to avoid unnecessary duplication of facilities (such as Masts). Co-location helps reduce network infrastructure costs for existing and potential mobile service providers by providing for the sharing of network infrastructure.
- iii. In this STD, the Commission sets out the non-price terms for the Mobile Co-location Service. The STD contains sufficient terms to allow Access Providers to make the service available to Access Seekers without the need for an Access Seeker to enter into a separate agreement with the Access Provider on non-price terms for provision of the service.

Pricing

- iv. The Mobile Co-location Service is a specified service under the Telecommunications Act 2001. As a result, the Commission may not determine the "price payable" for the service.
- v. The Commission decided previously not to amend the status of the Mobile Co-location Service from a specified service to a designated service on the basis that price was not a barrier to co-location.²
- vi. At the Mobile Co-location Conference, NZ Communications commented that pricing negotiations had stalled, and as a result pricing had become a significant issue preventing the entry of NZ Communications into the mobile market.³ Following the Mobile Co-location Conference, the Commission sought further details from NZ Communications, Vodafone and Telecom in relation to the statements made by NZ Communications.
- vii. Based on the information received, the Commission considers that although there may have been pricing disputes in respect of Mobile Co-location, the substance of these disputes does not appear to be sufficient to warrant the Commission reassessing its previous view that price is not a barrier to co-location.
- viii. The Commission does, however, have the option to revisit the status of the Mobile Co-location Service as a specified service in the future if price becomes a barrier to concluding co-location agreements.

¹ This executive summary does not form part of the Commission's Standard Terms Determination.

² Commerce Commission, *Schedule 3 Investigation into Amending the Co-location Service on Cellular Mobile Telephone Transmission Sites*, 14 December 2007.

³ Mobile Co-location Conference Transcript, 9 October 2008, pp 49-51.

Access Seekers and Access Providers

- ix. Access Seekers and Access Providers of the Mobile Co-location Service are defined in the Act. The Commission’s determination regarding the Access Providers, and eligible Access Seekers, of the Mobile Co-location Service as at the date of this final STD is as follows:

Company	Access Provider	Access Seeker eligibility
Vodafone	Yes	Yes
Telecom	Yes	Yes
NZ Communications	Yes	Yes
Woosh	Yes	Yes
TeamTalk	No	No

Interference Management

- x. The Commission has defined ‘unacceptable performance degradation’ in respect of interference management in this draft STD. The Commission considers that degradation to the Access Provider’s uplink budget or downlink budget of up to 0.5dB is an acceptable level of performance degradation resulting from provision of the Mobile Co-location Service.
- xi. In defining unacceptable performance degradation at this level, the Commission has considered that there may be some efficiency trade-offs associated with co-location. The Commission’s view is that the pro-competitive and efficiency benefits resulting from co-location are likely to outweigh any detriment to end-users as a result of performance degradation.

Making Space Available

- xii. Access principle 3 requires that Access Providers provide the Mobile Co-location Service on terms and conditions (excluding price) that are consistent with those terms and conditions on which each of those Access Providers provides the service to itself (subject to consideration of the limits on access principles). The Commission notes that Access Providers of the service consider the use of a range of options when looking to create space on their Relevant Facilities for their own additional Antennas.
- xiii. The Commission’s view is that, if necessary in order to achieve a position on the Mast that will give the Access Seeker the level of coverage it requires, the Access Seeker can require any of the following solutions be employed, provided that the proposed action does not result in unacceptable performance degradation in accordance with the interference management procedures set out in the Mobile Co-location Terms:
- rearrangement of the Access Provider’s existing Antenna;
 - Antenna Minimisation; and/or
 - Mast replacement, extension or revision.

Access Provider Forecasting

- xiv. In accordance with the Act, Access Providers of the Mobile Co-location Service are able to reserve space for their current and reasonable forecast requirements for capacity on their Relevant Facilities. The Commission considers that such forecasts are only likely to contain the required level of specificity to be considered “current and reasonable” approximately two to three years prior to deployment.
- xv. The Commission has determined that an Access Provider’s forecast shall not extend for more than two years where it relates to network expansion in respect of services currently provided by the Access Provider, or three years where it relates to the future deployment of a new technology.

Greenfields Co-location

- xvi. Greenfields co-location sites are sites where two or more parties have an interest in providing mobile services in a location where there are no existing cell sites. The Commission considers that greenfields sites fall within the definition of the Mobile Co-location Service. However, the Commission’s view is that it is not in the long-term interests of end-users to provide for Mobile Co-location at greenfields sites at this stage, as this would unduly interfere with the established, short-term network roll out plans of some Access Providers and Access Seekers.
- xvii. The Commission expects commercial arrangements between Access Providers and Access Seekers to provide for Mobile Co-location at greenfields sites in the near future. Should the industry fail to agree an effective greenfields regime that operates in the long-term interests of end-users within the next nine months, the Commission will immediately consider a review under section 30R of the Act to include greenfields sites as part of the regulated Mobile Co-location Service.

Implementation Plan

- xviii. The Commission has determined that the implementation period for the Mobile Co-location Service will be comprised of:
 - an ‘initial implementation phase’ during which the Access Provider is required to make any necessary enhancements to its Operational Support Systems and populate its Common Format Site Database with masts and towers;
 - an ‘additional database implementation phase’ during which the Access Provider is required to produce a complete version of its Common Format Site Database, including rooftop sites and reference values from the Ministry of Economic Development’s radio spectrum database; and
 - a Soft Launch of the service.
- xix. The Soft Launch in respect of each Access Provider may begin following the initial implementation phase, which is required to be completed 20 Working Days after the Determination Date. The Commission has determined that the Soft Launch will apply to Applications received during the period of 30

Working Days immediately following commencement of the Soft Launch, or if less than 10 Applications are received during this period, to the first 10 Applications received by the Access Provider (the Soft Launch Applications).

- xx. The Commission has set a Service Level capacity limit for each Access Provider of 10 Applications per Access Seeker for any rolling five Working Day period. This limit will apply to both Soft Launch Applications and BAU Applications.
- xxi. The Service Level Terms will apply from the Determination Date, but performance penalties relating to the Service Levels will only apply in respect of those Applications accepted for processing in excess of the Soft Launch Applications.

Efficient delivery of the Mobile Co-location Service

- xxii. In the Schedule 3 Investigation into Mobile Co-location, which was concluded in December 2007, the Commission noted that despite co-location agreements being in place for many years, co-location has occurred on less than 0.5% of available towers.⁴ The Commission considered that co-location had not occurred in significant numbers because incumbent operators had control over optimal co-location sites and incumbents had no or limited incentives to support co-location by competing networks.⁵
- xxiii. At the Mobile Co-location Conference it was noted that little progress, in terms of the number of completed co-locations, had been made since completion of the Schedule 3 Investigation. While TeamTalk has a large number of co-located sites with Telecom and Kordia (approximately 150), NZ Communications is yet to build a single co-location with either Telecom or Vodafone. NZ Communications has, however, successfully co-located with Woosh and Compass on a small number of sites.
- xxiv. Vodafone stated at the conference that it has approximately 309 sites that are capable of co-locating in a way that protects its future forecast requirements, will not require antenna minimisation, and are of sufficient height to help avoid interference issues.⁶ Similarly, Telecom noted that they have approximately 300 standard 1H, standard 2H, standard 2L and lattice towers⁷, which are most readily co-location capable, and 88 standard 1L masts, which in certain circumstances which will be capable of co-location.⁸
- xxv. NZ Communications stated that they have budgeted for 400 co-locations by April next year, and that a six-to-nine month roll out period is workable because of the subcontracting arrangements they intend to use.⁹

⁴ Commerce Commission, *Schedule 3 Investigation into Amending the Co-location Service on Cellular Mobile Telephone Transmission Sites*, 14 December 2007, p 9, para 51.

⁵ *ibid*, p 9, para 49.

⁶ Mobile Co-location Conference Transcript, 9 October 2008, p 16, lines 1-6.

⁷ Where 'H' stands for 'heavy' and 'L' stands for 'light'.

⁸ Mobile Co-location Conference Transcript, 9 October 2008, pp 22-23.

⁹ *ibid* pp 48-49.

xxvi. The Commission considers that the terms of this STD will enable efficient provision of the Mobile Co-location Service, and provide a mechanism for Access Seekers and Access Providers with different incentives to make efficient use of mobile network resources for the long-term benefit of end-users. Specifically, the Commission notes that:

- the standard site type solution process;
- the ability for Access Seekers to make Multi-Site Applications; and
- the Service Level capacity limit for each Access Provider of 10 Applications per Access Seeker per five Working Day period,

will all assist in facilitating rapid co-location of cellular mobile telephone network transmission and reception equipment. Consequently, the Commission expects to see a significant number of co-locations occurring in the near future.

xxvii. However, given the limited progress in completing commercial co-locations, the Commission considers that implementation of this STD will need to be closely monitored. As such, the Commission will be carefully examining the Service Level performance reports, with particular attention on the number of co-location Applications received and final approvals issued by Access Providers, as well as any Service Level defaults.

xxviii. Where progress with processing co-location Applications is significantly slower than anticipated, the Commission will consider the options available to it, such as further and more detailed information gathering under section 69ZC of the Act, a review of the STD under section 30R, or taking enforcement action where appropriate.

xxix. Given that price does not appear to be a significant barrier to co-location at this time, the Commission considers that, under the terms of this STD, mobile network operators will have the ability to successfully co-locate at a substantial number of sites in the near future.

INTRODUCTION

Background to the determination process

1. On 21 December 2007, the Commission initiated the STD process in relation to Mobile Co-location under section 30C of the Act.
2. The Commission conducted a scoping workshop on 31 January 2008. The workshop was open to all parties to the STD. The purpose of the workshop was to provide the Commission with information to assist it in specifying:
 - which Access Provider would be required to submit a standard terms proposal under section 30F of the Act;
 - a reasonable period of time within which that Access Provider must submit an STP under section 30F of the Act; and
 - any additional requirements under section 30F(2) of the Act.
3. On 8 February 2008, the Commission gave written notice to Vodafone requiring it to submit to the Commission an STP by 25 April 2008 that complied with section 30G of the Act. On 13 February 2008 the Commission wrote to Vodafone amending the due date for the STP to 28 April 2008. In the notice (as amended), the Commission specified a number of additional requirements that Vodafone was required to provide in the STP.
4. On 28 April 2008 Vodafone submitted an STP for the Mobile Co-location Service. Public notice was given and interested parties were invited to make submissions.
5. On 26 May 2008 the Commission received submissions on the STP from Telecom, NZ Communications, Kordia, CallPlus, TUANZ and Woosh.
6. On 25 July 2008 the Commission issued its draft Mobile Co-location STD in accordance with section 30K of the Act. Submissions were received on the draft STD on 22 August from Vodafone, Telecom, NZ Communications, Kordia, Tarantula, TeamTalk, TUANZ and Woosh. Cross submissions on the draft STD were received on 8 September 2008 from Vodafone, Telecom, NZ Communications, Kordia, TeamTalk and a community group from Churton Park.
7. On 9 and 10 October 2008 the Commission held a public conference, pursuant to section 30L of the Act, to seek additional information on particular aspects of the submissions and to provide interested parties with an opportunity to give a brief overview of their position, by presenting opening and closing statements.
8. During the latter stages of the STD process, the Commission sought additional feedback from interested parties including on the Concept Economics paper presented on behalf of NZ Communications at the Commission's public conference and how urban and non-urban cell sites might be differentiated for the purposes of the STD.

9. Key documents are available on the Commission's website at:

<http://www.comcom.govt.nz/IndustryRegulation/Telecommunications/StandardTermsDeterminations/MobileColocationserviceStandardTermsDet/DecisionsList.aspx>

The Mobile Co-location Terms

10. This standard terms determination for co-location on cellular mobile transmission sites (**Mobile Co-location**) comprises this decision report and the appended Mobile Co-location Terms comprising:
- Mobile Co-location General Terms;
 - Schedule 1: Mobile Co-location Service Description;
 - Schedule 2: Mobile Co-location Service Level Terms (SLT);
 - Schedule 3: Mobile Co-location Operations Manual;
 - Schedule 4: Mobile Co-location Access Terms;
 - Schedule 5: Mobile Co-location Interference Management and Design; and
 - Mobile Co-location Implementation Plan.
11. The following sections of this document provide explanation and reasons for the substantive changes, deletions or additions made to the Commission's draft STD (and other substantive decisions that do not result in such amendments), in order to form the draft Mobile Co-location Terms that appear in Appendix A.
12. In setting the Mobile Co-location Terms, the Commission has considered all of the submissions and cross submissions it has received from interested parties during the STD process, as well as statements made at the Mobile Co-location Conference. The Commission has also sought expert advice from external advisers.
13. Many of the terms in the Mobile Co-location General Terms and schedules are common to the previous standard terms determinations¹⁰ released by the Commission. In the interests of brevity, parties are referred to the reasons provided in the previous STDs in respect of these common terms.
14. In some instances the Commission may agree with the general submission made by a party, but does not consider the proposed alternative wording to be appropriate. In such cases, the Commission has made amendments using its own wording.

¹⁰ Previous Standard Terms Determinations released by the Commission include UCLL, UCLL Co-location, UBA, UCLL Backhaul and UBA Backhaul.

THE DETERMINATION FRAMEWORK

Purpose

15. In making this STD, the Commission must consider the purpose set out in section 18 of the Act. Section 18 describes the purpose of Part 2 and Schedules 1, 3, and 3A as follows:

18 Purpose

- (1) The purpose of this Part and Schedules 1 to 3 is to promote competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand by regulating, and providing for the regulation of, the supply of certain telecommunications services between service providers.
- (2) In determining whether or not, or the extent to which, any act or omission will result, or will be likely to result, in competition in telecommunications markets for the long-term benefit of end-users of telecommunications services within New Zealand, the efficiencies that will result, or will be likely to result, from that act or omission must be considered.
- (3) Except as otherwise expressly provided, nothing in this Act limits the application of this section.
- (4) Subsection (3) is for the avoidance of doubt.

16. Section 19 of the Act directs the Commission to consider, when making a determination under Part 2, whether the determination best gives, or is likely to best give, effect to the purpose set out in section 18. Section 19 states:

19 Commission and Minister must consider purpose set out in section 18 and additional matters

If the Commission or the Minister (as the case may be) is required under this Part or any of Schedules 1, 3, and 3A to make a recommendation, determination, or a decision, the Commission or the Minister must—

- (a) consider the purpose set out in section 18; and
- (b) if applicable, consider the additional matters set out in Schedule 1 regarding the application of section 18; and
- (c) make the recommendation, determination, or decision that the Commission or Minister considers best gives, or is likely to best give, effect to the purpose set out in section 18.

The Service Description

17. This STD concerns the specified service of “Co-location on cellular mobile transmission sites” as set out in Part 3 of Schedule 1 to the Act. This service is defined as follows:

Co-location on cellular mobile transmission sites

Description of service:

A service that enables co-location of cellular mobile telephone network transmission and reception equipment (including any necessary supporting

- equipment on or with the following facilities (**relevant facilities**):
- (a) any towers, poles, masts, or other similar structures—
 - (i) that are used for the transmission or reception of telecommunications via a cellular mobile telephone network; and
 - (ii) that are owned, managed, or leased by the access provider;
 - (b) all sites, buildings, or utility services that are associated with the kinds of structures referred to in paragraph (a)

<i>Conditions:</i>	Nil
<i>Access provider:</i>	Every person who operates a cellular mobile telephone network
<i>Access seeker:</i>	Any person who— <ul style="list-style-type: none"> (a) operates, or is likely to operate, a cellular mobile telephone network; and (b) seeks access to the service
<i>Access principles:</i>	The standard access principles set out in clause 5
<i>Limits on access principles:</i>	The limits set out in clause 6 and additional limits, which must be set by taking the following matters into account: <ul style="list-style-type: none"> (a) the access provider’s current and reasonable forecast requirements for capacity on the relevant facilities; (b) the management of existing or potential radio spectrum interference arising from use of the relevant facilities; (c) all relevant requirements under the Resource Management Act 1991; (d) all relevant health and safety requirements under any enactment; (e) all existing contractual obligations to third parties, including lessors of land on which relevant facilities are located; (f) the interests of third parties who use the relevant facilities
<i>Additional matters that must be considered regarding the application of section 18:</i>	Nil

Access Providers and Access Seekers

18. The Act defines Access Seekers and Access Providers with reference to “cellular mobile telephone network”. In order to determine if a person is an Access Provider or an Access Seeker it is necessary to determine whether that party operates a network that is a cellular mobile telephone network. A person may also be an Access Seeker if that person is “likely” to operate a cellular mobile telephone network.

19. Further discussion on the Commission's view on who qualifies as an Access Seeker or an Access Provider is set out at paragraphs 88 to 98 below.

Timeframe for supply to Access Seekers

20. The Commission is required by section 300(1)(b) to specify in the STD the timeframes within which Access Providers must make the service available to:
- every person who is already an Access Seeker at the time the STD is made; and
 - every person who becomes an Access Seeker after the STD is made.
21. The timeframes within which Access Providers must make the service available are contained in the Implementation Plan in Appendix A.

Access principles and limits on those principles

22. Clauses 5 and 6 of Schedule 1 to the Act apply in relation to the Mobile Co-location Service. They provide:

5 Standard access principles for designated access services and specified services

The following standard access principles apply to designated access services and specified services:

- (a) *principle 1*: the access provider must provide the service to the access seeker in a timely manner:
- (b) *principle 2*: the service must be supplied to a standard that is consistent with international best practice:
- (c) *principle 3*: the access provider must provide the service on terms and conditions on which the access provider provides the service to itself:
- (d) *principle 4*: the access provider must, if requested, provide an access seeker with information about a designated access service or specified service at the same level of detail, and within the same time frame, that the access provider would provide that information had it been requested by one of its own business units.

6 Limits on application of standard access principles set out in clause 5

- (1) Principles 1 to 4 set out in clause 5 are limited by the following factors:
 - (a) reasonable technical and operational practicability having regard to the access provider's network:
 - (b) network security and safety:
 - (c) existing legal duties on the access provider to provide a defined level of service to uses of the service:
 - (d) the inability, or likely inability, of the access seeker to comply with any reasonable conditions on which the service is supplied:

- (e) any request for a lesser standard of service from an access seeker.
 - (2) Principle 4 set out in clause 5—
 - (a) does not extend to any information about identifiable individual customers of the access provider; and
 - (b) is subject to the requirement that any confidential information provided to the access seeker, in accordance with that principle, must be kept confidential to that access seeker.
23. There are also additional limits on the access principles specific to the Mobile Co-location Service:
- (a) the access provider's current and reasonable forecast requirements for capacity on relevant facilities:
 - (b) the management of existing or potential radio spectrum interference arising from use of the relevant facilities:
 - (c) all relevant requirements under the Resource Management Act 1991:
 - (d) all relevant health and safety requirements under any enactment:
 - (e) all existing contractual obligations to third parties, including lessors of land on which relevant facilities are located:
 - (f) the interests of third parties who use the relevant facilities.
24. The Commission's view is that the limiting factors listed in clause 6 of Schedule 1 to the Act and in the Mobile Co-location service description are not absolute limits on the scope of the Mobile Co-location Service that apply on a site-by-site basis. The Commission considers that the existence of these factors does not negate the application of the access principles; those factors simply limit the scope of the application of the access principles, which remain relevant considerations throughout the terms of the STD.
25. As discussed in paragraphs 171 to 174 below, the Commission has removed the specific justifications for the rejection of an Application based on an Access Provider's assessment of the limits on access principles, as both the access principles and the limits on those access principles have been considered and balanced throughout the Mobile Co-location Terms.
26. Both the access principles and the limits on those access principles are relevant factors to be considered in the development of the terms of an STD. The Commission considers that the terms of the Mobile Co-location STD strike the appropriate balance between these factors in the manner that best meets the long-term interests of end-users in accordance with section 18 of the Act.

Information disclosure

27. Clause 2.3 of the Mobile Co-location General Terms incorporates the access principles. The Commission may require an Access Provider, in accordance with section 69ZC of the Act, to prepare and disclose information about the

operation and behaviour of any part of its business that provides prescribed designated or specified services.

28. In addition, the Commission may require the Access Provider to adopt, in the preparation or compilation of that information, any methodology that the Commission requires. The Commission may require other information disclosure as further set out in that section of the Act. The Commission notes that the purpose of such disclosure is specified in section 69ZC(1)(b) as follows:
- (b) for the purpose of enabling monitoring of, and facilitating compliance with, prescribed access principles—
 - (i) that are incorporated in any determination, approved code, or registered undertaking; and
 - (ii) with which the access provider is required to comply.
29. At this stage, the Commission does not intend to seek information disclosure pursuant to section 69ZC as part of this STD, but may do so in the future.

Compliance with access principle 3

30. Access principle 3 requires that Access Providers provide the Mobile Co-location Service on terms and conditions (excluding price) that are consistent with those terms and conditions on which each of those Access Providers provides the service to itself.
31. Vodafone did not provide a submission with its STP on how to ensure consistency with access principle 3 in providing the Mobile Co-location Service.
32. NZ Communications submitted in response to the STP that the Mobile Co-location Service should provide Access Seekers with “like-for-like” coverage, that is, a level of coverage consistent with the coverage that the Access Provider enjoys at that site.¹¹
33. The Commission’s view in the draft STD was that an obligation to provide like-for-like coverage would be key to ensure consistency with access principle 3. Any obligation to provide like-for-like coverage would, however, be subject to the factors that constitute limits on the access principles. The Commission’s view was that the appropriate balance is an obligation on Access Providers to provide like-for-like coverage to Access Seekers, or as near as is possible to like-for-like coverage given the limits on access principle 3.
34. Vodafone submitted that access principle 3 was best interpreted as providing a “like-for-like” requirement on operational processes rather than coverage outcomes.¹² Vodafone contended that coverage was an issue that was dependant on activities under the control of the Access Seeker, and any presumption that

¹¹ NZ Communications, *Submission to the Commerce Commission in relation to the STP for the Co-location on Cellular Mobile Transmission Sites Service*, 24 May 2008, p 4.

¹² Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 29.

Antennas could be placed on the same horizontal plane was unlikely to reflect the reality of co-location.

35. The Commission's view is that some operational processes that form part of the Mobile Co-location Service do require a focus on outcomes, such as coverage, to ensure consistency with access principle 3. Issues related to the process governing Antenna placement, for instance, directly affect the level of coverage an Access Seeker can expect to enjoy, and therefore the value of the Mobile Co-location Service to an Access Seeker. Accordingly, and consistently with the Commission's view in the draft STD, the Commission considers that access principle 3 requires the STD to seek to provide like-for-like coverage to Access Seekers, or as near as is possible given the limiting factors that may apply.
36. The Commission considers that a significant limiting factor in terms of coverage is the management of existing or potential radio spectrum interference arising from use of the Relevant Facilities. It is likely that interference management considerations will play an important role in determining co-location solutions that are appropriate for the New Zealand environment and on the extent to which like-for-like coverage can be provided. The Commission considers that an Access Seeker should be able to co-locate on an Access Provider's Relevant Facilities under the terms of the Mobile Co-location STD so long as any interference issues are managed in accordance with the Interference Management and Design document.
37. The Commission's view in the draft STD was that, in accordance with access principle 3, solutions that Access Providers use for their own purposes should also be available to Access Seekers. Therefore, the Commission's view was that, if necessary in order to achieve a position on the Mast that will give the Access Seeker like-for-like coverage (or as close to that position as possible), the Access Seeker can require any of the following solutions to be employed (subject to the conditions set out in the Interference Management and Design document):
 - rearrangement of the Access Provider's existing Antenna;
 - the use of Antenna Minimisation; and/or
 - Mast replacement, extension or revision.
38. As discussed at paragraphs 303 to 318 below, the Commission remains of the view that significant pro-competitive and efficiency benefits are likely to result from co-location in New Zealand. The Commission considers that the use of each of Antenna rearrangement, Mast alterations and Antenna Minimisation are viable options for maximising the number of potential co-location sites, and therefore, ensuring that scarce resources are appropriately used and that these pro-competitive and efficiency benefits are realised.

Price and non-price terms

39. The Mobile Co-location Service is listed as a specified service under Part 3 of Schedule 1 to the Act. As a specified service, determining the "price payable"

for the Mobile Co-location Service is beyond the Commission's statutory mandate.

40. The Commission has previously recommended that Mobile Co-location should not be moved from a specified service to a designated service.¹³ The basis for this recommendation was an industry view, communicated to the Commission, that price was not a barrier to Mobile Co-location.
41. Vodafone included in its STP terms requiring the "charges" (the price payable by an Access Seeker to the Access Provider for the Mobile Co-location Service) to be agreed by the Access Provider and the Access Seeker before the delivery of the Mobile Co-location Service.¹⁴
42. In the draft STD the Commission proposed removing any terms related to price from the STD, including deleting the terms requiring agreement on charges between an Access Seeker and an Access Provider. The Commission received many submissions arguing that it is appropriate to require agreement on charges as a pre-requisite to provision of the Mobile Co-location Service.
43. The Commission agrees with submissions that a pre-requisite agreement on price between the Access Provider and the Access Seeker is necessary to give certainty to the parties to the STD, even where price is not a barrier to achieving Mobile Co-location.
44. However, the Commission considers that it is not practical for an Access Provider and an Access Seeker to definitively agree all charges prior to the provision of the Mobile Co-location Service. Accordingly, the Commission considers that a requirement to agree the basis for standard charges (and an 'in principle' basis for any other relevant charges) is the appropriate pre-requisite for provision of the Mobile Co-location Service. This is discussed further in paragraphs 118 to 122 below.
45. The Commission reaffirms its statement in the draft STD that if circumstances change in the future, and price becomes a barrier to Mobile Co-location, the Commission intends to immediately review the status of Mobile Co-location as a specified service.

The terms of a final standard terms determination

46. The Commission is to exercise its discretion as to the contents of the STD in accordance with the Act. Section 300 specifies the matters to be included in the final standard terms determination as follows:

300 Matters to be included in standard terms determination: general

- (1) A standard terms determination must—

¹³ Commerce Commission, *Schedule 3 Investigation into Amending the Co-location Service on Cellular Mobile Telephone Transmission Sites*, 14 December 2007.

¹⁴ Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, General Terms, clauses 7.2 and 14.5.

- (a) specify sufficient terms to allow, without the need for the access seeker to enter into an agreement with the access provider, the designated access service or specified service to be made available within the time frames specified under paragraph (b); and
 - (b) state the time frames within which the access provider must make the service available to—
 - (i) every person who is already an access seeker when the standard terms determination is made; and
 - (ii) every person who becomes an access seeker after the standard terms determination is made; and
 - (c) specify the reasons for the standard terms determination; and
 - (d) specify the terms and conditions (if any) on which the standard terms determination is made; and
 - (e) specify the actions (if any) that a party to the standard terms determination must take or refrain from taking.
- (2) To avoid doubt, a standard terms determination may also include, without limitation, terms concerning any or all of the following matters:
- (a) dispute resolution procedures:
 - (b) the consequences of a breach of the determination (including provision for set-off or withholding rights, or liquidated damages):
 - (c) suspension and termination of the service:
 - (d) procedures for, or restrictions on, assignment of the service.
- (3) The Commission must identify which of the terms (if any) specified in a standard terms determination are allowed to be varied, on an application made under section 30V by a party to that determination, under a residual terms determination.

Application of standard terms determination

47. Section 30S of the Act specifies the application of an STD and provides that:

30S Application of standard terms determination

- (1) If the Commission has made a standard terms determination for a designated access service or a specified service,—
 - (a) an access seeker of the service may request an access provider in writing to supply the service on the terms specified in that determination; and
 - (b) the access provider must comply with the request.
- (2) However, subsection (1) does not apply if,—
 - (a) after the date of on which the standard terms determination for the service was made, the access seeker and the access provider entered into an agreement for the supply of the service; and

- (b) it is less than 18 months since the date on which that agreement came into force.
- (3) In complying with a request from an access seeker under subsection (1), the access provider must, if the Commission has made a residual terms determination for the service under section 30ZB in relation to that access seeker and that access provider, supply the service to that access seeker on the terms specified in that determination, as well as on the terms specified in the standard terms determination.
- (4) However, if there is any inconsistency between the terms specified in a residual terms determination in relation to that access seeker and that access provider and the terms specified in a standard terms determination, the terms specified in the residual terms determination prevail.

Amendments to a standard terms determination

- 48. The Act provides a range of mechanisms to amend an STD including:
 - a review under section 30R;
 - a residual terms determination under section 30ZB;
 - a clarification under section 58; and
 - a reconsideration under section 59.
- 49. Section 30R allows the Commission, on its own initiative, to commence a review of all or any of the terms of an STD. After review, the Commission may replace an STD, or vary, add or delete any of its terms, if it considers it necessary to do so. The review can also address aspects of a service not covered in an initial STD and update the terms of an STD to reflect regulatory or technological change.
- 50. In accordance with the requirements of section 30R of the Act, the Commission may conduct the review in a manner and within a timeframe as the Commission thinks fit. This enables the Commission to assess the appropriate form and degree of consultation on a case-by-case basis.¹⁵ However, the Commission will give notice in the Gazette of any consultation it intends to undertake. The Commission expects that if there is unanimous agreement in the TCF for a particular change, the consultation process is likely to be completed quickly.

Variation or review of a standard terms determination

- 51. The Commission is required by section 30O(3) to identify which of the terms (if any) specified in an STD are allowed to be varied on an application for a residual terms determination made under section 30V. A residual terms determination is an alternative to a private bilateral agreement or generic changes to an entire STD. It is only in respect of a residual terms determination

¹⁵ This can be contrasted with the process under section 59(3) of the Act which requires that a reconsideration determination follow the same process as followed in the initial determination.

that there is a limit on which terms may be varied. All terms may still be varied by parties as part of a private commercial agreement¹⁶ or by the Commission when clarifying or reviewing an STD.

52. In the draft STD, the Commission proposed that the following terms in this STD may not be varied:
- Schedule 1: Mobile Co-location Service Description; and
 - Mobile Co-location Implementation Plan
53. The Commission did not receive any submissions on this point from interested parties. Accordingly, the Commission remains of the view that these terms may not be varied on application for a residual terms determination.

Breach of an STD

54. The STD provides a range of dispute resolution procedures, including penalties if specific Service Levels are not met. However, the STD does not prevent any party from seeking remedies available to it under the Act.
55. Under section 156N(b) of the Act, an STD is an enforceable matter. As such, an Access Provider or an Access Seeker may make a written complaint to the Commission alleging a breach of the STD. The Commission must then decide what action, if any, to take, including whether to take action in the High Court. An Access Provider or an Access Seeker may also take action in the High Court under section 156P(1) of the Act.
56. On the application of the Commission, the High Court may, in addition to any other remedies, order a pecuniary penalty if there has been a breach of the STD.

Revocation of the Co-location Code

57. The Commission notes that there is currently an approved code in operation relating to the specified service ‘co-location on cellular mobile transmission sites’ (the Code for Co-location of Radiocommunications Services¹⁷). The Commission considers that the terms of this STD are likely to best give effect to the purpose statement set out in section 18 of the Act when compared with the terms of the existing code. The Commission notes its intention to revoke the Code for Co-location of Radiocommunications Services upon release of this STD.

¹⁶ However, Access Seekers may not apply for a residual terms determination if prevented by the 18 month rule: see Telecommunications Act, sections 30S(2) and 30W.

¹⁷ TCF, *Co-location of Radiocommunications Services Regulated under the Telecommunications Act 2001*, Approved by the Commerce Commission 7 December 2006.

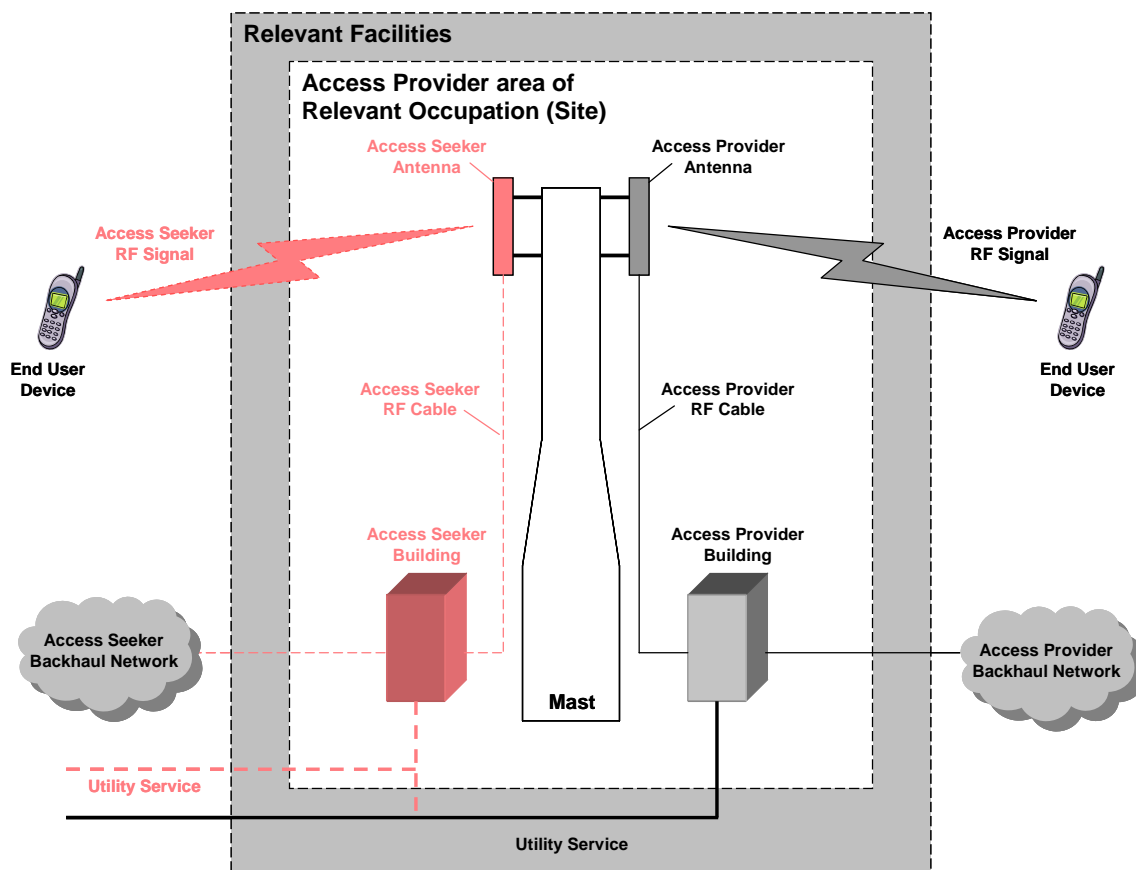
SERVICE DESCRIPTION

58. The Mobile Co-location Service is described in Appendix A: Schedule 1 – Mobile Co-location Service Description as follows:

The Mobile Co-location Service is a service that enables co-location of Cellular Mobile Telephone Network transmission and reception equipment (including any necessary supporting equipment) on or with the Relevant Facilities.

59. An indicative diagram of the Mobile Co-location Service is shown below:

Figure 1: Service Description Diagram



Definition of cellular mobile telephone network

60. The Mobile Co-location Service Description hinges on the definition of “cellular mobile telephone network”.
61. In the draft STD, the Commission retained the definition of “cellular mobile telephone network” proposed by Vodafone in its STP:¹⁸

Cellular Mobile Telephone Network means a telecommunications network:

- (a) that is designed to enable:

¹⁸ Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, General Terms, clause 1.1.

- (i) two-way communications between End Users; and
 - (ii) an End User of the service that uses the network to use the service while moving continuously between places or when standing still; and
- (b) that has the following characteristics:
- (i) the End User equipment used in relation to the network has a wireless connection to the network;
 - (ii) the service area of the network is divided into a number of contiguous geographical radio coverage areas (known as **cells**) and each cell is served by an antenna and a base station, which transmit and receives signals to and from End User equipment within that cell;
 - (iii) the service that uses the network is capable of re-using the radio frequencies in different cells within the service area; and
 - (iv) as the End User equipment travels between adjacent cells, the service that uses the network uses intercell hand-over functions to:
 - a. determine in which cell the equipment is located; and
 - b. allow the transmit and receive signal connection to transfer from one base station to an adjacent base station when the End User equipment moves out of that cell to an adjacent cell.
62. The Commission's view was that this definition incorporates the fundamental underlying characteristics of a cellular telephone network, and is broad enough to not unnecessarily limit application to future technologies.
63. TeamTalk submitted that although there is a need to keep the definition of cellular mobile telephone network wide in order to include future technologies, in its present form the definition is likely to include technologies that were not intended to be caught under the description of service in the Act.¹⁹ In order to address this concern, TeamTalk proposed that the following additional requirement be added to the definition of cellular mobile telephone network:
- (v) operates in radio frequency bands approved by the Ministry of Economic Development for Cellular mobile telephone service.
64. At the Mobile Co-location Conference, Vodafone noted that the Ministry of Economic Development (MED) does not have a list which states which frequency bands can be used for cellular mobile telephone systems, and therefore, this proposal would be difficult to implement.²⁰
65. The Commission considers that the definition of "cellular mobile telephone network" from the draft STD accurately captures mobile communications technologies that are intended to be caught by the Act. A key aspect of the definition is that it requires intercell handover functionality. The Commission's view is that this is central to a mobile communications technology falling within the description of the Act, and this criterion also effectively excludes many technologies that would not naturally be considered cellular mobile technologies.
66. The Commission notes that TeamTalk does not currently operate a technology that can provide intercell handover, and as a result TeamTalk is not considered to operate a cellular mobile telephone network.

¹⁹ TeamTalk, *Submission on Draft Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites*, 20 August 2008, p 3, para 2.8.

²⁰ Mobile Co-location Conference Transcript, 10 October 2002, p 3, lines 13-15.

67. As noted in paragraph 97 below, the Commission will maintain a list of Access Providers of the Mobile Co-location Service on its website. The Commission intends to assess each potential Access Provider on a case-by-case basis to ensure that those parties technologies meeting the requirements of the definition of “cellular mobile telephone network” are accurately identified as Access Providers. Therefore, the Commission considers that TeamTalk’s proposed additional requirement is unnecessary.

Other similar structures

68. The description of service in the Act defines “relevant facilities” as follows:²¹
- (a) any towers, poles, masts, or other similar structures—
 - (i) that are used for the transmission or reception of telecommunications via a cellular mobile telephone network; and
 - (ii) that are owned, managed, or leased by the access provider:
 - (b) all sites, buildings, or utility services that are associated with the kinds of structures referred to in paragraph (a)
69. The Commission considers that clarification of the meaning of “other similar structures” is required in order to determine the scope of those structures which can be considered to be Relevant Facilities.
70. The Commission’s view is that any structure used specifically (though not necessarily exclusively) to elevate mobile network equipment is likely be a “similar structure”, and therefore classified as a “Mast” in accordance with the definition set out in Mobile Co-location General Terms. For example, the Commission considers that a similar structure may include a building, or part of a building such as a chimney, with sufficient height that equipment can be attached directly without the need for a specifically constructed tower or pole or other additional elevating structure.
71. The Commission notes, however, that although a building that is used for the transmission or reception of telecommunications via a cellular mobile telephone network is likely to be classified as a Mast (and therefore, a Relevant Facility), only that part of the building that is subject to the Access Provider’s Relevant Occupation is available for co-location in accordance with the Mobile Co-location Terms.

The distinction between co-location and co-siting

72. Co-siting is commonly understood as a situation where the Access Seeker locates its transmission and reception equipment in close proximity to the Access Provider’s equipment (i.e., on the same property), but not on the same Mast (which is referred to as co-location).
73. Vodafone’s STP specifically excluded co-siting from the Mobile Co-location Service Description, but did not expressly define what co-siting refers to. In the draft STD, the Commission’s view was that a specific exclusion for co-siting

²¹ Telecommunications Act 2001, Schedule 1, Part 3.

was likely to be unnecessary, because co-siting clearly falls outside the scope of the Mobile Co-location Service by definition.

74. Vodafone submitted that co-location and co-siting are not the same thing, and the fact that the Mobile Co-location Terms do not include co-siting needs to be made express.²² Vodafone provided the following suggested drafting in order to distinguish between the two:

4.1 The Mobile Co-location Service specifically excludes, without limitation:

....

- 4.1.6 the location of Access Seeker Equipment on property or premises which is:
(a) the same property or premises on which the Access Provider's Site is located; and
(b) not subject to the Access Provider's right of Relevant Occupation.²³

75. The Commission considers that there is benefit in the approach taken by Vodafone. However, the Commission considers that the distinction between co-location and co-siting can be clarified by simply excluding location of equipment outside of the areas of Relevant Occupation from the Mobile Co-location Service Description.

76. The Commission also considers it necessary to clarify that location of Access Seeker equipment on or with Access Provider Sites or Buildings where the Access Seeker is not also co-locating on the Access Provider's Mast is in effect co-siting rather than co-location. Accordingly, the Commission has included the following exclusion for co-siting in the Mobile Co-location Service Description.

4.1 The Mobile Co-location Service specifically excludes, without limitation:

....

- 4.1.6 housing of Access Seeker Equipment in, on or with a Site or Building where the Access Seeker does not have, or is not in the process of applying for location of, Antenna on the Mast(s) associated with that Site or Building.

77. The concept of Relevant Occupation has been included in the definition of "Mast" in the Mobile Co-location General Terms, meaning that the concept of location outside of the area of Relevant Occupation is implicitly recognised in this exclusion.

Service availability

78. Telecom submitted that supply of the Mobile Co-location Service is subject to the availability of space, interference and capacity restrictions within and associated with the Relevant Facilities. Furthermore, Telecom contended that space, interference and capacity restrictions are more likely to prevent the Mobile Co-location Service from being provided, when compared to UCLL Co-location and Sub-loop Co-location, because:

- Relevant Facilities are much smaller than exchanges; and

²² Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 13.

²³ *ibid*, Schedule 1 - Service Description, p 2, clause 4.1.6.

- the Mobile Co-location Service is provided subject to other legislation, in particular, the Resource Management Act 1991, which provides a real (rather than theoretical) limitation on the service when compared to other co-location services.
79. Accordingly, Telecom submitted that a new clause should be included in the Service Description to expressly reflect these restrictions:
- The Mobile Co-location Service depends on the availability of space and capacity, and compliance with interference limitations at the Relevant Facilities.²⁴
80. Vodafone agreed with Telecom's submission, but noted that there are a number of other restrictions which might apply to the Mobile Co-location Service, including third party rights.
81. The Commission considers that these issues regarding restrictions on providing the Mobile Co-location Service are adequately addressed elsewhere in the Mobile Co-location Terms. Many of the limiting factors raised in submissions are contained in the limits on access principles, and as a result have been considered by the Commission in setting the terms of the Mobile Co-location STD. For example, limitations stemming from interference with the Access Provider's existing network are expressly addressed in the Mobile Co-location Interference Management and Design document. Therefore, the Commission has determined that specific reference to these limitations in the Mobile Co-location Service Description is unnecessary.

Utility Services

82. Kordia submitted clarification is required regarding whether power includes the supply of emergency back-up power where emergency electricity generation equipment is available.²⁵
83. In response, Vodafone noted that the TCF unanimously agreed that DC power should be excluded, and power backup to cell sites is almost always provided by DC power. Therefore, Vodafone submitted that back-up power should be excluded.²⁶ This view was supported by Telecom.²⁷
84. The Commission agrees with the submissions of Vodafone and Telecom and, therefore, has determined that the supply of emergency back-up power is excluded from the Mobile Co-location Service. The Mobile Co-location Service Description has been amended accordingly.

²⁴ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, Detailed submissions on the Service Description, 22 August 2008, p 1.

²⁵ Kordia, *Submission to the Commerce Commission on the Draft Standard Terms Determination for the Specified Service Co-location on Cellular Mobile Transmission Sites*, 22 August 2008, p 5, para 5.1.

²⁶ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, Table of cross-submissions, 8 September 2008, p 9.

²⁷ Telecom, *Cross-Submission on the draft Commerce Commission Mobile Co-location STD*, Table of cross-submission, 8 September 2008, p 6.

Operational Support Systems

85. For consistency with previous STDs, the Commission included the words “(and its associated functions, including any associated functions of the Access Provider’s operational support systems)” in clause 1.2 of the Service Description in the draft STD.
86. Vodafone submitted that these words are included in the definition of the UCLL Co-location Service under the Act, but not for Mobile Co-location, and so should be deleted.²⁸
87. The Commission acknowledges Vodafone’s observation, but disagrees with the view that because those words are not expressly included in the description of service in the Act that this implies that the addition of these words is beyond the scope of the Mobile Co-location Service. A key reason for the Service Description is to build detail onto the description of service in the Act, though it is important that any additional detail is consistent with Act. However, the Commission considers that the references to the Access Provider’s Operational Support Systems included elsewhere in the Mobile Co-location Terms are sufficient. Accordingly, the Commission has removed this reference from clause 1.2 of the Mobile Co-location Service Description.

²⁸ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 12.

ACCESS SEEKERS AND ACCESS PROVIDERS

88. The Act defines Access Seekers and Access Providers of the Mobile Co-location Service with reference to “cellular mobile telephone network”.²⁹ For the purposes of this STD, the Commission considers that it is necessary to determine the eligibility of Access Seekers and Access Providers of the Mobile Co-location Service.
89. Under the Act, the definitions of ‘access provider’ and ‘access seeker’ for the Mobile Co-location Service are as follows:
- Access provider:** Every person who operates a cellular mobile telephone network
- Access seeker:** Any person who-
- (a) operates, or is likely to operate, a cellular mobile telephone network; and
- (b) seeks access to the service
90. The definition of “cellular mobile telephone network” is therefore relevant for determining whether a party is an Access Provider or an Access Seeker under the Act.

Operates a ‘cellular mobile telephone network’

91. In order to determine if a particular entity is an Access Provider or an Access Seeker it is necessary to determine whether that party operates (or in the case of an Access Seeker, operates, or is ‘likely to’ operate) a cellular mobile telephone network. This may be done by determining whether the relevant party operates a telecommunications network with the characteristics set out in the definition of ‘cellular mobile telephone network’ in the Mobile Co-location General Terms.
92. In the case of an Access Seeker, the Commission’s view is that a person will be likely to operate a cellular mobile telephone network where that person has a genuine and feasible intention to operate such a network.
93. The Commission’s determination regarding status as an Access Provider or eligibility to be Access Seekers as at the date of this STD is attached as Appendix B and is summarised in Table 1 below:

Table 1: Eligibility of Access Seekers and Access Providers

Company	Access Provider	Access Seeker eligibility
Vodafone	Yes	Yes
Telecom	Yes	Yes
NZ Communications	Yes	Yes
Woosh	Yes	Yes
TeamTalk	No	No

²⁹ Telecommunications Act 2001, Schedule 1, Part 3.

94. In order to be considered as an Access Seeker, a party must seek access to the service. Therefore, the Commission can only determine the parties that it considers are *eligible* as Access Seekers because they operate, or are likely to operate, a cellular mobile telephone network.
95. In the draft STD, the Commission's view was that TeamTalk was an Access Provider in respect of the Mobile Co-location Service. TeamTalk Limited is currently operating a APCO-25 network. In the draft STD, the Commission's view was that that this network complies with the definition of a cellular mobile telephone network.
96. TeamTalk submitted that the APCO-25 technology does not provide any hand-over facility and, therefore, falls outside the definition of cellular mobile telephone network.³⁰ The Commission agrees with this submission. Therefore, the Commission's view is that TeamTalk Limited is not currently an Access Provider of the Mobile Co-location Service.

Entry and exit from the market

97. The Commission notes that there is potential for entry into and exit from the cellular mobile telecommunications market throughout the term of the STD. For example, parties that are not currently Access Providers may in the future utilise technologies that are consistent with the definition of cellular mobile telephone network, and will therefore become Access Providers of the service. The Commission will maintain a register of eligible Access Seekers and Access Providers on its website.
98. Any party that is determined by the Commission to be an Access Provider after the determination date will be bound to the terms of this STD from the date at which they are determined to be an Access Provider.

³⁰ TeamTalk, *Submission on Draft Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites*, 20 August 2008, p 3.

GENERAL TERMS

99. The Mobile Co-location General Terms set out the general rights and obligations of Access Providers and Access Seekers in relation to the Mobile Co-location Service. The Mobile Co-location General Terms is part of the Mobile Co-location Terms.

Definitions

Building, Cable Housing, Mast and Utility Service

100. Consistent with the Commission's position on greenfields co-location in the draft STD, the Commission included the words "or is to be used" in the definitions of Building, Cable Housing, Mast and Utility Service, effectively including assets that are not currently used in association with the Access Provider's cellular mobile telephone network within the scope of the Mobile Co-location Service.
101. Vodafone submitted that this is contrary to the Act, and may require an Access Provider to allow an Access Seeker to co-locate on a Mast when that Access Provider has not itself made use of the Mast.³¹ This view was supported by Telecom, who also noted that it may be unclear whether a Building or Mast "is to be used" for the transmission or reception of telecommunications via a cellular mobile telephone network.³²
102. Although the Commission's view remains that existing assets which are contemplated for future use as part of a cellular mobile telephone network are within the scope of the Mobile Co-location Service Description, as discussed in paragraphs 190 to 192 below, the Commission considers that there are good reasons for not including greenfields sites at the present time. Therefore, the words "or is to be used" have been removed from the relevant definitions in the Mobile Co-location General Terms.
103. Kordia submitted that, although it is not currently an Access Provider of the Mobile Co-location Service, if it were to roll out a cellular mobile telephone network in the future, the definitions of Building and Mast in the draft STD may require Kordia to provide the service on Relevant Facilities that are not part of its own cellular mobile telephone network. Specifically, that is on Masts where there are third party-owned Antenna used as part of that third party's cellular mobile telephone network, but no Kordia-owned Antenna.
104. Kordia submitted that this is because the definitions of Building and Mast each refer to these Relevant Facilities being used in relation to a cellular mobile telephone network, rather than the *Access Provider's* cellular mobile telephone network.

³¹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 3.

³² Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the General Terms, pp 2-3.

105. Accordingly, Kordia submitted that the definitions of Building and Mast should be amended to refer to a cellular mobile telephone network *operated by the Access Provider*.³³
106. The Commission notes that the description of service in the Act refers to co-location on or with (emphasis added):
- (a) any towers, poles, masts, or other similar structures—
 - (i) that are used for the transmission or reception of telecommunications via a *cellular mobile telephone network*; and
 - (ii) that are owned, managed, or leased by the access provider:
107. The Commission considers that limiting the Relevant Facilities that are available for co-location to Masts that are used for the transmission or reception of telecommunications via a cellular mobile telephone network *operated by the Access Provider* would limit the population of sites captured by the service beyond that intended by the Act.
108. The Commission considers that the approach taken in the draft STD is consistent with the purpose and intention of the description of service in the Act (subject to considerations of limitations regarding physical space, Access Provider forecasting and interference management requirements), and that Kordia's proposal may unduly narrow the scope of the network infrastructure made available for co-location. Therefore, the Commission has not made the amendments to the definitions of Building and Mast proposed by Kordia.

Customer and End User

109. Telecom submitted that it is unnecessary to use the definitions of both 'Customer' and 'End User' throughout the STD because:
- the two separate definitions were introduced in earlier STDs to differentiate between different parts of the service; and
 - differentiation is not required for the Mobile Co-location Service.
110. Consequently, Telecom proposed the amendments to the definition of Customer to incorporate the concept of end-users, and the consequential deletion of the defined term End User.³⁴
111. The Commission agrees with this submission and has amended the definitions accordingly. The Commission notes, however, that "end-user" is still used in the STD to reflect the use of that term in the Act.

Relevant Occupation

112. The description of service refers to Relevant Facilities that are owned, managed or leased by the Access Provider. In the STP, Vodafone sought to capture this

³³ Kordia, *Submission to the Commerce Commission on the Draft Standard Terms Determination for the Specified Service Co-location on Cellular Mobile Transmission Sites*, 22 August 2008, pp 3-4.

³⁴ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the General Terms, p 5.

concept with the defined term Relevant Occupation, which was in turn used to qualify the definitions of Mast, Building and Site.

113. In the draft STD, the Commission removed the specific definition of Relevant Occupation, but built that concept into the definition of Relevant Facilities, which includes Masts, Buildings and Sites.
114. Vodafone submitted that the individual terms Mast, Building and Site were used in the draft STD in their own right. The Commission acknowledges Vodafone's submission and has reinserted the definition of Relevant Occupation. The Commission also notes that qualifying the definition of Mast with "Relevant Occupation" is now key for distinguishing co-siting from co-location in the Mobile Co-location Service Description.

Antenna

115. Telecom submitted that the definition of Antenna should be amended to include all equipment that receives or transmits radio communications, because without this change third parties who co-locate on an Access Provider's Relevant Facilities, but who do not operate a cellular mobile telephone network, will not be subject to the processes set out in the Interference Management and Design document.³⁵ Vodafone supported this change, noting that it would ensure that the interests of other existing third parties would be recognised in the Interference Management and Design document.³⁶
116. The Mobile Co-location STD is designed to take the place of a bi-lateral commercial arrangement between the Access Provider and the Access Seeker. While the Commission is required to consider the impact of the STD on the interests of third parties who use Relevant Facilities, there are limits on the extent to which the Commission can mandate processes that allow for the management of third party interference issues.
117. In the draft STD, the Commission noted that interference management issues may impact third parties by including a requirement in the Interference Management and Design document for the Access Provider to use all reasonable commercial endeavours to ensure that third parties with equipment installed and operating on or with the Relevant Facilities become involved in the process for managing interference issues. The Commission's considers that this clause remains appropriate, and also notes that the STD does not take precedence over the Radiocommunications Act 1989 and associated regulations, which are the primary tools in New Zealand for managing radio interference issues.

Agreement on charges

118. In the draft STD the Commission removed the requirement for the Access Provider and Access Seeker to agree all charges payable by the Access Seeker prior to the Mobile Co-location Service being supplied. In doing so, the

³⁵ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the General Terms, p 1.

³⁶ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, Table of cross-submissions, p 1.

Commission cited the findings of the Schedule 3 Investigation into Mobile Co-location, in which the Commission concluded that the issues preventing effective co-location in the mobile services market are non-price related, and therefore, does not expect disputes regarding the price payable to arise. The Commission's view was that any terms requiring agreement between the Access Providers and Access Seekers on price were not required given the findings of the Schedule 3 Investigation.

119. Vodafone contended that provisions requiring agreement on price should be reinstated, as it is a feature of specified services such as the Mobile Co-location Service that prices are to be agreed by the parties to an STD.³⁷ Vodafone further contended that it would be commercially untenable to require an Access Provider to provide the Mobile Co-location Service when a price had not been agreed.
120. Similarly, Telecom submitted that without including an acknowledgement of agreement on charges (as suggested in Vodafone's STP), it is possible to read the STD as requiring an Access Provider to provide the service without prior agreement on price. Telecom submitted that, in this scenario, the Access Provider could be left in the situation where it is required to provide the service on the terms set out in the STD, but has no guarantee that its costs from providing the service will be recovered.³⁸ NZ Communications also submitted that provisions requiring agreement on price should be reinserted.³⁹
121. The Commission acknowledges the commercial reality that an Access Provider should not be required to provide a service prior to reaching an agreement on the applicable charges. The Commission is concerned, however, that it may be impracticable for the Access Provider and Access Seeker to agree *all* charges payable by the Access Seeker as a prerequisite to the service being made available (as was the requirement under Vodafone's STP). For example, there may be unique, site-specific costs associated with provision of the Mobile Co-location Service that it is reasonable for the Access Provider to seek to recover, but are not apparent until part way through provision of the service (for example, not until the site visit stage). Accordingly, the Commission has included as a prerequisite the requirement for the Access Provider and Access Seeker to agree:
 - the basis of the occupation charge (i.e., the ongoing rental charges, or similar);
 - the charges directly associated with the standard application process; and
 - an "in principle" basis for any other relevant charges.
122. The Commission notes that this prerequisite will require agreement on the standard charges, whilst providing some degree of certainty on any non-standard

³⁷ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, pp 5-6.

³⁸ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submissions on General Terms, p 7.

³⁹ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, p 4.

charges (which will be formally agreed at the relevant time during the application process) for both Access Providers and Access Seekers. The Commission has also removed or amended several provisions relating to payment of charges or costs from the draft STD on the basis that any charges must be agreed between the Access Provider and the Access Seeker.

SERVICE LEVEL TERMS

123. The Mobile Co-location Service Level Terms set out the quality and performance of the Service Level commitments of the Access Provider to the Access Seeker for the delivery of the Mobile Co-location Service. It also provides for a penalty mechanism where the Access Provider fails to meet its Service Levels. The Mobile Co-location Service Level Terms is a schedule to the Mobile Co-location General Terms.

Number of Service Levels

124. The draft Mobile Co-location STD introduced a number of additional Service Levels that were not included in the STP submitted by Vodafone. These additional Service Levels were in relation to:
- Access Provider acknowledgement of receipt of various Access Seeker Applications and documents;
 - the Interference Desktop Study;
 - confirmation of validity of Multi-Site Applications;
 - confirmation of design notes;
 - approval of the amended project plan;
 - fault management tasks; and
 - metrics for the availability of the provisioning system, fault management system, and Common Format Site Database.
125. Telecom submitted that the inclusion of Service Levels for tasks that are not bottlenecks should be removed. Telecom specifically proposed removing acknowledgement of initial site applications and design notes, confirmation of design notes, decisions on an Access Seeker's preliminary notice, and approval of amended project plans.⁴⁰
126. NZ Communications submitted that it was generally satisfied with the Service Levels, subject to comments on the size of the penalties.⁴¹ Woosh, on the other hand, submitted that if the scope of the Service Level Terms could not be reduced, then the Commission should consider differentiated regulation between Access Providers based on the number of cell sites they controlled.⁴²
127. In the final Mobile Co-location STD, the Commission has generally retained the Service Levels from the draft STD. The larger number of Service Levels compared to other STDs is reflective of the greater number of tasks required to provision the Mobile Co-location Service. However, the Commission has made

⁴⁰ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, pp 6-8.

⁴¹ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, p 13.

⁴² Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 2.

minor amendments, in the interests of simplicity, such as incorporating the Service Level for amended project plans into a more general Service Level for all project plans.

128. The Commission does not consider there to be appropriate justification to apply differentiated or asymmetric regulation with regard to Service Levels based on the size of a network operator or its network for a specified service. The Commission notes that performance penalties only apply to Applications that are the subject of accurate Access Seeker forecasts, and therefore, Access Providers should have the ability to allocate resources in advance of actual Applications being made (including, if necessary, by subcontracting).
129. The Commission has accordingly set one standard of Service Levels for all Access Providers, regardless of the number of cell sites they operate.

Service Level timeframes

130. The draft Mobile Co-location STD set out shorter Service Level timeframes than those in Vodafone's STP for:
 - the completion of the Interference Desktop Study (10 rather than 15 Working Days);
 - the decision on a Full Site Application (10 rather than 20 Working Days); and
 - approval of the project plan (seven rather than 10 Working Days).
131. Telecom submitted that in its experience in delivering a commercial co-location service, 10 Working Days is an unachievable timeframe for the Interference Desktop Study due to the requirement to give existing co-locators sufficient opportunity to provide necessary information.⁴³ Similar arguments regarding the timeframe for Full Site Applications were also made by Telecom, which it considered should be 20 Working Days (which also reflects the timeframe set out in the TCF Code for co-location).⁴⁴
132. Telecom also submitted that the timeframe for approving project plans should be extended back to 10 Working Days as proposed in the STP, because the potential consequences for the Access Seeker build of rushing this task would not outweigh the benefit of the additional three Working Days gained by the more onerous Service Level.⁴⁵
133. Whilst not recommending specific changes to the timeframes in the draft STD, Vodafone submitted that it would need to allocate significantly greater resources to provision the Mobile Co-location Service than originally contemplated.⁴⁶ In its cross submission, Vodafone also urged the Commission to consider the

⁴³ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, p 5.

⁴⁴ *ibid* p 6.

⁴⁵ *ibid* p 7.

⁴⁶ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 33, para 91.

resultant costs that would arise out of the more onerous Service Level regime, and the degree to which it would generate an incremental increase in co-location.⁴⁷ Vodafone also noted that the additional timeframes suggested by Telecom would allow Access Providers to produce better quality outputs.⁴⁸

134. NZ Communications submitted that they were satisfied with the timeframes for the Service Levels set out in the draft STD.⁴⁹
135. The Commission has revised the position set out in the draft Mobile Co-location STD on Service Level timeframes. Based on information provided in submissions, the Commission considers that benefits from the additional 18 Working Days gained through the shorter Service Level timeframes set out in the draft STD are unlikely to outweigh the risks to the quality of outputs that may arise.
136. The Commission also notes that increasing the Service Level timeframes by a total of 18 Working Days is unlikely to have a significant impact on provision of the Mobile Co-location Service across a number of Relevant Facilities. For example, if an Access Seeker submits 10 Applications per week for 20 weeks and each Application takes 125 Working Days, it could take 225 Working Days to achieve project plan approvals at all 200 Relevant Facilities. Including the timeframes recommended by Telecom would only add 18 Working Days to the overall timeframe for all 200 Applications.

Service Level capacity limits

137. In the draft Mobile Co-location STD, the Commission replaced the monthly capacity limit suggested in Vodafone's STP with a Service Level limit where the Access Provider would only be required to issue up to a maximum of 15 Site Data Packs to each Access Seeker over five Working Days.
138. Vodafone submitted that the Service Level limit for each Access Provider should be 10 per Access Seeker per week, as a limit of 15 would put the end-to-end process under too much pressure.⁵⁰
139. Telecom also submitted that the Service Level limit should be reduced to 10 Applications per Access Seeker per five Working Days, otherwise the likelihood would be that Access Providers would (at some point) receive more than 60 orders per month, which would affect their ability to deliver the Mobile Co-location Service to other Access Seekers.⁵¹ Telecom also proposed that a Service Level limit should be in place for Full Site Applications as there is no

⁴⁷ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, Table of cross-submissions, p 12, para 28-29.

⁴⁸ *ibid* p 14.

⁴⁹ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, p 11.

⁵⁰ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 35, para 97.

⁵¹ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, p 6.

guarantee that the Access Seeker will submit a Full Site Application shortly following the issuing of the Site Data Pack.⁵²

140. Woosh submitted that they would be able to meet the proposed capacity limits provided that Access Seekers submitted proper forecasts and erroneous forecasts were penalised.⁵³
141. At the Mobile Co-location conference NZ Communications stated that they would accept a Service Level capacity limit for each Access Provider of 10 Applications per Access Seeker per five Working Day period.⁵⁴
142. Consistent with views expressed in submissions on the draft STD and at the Mobile Co-location Conference, the Commission has revised the Service Level capacity limit for each Access Provider from 15 to 10 Site Data Packs per Access Seeker per five Working Day period. The Commission has also included the same Service Level limit for Full Site Applications to ensure that such Applications are limited to a manageable level.

Performance penalties

143. The Service Level penalty regime set out in the draft Mobile Co-location STD comprised financial penalties for:
 - defaults on specific Service Levels of 20% of the relevant charge; and
 - a delay day penalty for the total time required to deliver the most important tasks in the end-to-end application process.
144. The delay day penalty rate set in the draft STD was \$500 per day. A key benefit of the delay day penalties is that Access Provider would be incentivised to claw back any delay for a deliverable by meeting the Service Levels for subsequent deliverables before the required time periods.
145. Telecom⁵⁵ and Woosh⁵⁶ submitted that the Service Level penalties should be limited to 7% of the charge for the relevant service, which would be consistent with previous determinations, and that the delay day regime should be removed. Furthermore, Woosh proposed a review at the end of a six-month Soft Launch to determine whether additional measures, such as delay day penalties, are required.⁵⁷ This proposal was supported by Vodafone in its cross submission.⁵⁸
146. Vodafone stated a preference for the delay day penalty regime only, with the penalty capped at 7% of the monthly charge for each Relevant Facility, on the

⁵² Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, p 4.

⁵³ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 5.

⁵⁴ Mobile Co-location Conference Transcript, 10 October 2008, p 97, lines 28-30.

⁵⁵ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, pp 3-4.

⁵⁶ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 2.

⁵⁷ *ibid*, p 5.

⁵⁸ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, Table of cross-submissions, 8 September 2008, p 16.

basis that otherwise the penalties would go beyond those set in previous determinations.⁵⁹

147. TUANZ supported the penalty regime set out in the draft STD.⁶⁰ While also in agreement with the structure of the performance penalties, NZ Communications submitted that the amounts of the penalties were insufficient to ensure efficient provision of the Mobile Co-location Service. NZ Communications proposed a penalty rate of \$2,000 for individual defaults, as well as for each delay day.⁶¹ NZ Communications also submitted that consideration should be given to providing national roaming access at reduced prices as a tool to remove the incentives on incumbents to prevent Mobile Co-location.⁶²
148. In response to the roaming proposal raised by NZ Communications, Vodafone noted in its cross submission that this would be unworkable as there may not be a roaming agreement in place between the Access Seeker and Access Provider, the billing system implications would be considerable and costly, and the Commission would be required to determine the marginal cost for roaming (which would be time consuming).⁶³
149. The Commission considers that the process for provisioning the Mobile Co-location Service is more intensive and more demanding on both the Access Provider and Access Seeker than for the fixed-line services that are the subject of previous STDs. The Commission's view is to retain the delay day regime on the grounds that it is more flexible than the Service Level-specific penalties set out in previous STDs. However, the Commission has removed the Service Level-specific penalties in this final Mobile Co-location STD in order to simplify the penalty regime and to incentivise appropriate Access Provider behaviour.
150. The Commission remains of the view that \$500 is an appropriate penalty rate for each delay day. The Commission notes that it has departed from the penalty rate of 7% previously, such as in the UCLL Co-location STD where a penalty of \$1.85 was set for each day each end-user is impacted by a delay in Telecom building a co-location site. Furthermore, the Commission considers that a penalty of \$2,000 per delay day, as suggested by NZ Communications, is likely to be much greater than any potential costs incurred by the Access Seekers by the delay, such as lost revenue or additional roaming costs, therefore providing an inefficient incentive regime. The Commission also notes that if disproportionately high penalties were set, this may impact on the price payable for provision of the Mobile Co-location Service.

⁵⁹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 16.

⁶⁰ TUANZ, *Comment on Commerce Commission consultation: Draft Mobile Co-location Standard Terms Determination*, 22 August 2008, p 2.

⁶¹ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, pp 12-13.

⁶² *ibid* p 3.

⁶³ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, pp 17-18, para 44.

Service Level reporting

151. The draft Mobile Co-location STD set out reporting requirements for the STD which did not differentiate between individual Applications and Applications for multiple Relevant Facilities.
152. Telecom proposed that as Multi-Site Application projects have different service levels as (agreed by the parties), they should not be subject to the reporting and measuring obligations set out in the STD.⁶⁴ In its cross submission, Vodafone agreed with Telecom's proposal to explicitly remove any obligation to report on Multi-Site Application service levels.⁶⁵
153. The Commission considers that the arguments for reporting on individual Applications are also valid for service levels that are agreed as part of Multi-Site Applications. Therefore, the final STD includes specific obligations for the Access Provider to report on a monthly basis to both the relevant Access Seeker and to the Commission regarding performance against the service levels set out in Multi-Site Application projects. In accordance with clause 13.2.15 of the Mobile Co-location Operations Manual, Access Providers are also required to provide the Commission with a copy of the approved 'Multi-Site Project Plan' upon agreement with the Access Seeker.
154. The Commission considers that in the absence of reporting on Multi-Site Applications there would be a lack of transparency around relative performance of the multi-site process, and progress in the number Mobile Co-location project plans approved by all Access Providers.

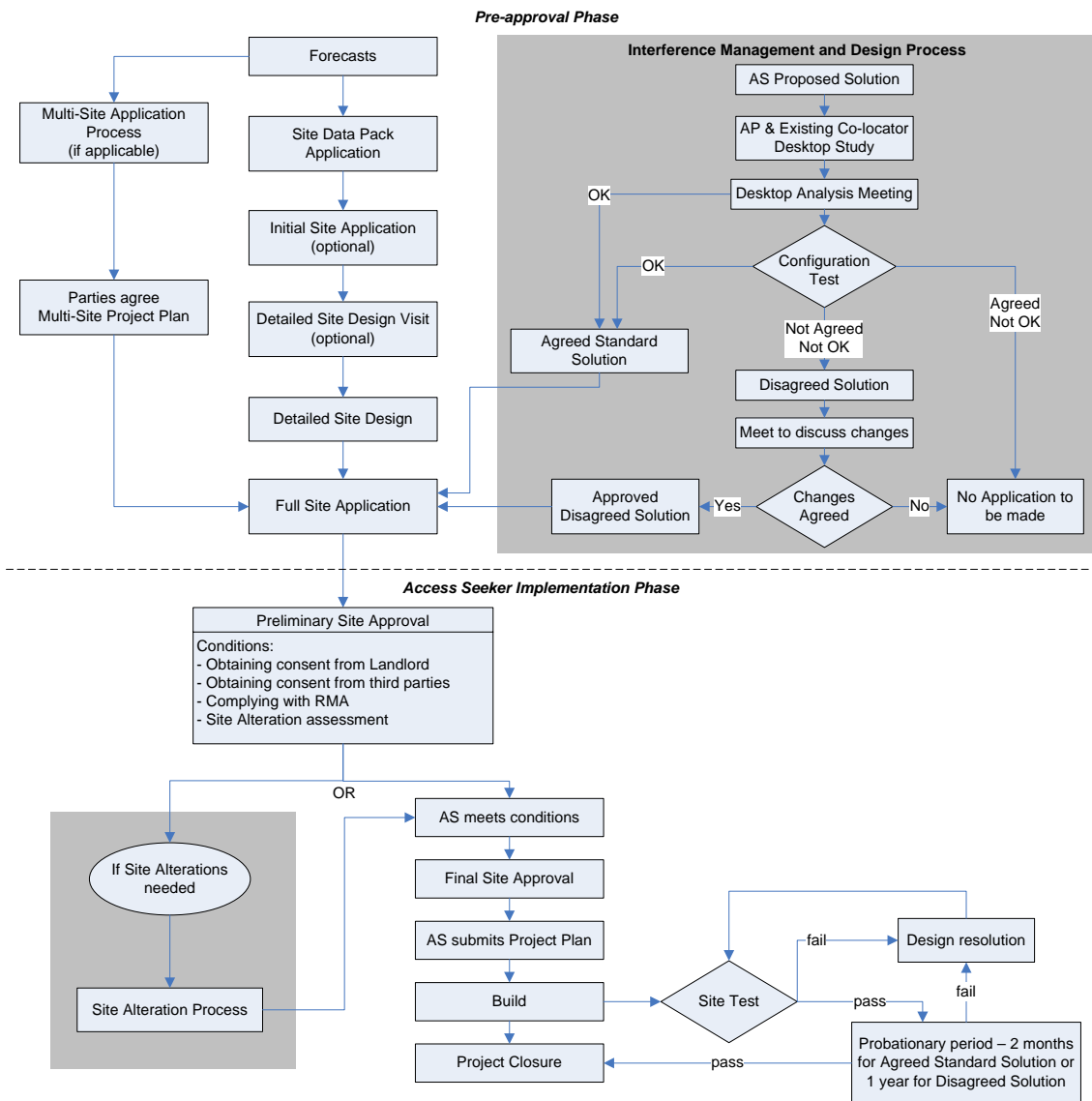
⁶⁴ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, p 3.

⁶⁵ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, Table of cross-submissions, 8 September 2008, p 12.

OPERATIONS MANUAL

155. The Mobile Co-location Operations Manual sets out the operational processes and procedures for supply of the Mobile Co-location Service. The Mobile Co-location Operations Manual is a schedule to the Mobile Co-location General Terms.
156. The following diagram provides a high-level summary of the process set out in the Operations Manual, and its relationship with the Interference Management and Design document.

Figure 2: Operations Manual Process Diagram



Provisioning and mobile co-location tasks

157. The Operations Manual contains a five stage, end-to-end process for provision of the Mobile Co-location Service. The provisioning process includes the following steps:
- Stage 1: Site desktop assessment;
 - Stage 2: Detailed site design;
 - Stage 3: Landlord and third party approvals, RMA consents, and final site approval;
 - Stage 4: Project plan; and
 - Stage 5: Mobile Co-location implementation.

Site Agreement

158. In the draft STD the Commission removed the requirement for the Access Provider and the Access Seeker to execute an agreement for the terms and special conditions relating to the provision of the Mobile Co-location Service at the Relevant Facilities (the 'Site Agreement'). This was on the basis that the draft STD specified sufficient terms to allow, without the need for the Access Seeker to enter into further agreement with the Access Provider, the service to be made available.
159. Vodafone submitted that the Site Agreement was necessary to capture:
- any special conditions relating to the provision of the Mobile Co-location Service at the Relevant Facilities that were not already provided for under the Mobile Co-location Terms, such as those that might be set by the landlord; and
 - the commercial terms (such as the charges for Applications etc).
160. Furthermore, Vodafone submitted the Site Agreement is necessary to the provisioning process, because provision of the Mobile Co-location Service cannot be completed without both of these elements.⁶⁶
161. Telecom agreed that the Site Agreement is a key component of the provision of the Mobile Co-location Service, but suggested that it be referred to as a notice of "site-specific conditions", rather than a site agreement.⁶⁷
162. The Commission recognises the importance of the Access Provider and the Access Seeker having the ability to acknowledge any agreed charges and third party conditions that are specific to each site. The Commission has reinserted a mechanism for Access Providers and Access Seekers to record these site-

⁶⁶ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 35.

⁶⁷ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 1.

specific conditions that necessarily apply, which the Commission has labelled this a “Schedule of Site-Specific Conditions”. The Commission notes that any such recorded conditions will be in addition to, but not inconsistent with, the Mobile Co-location Terms.

163. The Commission considers that third party requirements and specific charges are the only conditions that need to be noted in such a schedule as other terms are adequately addressed in the Mobile Co-location Terms.

Multi Site Applications

164. The draft STD included a process that will enable parties to make “Multi-Site Applications” (for 10 or more sites) which will be dealt with on a “project” basis. This process was based on a proposal from Telecom, and allowed a Multi-Site Application to be made regardless of whether there are similarities between the sites. The purpose of the Multi-Site Application process is to allow Access Seekers to obtain approval for multiple sites in a reduced timeframe.
165. Vodafone submitted that the Multi-Site Application concept would benefit from the Access Seeker providing further information as part of the Multi-Site Application, including:
- an overview of how the project could proceed; and
 - the general design and type of equipment that is planned for all of the Relevant Facilities that are the subject of the Multi-Site Application.⁶⁸
166. Vodafone suggested that this additional information would assist the Access Provider to formulate a better Multi-Site Project Plan.
167. Having considered this proposal, Telecom agreed that “an overview of how the project could proceed” would be useful information to have, and agreed with its inclusion. However, Telecom submitted that although “the general design and the type of equipment that is planned for all of the Relevant Facilities that are the subject of the Multi-Site Application” would be useful, it should not be mandatory because the Access Seeker is required to supply an Agreed Standard Solution or Disagreed Solution under clause 14.2.4 of the draft Operations Manual.⁶⁹
168. The Commission has removed the requirement from clause 14.2.4 (of the draft STD) for an Access Seeker to include an Agreed Standard Solution or Disagreed Solution for each Relevant Facility that is part of the Multi-Site Application. The Commission considers that the Access Seeker’s Full Site Applications (submitted in accordance with a Multi-Site Project Plan prepared under clause 13.2.12 of the Mobile Co-location Operations Manual) will be required to contain either an Agreed Standard Solution or Disagreed Solution (as is the case with a standard individual Full Site Application).

⁶⁸ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 31.

⁶⁹ Telecom, *Cross-Submission on the draft Commerce Commission Mobile Co-location STD*, 8 September 2008, Table of cross-submissions, p 24.

169. The Commission's view is that this is the more appropriate point at which these detailed interference solutions should be provided (rather than when the initial Multi-Site Application is made). Therefore, the Commission has determined that it is appropriate for the Access Seeker to provide the general design and type of equipment that is planned for all of the Relevant Facilities as part of its Multi-Site Application. A new clause 13.2.5 has been included in the Mobile Co-location Operations Manual to reflect this.
170. In response to a submission from Vodafone⁷⁰, the Commission has also included an indicative template for Multi-Site Applications (see Appendix BB of the Mobile Co-location Operations Manual).

Rejection of an Application

171. Clause 13.8.2 of the Operations Manual in the draft STD required the Access Provider take into account a number of factors when processing an Application, essentially comprising those limits on standard access principles under the Act that are applicable to the Mobile Co-location Service.
172. As noted in paragraphs 24 to 26 above, the access principles and the limits on those access principles have been considered by the Commission in setting the terms of the Mobile Co-location STD. The Commission's view is that the limits on access principles are not absolute limits on the scope of the Mobile Co-location Service.
173. The Commission considers that the specific terms of the Mobile Co-location STD strike the appropriate balance between the access principles and limits on access principles without the Access Provider needing to further consider these limits when assessing Applications. Accordingly, it is inappropriate for the Access Provider to be specifically considering the limits on access principles in addition to the express terms of the STD when deciding whether to accept or reject an Access Seeker Application.
174. The Commission has amended this section of the Mobile Co-location Operations Manual so that, unless expressly provided otherwise, an Access Provider must accept any Application that is submitted in accordance with, and meets the requirements of, the Mobile Co-location Operations Manual.

Greenfields co-location

175. Greenfields sites are sites where two or more parties have an interest in providing mobile services in a location where there are no existing Relevant Facilities. Vodafone's STP incorporated a voluntary mechanism for two or more parties to work together in the construction of new facilities where those parties have common interests in a greenfields site.
176. In support of its view that greenfields co-location should be voluntary, Vodafone submitted that greenfields sites do not come within the scope of the Mobile Co-

⁷⁰ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, Table of cross-submissions, p 23.

location Service, arguing that the description of service in the Act only applies to existing Relevant Facilities.⁷¹

177. The Commission included a mandatory greenfields co-location process in the draft STD. The Commission expressed the view that greenfields sites come within the description of service in the Act on the basis that Vodafone's interpretation failed to take into account the broader context of the description of service, including its purpose to promote competition in telecommunications markets for the long-term benefit of end-users.⁷²

Scope of the Mobile Co-location Service

178. In submissions on the Commission's draft STD, Vodafone and Telecom both argued that regulation of greenfields sites falls outside the description of service in the Act. Vodafone argued that a Relevant Facility can only be a facility that *is already constructed and in use* for transmission or reception of telecommunications, relying on a literal interpretation of the particular phrases 'that are used' and 'that are owned' in the description of service in the Act.⁷³
179. Telecom took a similar position to Vodafone, arguing that the plain meaning of the phrases 'are used' and 'are owned' used in the description of service mean that the STD cannot regulate sites that have not yet been constructed, or regulate sites that are not yet used for telecommunications.⁷⁴ Accordingly, Telecom submitted that the Commission's position is *ultra vires* the description of service in the Act. Telecom also argued that a strict construction of the description of service was required under the general principle that clear statutory language is required before an interpretation that encroaches on existing rights will be adopted.⁷⁵
180. The meaning of the description of service needs to be considered as a whole. While the plain language of the description of service in the Act indicates that the Mobile Co-location Service is a service that facilitates co-location on facilities that *are used* for mobile telecommunications, it also contemplates that regulation may take effect before those facilities are used to ensure that the Mobile Co-location Service can be provided effectively from as soon as those facilities are used by the Access Provider.
181. For example, the use of the word 'enables' in the description of service in the Act indicates that the resulting regulation should be designed to achieve co-location on Relevant Facilities that 'are used', but may involve processes that apply to Relevant Facilities that will be used in the future to ensure that co-location will be possible and can occur when the Relevant Facilities are finally constructed and are actually being used for that purpose.

⁷¹ Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, p 40, para 115.

⁷² Commerce Commission, *Draft Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites*, pp 16-17, paras 81-86.

⁷³ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 37.

⁷⁴ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 6.

⁷⁵ *ibid* p 7.

182. This approach is consistent with a purposive approach to the interpretation of the description of service in the Act. Telecom also argued in its submission that it is inappropriate to consider the section 18 purpose because there is no ambiguity in the plain meaning of the language of the description of service. While a statutory purpose statement should not be used to import ambiguity where the plain meaning of the statutory language is clear, consideration of the purpose is an important element of statutory interpretation.
183. In setting the terms of the Mobile Co-location STD the Commission is required to consider the section 18 purpose statement under section 19(c) of the Act. The Mobile Co-location Service is broadly intended to benefit end-users by enabling the co-location of mobile network equipment, therefore allowing greater consumer choice and creating downwards pressure on prices.⁷⁶ A distinction between facilities that are operational and facilities that are “to be” operational does not support this purpose, as steps taken on the part of Access Providers and Access Seekers to enable effective co-location may need to be taken before a facility is operational.
184. Public policy arguments raised by Kordia and TUANZ in submissions on the STP, and noted by the Commission in the draft STD, further demonstrate that the long-term benefit of end-users is served by consideration of greenfields sites as part of the regulated service. The Commission considers that regulation of greenfields sites so that anticipated Relevant Facilities can in fact support co-location is naturally a part of the statutory purpose.
185. Accordingly, the Commission remains of the view expressed in the draft STD that the approach of both Vodafone and Telecom focuses unduly on the words ‘are used’ at the exclusion of consideration of the description of service as a whole. Further, the Commission’s approach is to be preferred because it is likely to best give effect to the section 18 purpose.
186. Telecom also argued that regulation of greenfields sites encroaches on the property rights of an Access Provider unduly.⁷⁷ The Commission notes that the scheme and objects of the Telecommunications Act clearly contemplate the encroachment of the property rights of an Access Provider. This is consistent with the purpose statement of the Act set out in section 3(1) of the Act, which provides that the purpose of the Act is to regulate the supply of telecommunications services. The Commission considers that the additional regulation of greenfields sites does not significantly encroach further on the property rights of an incumbent network operator.
187. For the above reasons, the Commission considers that regulation of greenfield sites does come within the scope of the description of service for the Mobile Co-location Service in the Act.

⁷⁶ See Commerce Commission, *Schedule 3 Investigation into Amending the Co-location Service on Cellular Mobile transmission Sites*, 14 December 2007, p 12.

⁷⁷ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, pp 13-14.

Practical difficulties

188. Woosh submitted that greenfields co-location should be a voluntary exercise, as having to advertise an intention to build in a particular location would have two impacts:
- it would signal to the market an intention to provide coverage in a particular area, or to a particular market segment, thereby undermining commercial advantage; and
 - it would introduce an inordinate delay into the process, because the RMA consent for a joint build may prove problematic.⁷⁸
189. NZ Communications submitted that although it generally supports the observations of the Commission in relation to compulsory greenfields co-location, caution is required to ensure that network operators are not inadvertently inhibited in rolling out their networks.⁷⁹
190. The Commission notes that Vodafone and Telecom both acknowledged at the Mobile Co-location Conference that while they do not have very aggressive new site roll-out plans, they do have plans to roll out new sites in the short term. NZ Communications, on the other hand, is currently in the process of building a new mobile network, and therefore, would likely be the party most affected by the requirements of a mandatory greenfields co-location process. All three parties indicated that regulation of greenfields sites at the current time would significantly interfere with those short-term rollout plans, and would adversely affect the provision of mobile services to end-users.
191. The Commission considers that because of the practical difficulties associated with operationalising greenfields co-location and the potential to significantly impact on established, short-term rollout plans, co-location on greenfields sites is likely to be best achieved through commercial industry arrangements at the present time. Accordingly, the Commission has removed the greenfields co-location process from the Mobile Co-location Operations Manual.
192. The Commission does, however, reiterate its view that greenfields sites fall within the description of service in the Act, and that greenfields co-location does have a number of significant advantages. Given the emphasis submitting parties placed on the ability to commercially agree greenfield procedures, the Commission does expect to see commercial arrangements for greenfields co-location to emerge quickly. Therefore, should the industry fail to agree an effective greenfields regime that operates in the long-term interests of end-users within the next nine months, the Commission will immediately consider a review under section 30R of the Act to include greenfields sites as part of the regulated Mobile Co-location Service.

⁷⁸ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 3.

⁷⁹ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, p 15.

Access Provider forecasting

Forecast Horizon

193. One of the limits on access principles for the Mobile Co-location Service is the Access Provider's current and reasonable forecast requirements for capacity on the Relevant Facilities.⁸⁰
194. In the draft STD, the Commission's view was that for a forecast to be reasonable, it must be based on a sufficient level of specificity. The Commission's preliminary view was that a forecast horizon of two years strikes an appropriate balance between allowing Access Providers the ability to reasonably reserve space for their future deployment plans, and the benefit to end-users that will result from allowing an Access Seeker to co-locate where feasible.
195. Telecom challenged this position in its submission, supporting a five year forecasting period. Telecom noted that a forecasting period of five years is consistent with the five year "use it or lose it" period applied by the Government to recent spectrum acquisitions, and provides parties with sufficient certainty to enable them to manage the uncertainties that currently exist around the delivery of new technologies.⁸¹
196. Furthermore, Telecom suggested that shortening the forecast horizon below five years has the potential to undermine an Access Provider's ability to build a business case for the deployment of a new technology. Telecom submitted that the commercial reality is that major investment decisions associated with the deployment of new technologies take time, and are influenced by what happens in other markets.⁸²
197. Vodafone submitted that to ensure that an Access Provider's current and reasonable forecast requirements are fully considered, it is important that Access Providers continue to have appropriate incentives to efficiently provision for reasonable future forecast network requirements. Vodafone elaborated by stating that an Access Provider would have a significantly reduced incentive to efficiently provide for future forecast needs if any additional capacity it secures could immediately be made available to an Access Seeker on its request. It was also suggested that, in these circumstances, consumers could be made worse off as it could introduce delays to the speed with which network operators can respond to consumer demands to increase network capacity or roll out new technologies, and increase the costs associated with building a mobile network.⁸³
198. In the context of this STD, the main issue is the period of time for which an Access Provider is able to set aside space on its Relevant Facilities for its future forecast requirements. In its submission, Vodafone reiterated its position that

⁸⁰ Telecommunications Act 2001, Schedule 1, Part 3.

⁸¹ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 19, para 69.

⁸² *ibid*, p 20, para 75.

⁸³ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, pp 20-21, para 48.

network lead times of at least five years are reasonable given the history of its previous network build, and the existing network plans it has for the deployment of its Long Term Evolution (LTE) technology.⁸⁴

199. This view was also supported by Telecom and Woosh. Woosh noted that a controlled, nationwide rollout of a *mature* technology will take in excess of three years, and that the technologies currently under discussion (WiMAX and LTE), are not mature.⁸⁵ To support its view, Telecom cited the example of its WCDMA rollout, for which:
- initial planning began in 2001;
 - site acquisition and detailed planning began in 2004;
 - Telecom board approval was received in June 2007;
 - the contract for deployment was signed with Alcatel Lucent in September 2007 for a progressive launch starting in late 2008; and
 - rollout is to be completed in 2011.⁸⁶
200. In response, NZ Communications submitted that it is strongly supportive of the two year forecast horizon in the draft STD, and that the long-term interests of end-users should not be compromised by internal inefficiencies of Access Providers in the time taken to rollout extended or additional networks.⁸⁷ Specifically, NZ Communications stated that the internal processes of Telecom and delays in approvals from its board should not be an argument to support the extension of the reservation period for Access Providers.⁸⁸
201. Vodafone also expressed concern that a two year forecast horizon could jeopardise its current roll out plans for high-speed LTE and MIMO network technologies (which require additional Antennas at existing sites), and the consequent benefits this will provide for end-users.⁸⁹
202. At the Mobile Co-location Conference, Telecom also stated that network-wide rollout plans typically have a business case signed off two or three years in advance of the deployment being completed.⁹⁰
203. The Commission considers that under a five year forecasting window, Access Providers could be encouraged to reserve space for their future needs without having the sufficient level of specificity for the forecast to be considered

⁸⁴ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 21, para 50.

⁸⁵ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p3.

⁸⁶ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, Main Submission, 22 August 2008, pp 19-20, para 72.

⁸⁷ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 8, para 5.6.

⁸⁸ *ibid*, p 11, para 6.12.

⁸⁹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, pp 22-23, para 53.

⁹⁰ Mobile Co-location Conference Transcript, 10 October 2008, p 81, lines 14-20.

“current and reasonable”. The Commission considers that this level of specificity is only likely to be achieved once an Access Provider has business case approval for a given deployment.

204. The Commission considers that a two-to-three year timeframe provides a useful proxy for the point in time at which an Access Provider has a sufficient degree of certainty around its forecasts. The Commission does, however, acknowledge that widespread deployment of a new technology (for example, LTE), is likely to take longer than expansion of an existing network.
205. Furthermore, as outlined in the draft STD, the Commission considers that the forecast horizon needs to strike the appropriate balance between allowing an Access Provider to reasonably reserve space for its future deployment plans, and the benefit from allowing a new entrant to co-locate where feasible. The Commission considers that a forecasting window of two-to-three years strikes this balance appropriately, and is in the long-term benefit of end-users.
206. Accordingly, the Commission has determined that an Access Provider’s forecast shall not extend for more than two years where it relates to network expansion in respect of services currently provided by the Access Provider, or three years where it relates to the future deployment of a new technology. Clause 9.1.3 of the Mobile Co-location Operations Manual has been updated to reflect this.

Use of reserved space

207. In the draft STD the Commission attempted to strike a balance between an Access Provider’s need to reserve space for its reasonable forecast requirements and making the most efficient use of Relevant Facilities in the short term. The Commission’s preliminary view was that an Access Seeker should be able to locate its transmission and reception equipment on or with an Access Provider’s Relevant Facilities for the period of time until the Access Provider is in a position to install the equipment in the space that is the subject of its forecast.
208. Telecom submitted that the practical difficulties associated with the proposal would ultimately make it difficult to administer. Telecom’s concerns centred around potential difficulties in removing Access Seeker equipment from a site when the Access Provider wishes to deploy its equipment in line with its forecast.⁹¹
209. This concern was shared by Kordia, who submitted that by creating a squatters’ right, in practice it will be difficult for the Access Provider to remove the Access Seeker when the Access Provider is ready to use its own Relevant Facilities as forecast.⁹²
210. Vodafone contended that a two year period would present significant risks for Access Seekers looking to temporarily occupy the Relevant Facilities because,

⁹¹ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 22, paras 80-82.

⁹² Kordia, *Submission to the Commerce Commission on the Draft Standard Terms Determination for the Specified Service Co-location on Cellular Mobile Transmission Sites*, 22 August 2008, p 5, para 6.3.

given the build period and the need to obtain consents, an Access Seeker may be required to vacate the Relevant Facilities even before it has begun to build.⁹³

211. Vodafone submitted, however, that use of reserved space may be workable under a five year forecasting period. Although Vodafone also agreed that the Access Seeker may be reluctant to relinquish the site under these circumstances, Vodafone put forward the following proposal:

...in the event that an Access Seeker wishes to co-locate on a site by using those rights which the Access Provider had forecasted for itself, the Access Seeker can request the Access Provider to advise its anticipated reasonable and actual costs that it would incur if, in the future, it sought to deploy its technology, and was not able to do so due to the Access Seeker's presence... The Access Seeker is then able to make an informed decision as to whether it wishes to proceed with the co-location on that basis, or choose some other option (including undertaking the necessary works at that stage rather than waiting until the end of the forecast timeframe).

Then, assuming the Access Seeker elects to proceed with co-locating at the site, the Access Provider notifies the Access Seeker when it is ready to execute its forecast requirements, and the Access Seeker confirms to the Access Provider which option it chooses: either to relate its equipment, vacate the site, or reimburse the Access Provider for those costs which the Access Provider has already notified.⁹⁴

212. NZ Communications submitted that it would be supportive of such an arrangement, provided that the two year forecast window is retained.⁹⁵ Telecom, on the other hand, submitted that Vodafone's proposition does not resolve fundamental issues associated with camping, and creates further issues, namely:

- assessment of costs: it would be impossible for an Access Provider to accurately assess the future costs related to camping; and
- impact on third parties: An Access Provider has the obligation to obtain requisite consents and landlord approvals. It would be impossible to assess whether these could be obtained in the future.⁹⁶

213. The Commission considers that the ability for an Access Seeker to make use of an Access Provider's reserved space will allow an Access Seeker to provide service to its customer base in the short-term, while providing an opportunity for a longer-term solution to be developed, thereby promoting the efficient use of network infrastructure. Accordingly, the Commission has retained the used of reserved space provisions from the draft STD.

214. The Commission acknowledges the concerns raised by Vodafone about the need for Access Seekers to be made aware of the anticipated and reasonable costs of camping on an Access Provider's Relevant Facilities. However, as Mobile Co-location is a specified service the Commission has limited options available to it

⁹³ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, pp 24-25.

⁹⁴ *ibid* p 25.

⁹⁵ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 13, para 7.4.

⁹⁶ Telecom, *Cross-Submission on the draft Commerce Commission Mobile Co-location STD*, 8 September 2008, p 19.

to deal with the identification and apportionment of cost between an Access Seeker and an Access Provider.

215. Issues of costs and prices have been catered for within the STD to the extent that the Commission considers appropriate. The Commission has reinserted the terms that deal with agreement on charges in the Mobile Co-location General Terms and the Access Provider and the Access Seeker must agree a basis for any relevant charge that may be required for the provision of the service. To the extent that there are any issues of cost recovery to be decided between the Access Seeker and the Access Provider, those issues will need to be resolved in accordance with those reinserted terms.
216. Moreover, the Commission considers that the issues raised by Kordia and Telecom regarding squatters rights are also appropriately dealt with in STD. The process for managing an Access Seeker's exit from a site are clear, including an Access Provider obligation to give adequate notice to the Access Seeker as per the Operations Manual so as to set clear expectations.
217. The Commission further notes the general obligation of good faith in the STD, and the dispute resolution processes that aim to minimise any unnecessary disputes. Furthermore, under section 156N(b) of the Act, an STD is an enforceable matter and if an Access Seeker fails to relinquish use of the site, an Access Provider may make a written complaint to the Commission alleging a breach of the STD. The Commission must then decide what action, if any, to take, including whether to take action in the High Court. The Access Provider also has the option to take action in the High Court under section 156P(1) of the Act.
218. The Commission also notes that on the application of the Commission, the High Court may, in addition to any other remedies, order a pecuniary penalty if there has been a breach of the STD under section 156Q of the Act.

Access Provider Forecasts and the queue

219. In the draft STD, the Commission amended the forecasting requirements so that the Access Provider places itself in the queue in relation to its current and reasonable forecast requirements for capacity.
220. Vodafone submitted that it does not agree that the Access Provider should be part of the queue, because the purpose of the queue is to manage the relative positions of Access Seekers. However, Vodafone submitted that the Access Provider's Forecasts should still be subject to the queuing principles of "first come first served" and "use it or lose it". Vodafone provided alternative drafting to this effect.⁹⁷ This view was also supported by Telecom in its submission.⁹⁸
221. Given that the purpose of the queue is to manage the relative positions of Access Seekers, the Commission agrees that it is inappropriate for Access Provider's

⁹⁷ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 26.

⁹⁸ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 11.

Forecasts to be included. The Commission notes, however, that under Vodafone's alternative drafting, Access Provider's Forecasts are effectively treated as though they are part of the queue.

222. The Commission considers that adopting Vodafone's proposed drafting will achieve the purpose of helping to ensure that Access Provider forecasting is not used in an anti-competitive manner, and therefore, has adopted the wording proposed by Vodafone in the final STD.

Use of Access Provider Forecasts for anti-competitive purposes

223. In the draft STD, the Commission noted that the Access Seeker is not placed in the queue until a Full Site Application is made and, therefore, that there was the potential for an Access Provider to forecast additional or new current and reasonable forecast requirements for capacity in an attempt to restrict access to its Relevant Facilities (prior to the Access Seeker reaching the Full site Application stage). To address this issue, the Commission's preliminary view was that, where an Access Seeker submits a Site Data Pack Application in relation to a Relevant Facility, the Access Provider should not be allowed to forecast additional or new current and reasonable forecast requirements for capacity on that Relevant Facility for a period of 40 Working Days.
224. Vodafone submitted that, under this proposal, in some circumstances, such as where an Access Provider receives a Site Data Pack Application soon after the monthly update of the Access Provider's Forecast, the Access Provider may not be able to update the Access Provider's Forecast for a period of almost three months. In contrast, Vodafone noted that the Access Seeker has a period of 10 Working Days in which to make an Initial Site Application or a Full Site Application once it has received the Site Data Pack. Vodafone submitted that the two periods should be aligned.⁹⁹
225. The Commission agrees with Vodafone's submission and has updated clause 9.1.8 of the Mobile Co-location Operations Manual accordingly.

Forecast expiry

226. Telecom submitted that the Access Provider forecast provisions in the draft STD did not deal with the issue of when a forecast expires. Telecom proposed that a similar process should be adopted to that used by local authorities when dealing with RMA applications. This process would mean that the Access Provider will be deemed to have deployed a forecast after five years where:
- the build has been completed prior to that date; or
 - "substantial progress or effort has been, and continues to be, made towards giving effect to the forecast".¹⁰⁰

⁹⁹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 23.

¹⁰⁰ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 21, para 79.

227. This proposal was supported by NZ Communications on the basis that current and reasonable forecasts are those which extend for a period of no more than two years.¹⁰¹
228. The Commission's acknowledges Telecom's proposal, but considers that it is important that references in the STD to "substantial progress or effort" are not able to be used to extend the expiry date beyond a reasonable timeframe, thereby frustrating Access Seeker access to the Relevant Facilities. The Commission has accordingly included an amended version of Telecom's proposal in the STD providing that an Access Provider is only entitled to a six month extension where substantial progress has been made.

Site Alterations

229. In the draft STD, the Commission's view was that Antenna Minimisation, if used appropriately, is one of a number of important tools that help ensure that the Mobile Co-location Service is consistent with the access principles in the Act (and the limits on those access principles) and for the long-term benefit of end-users.
230. The Commission's preliminary view was that, if necessary in order to achieve a position on the Mast that will give the Access Seeker like-for-like coverage, the Access Seeker can seek to employ any of the following solutions (subject to the terms and conditions in the Mobile Co-location Terms, including management of interference under the Interference Management and Design document):
- rearrangement of the Access Provider's existing Antenna;
 - the use of Antenna Minimisation technology; and/or
 - Mast replacement, extension or revision.
231. In its submission, Telecom expressed a view that Access Providers should not be forced to rearrange their existing Antenna or use Antenna Minimisation technology under the regulated service, but rather, Mast replacement, extension or revision should be the preferred option for making space available for Access Seekers to co-locate.¹⁰² Telecom submitted that Mast replacement, extension or revision can provide a cost-effective solution, without the interference concerns or performance impacts that result from Antenna Minimisation.
232. In support of its view that Antenna Minimisation should be excluded from the regulated service, Telecom stated that Antenna Minimisation can reduce a network operator's ability to optimise its network, resulting in inefficiencies that were not present when the network was rolled out. Furthermore, Telecom provided a number of additional reasons, including that:

¹⁰¹ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 11, para 6.14.

¹⁰² Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 17, para 62.

- in the majority of cases, Antenna Minimisation will not be the best or most cost-effective solution;
 - Antenna Minimisation only provides a short-term solution and does not resolve the long-term issues, because co-location though Antenna Minimisation will be at the expense of the next party that wants to co-locate;
 - Access Providers' property rights, and their rights to operate their business, should not be unnecessarily restricted;
 - an Access Seeker would be able to degrade an Access Provider's service by targeting their sites for co-location; and
 - mandating Antenna Minimisation would be a "world first".¹⁰³
233. Similarly, Vodafone expressed an objection to the inclusion of requirements in the STD that would enable an Access Seeker to "require" an Access Provider to alter its network sites against its own wishes, and questioned whether an Access Provider can be forced to make site alterations under the Act.¹⁰⁴
234. Vodafone also submitted that Antenna Minimisation prevents the independent change of antenna configurations (e.g., azimuths and mechanical downtilt), which is essential to the optimisation of different network systems (e.g., GSM and UMTS) on the same cell site. However, rather than excluding Antenna Minimisation and antenna rearrangement from the regulated service (as proposed by Telecom), Vodafone submitted that, if site alterations are necessary, they should be imposed on the Access Provider in the following order (based on the relative degree of disruption to the Access Provider):
- (i) mast replacement, extension or revision;
 - (ii) if mast replacement, extension or revision is not an option, then rearrangement of the Access Provider's existing antenna on the mast; and
 - (iii) if neither of these are possible, then antenna minimisation.¹⁰⁵
235. In response to Vodafone's submission, NZ Communications stated that it does not object to any provision which would provide that rearrangement of the Access Provider's existing antenna should be the first resort before Antenna Minimisation is undertaken (if that rearrangement results in the Access Seeker being able to co-locate in a reasonable way).¹⁰⁶ However, NZ Communications contended that Antenna Minimisation is used by Vodafone and Telecom in situations where they are RMA constrained, and that Antenna Minimisation

¹⁰³ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, pp 17-18.

¹⁰⁴ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 28, paras 69-70.

¹⁰⁵ *ibid* pp 30-31.

¹⁰⁶ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 14, para 7.7.

should be available to the Access Seeker where it will assist in mobile co-location.¹⁰⁷

236. Vodafone and Telecom both acknowledged at the Mobile Co-location Conference that, under certain circumstances, they use Antenna Minimisation.¹⁰⁸
237. Woosh submitted that Antenna Minimisation might be appropriate on a limited number of Relevant Facilities, but should not form the basis of a network build philosophy.¹⁰⁹
238. The Commission notes that access principle 3 requires that Access Providers provide the Mobile Co-location Service on terms and conditions (excluding price) that are consistent with those terms and conditions on which each of those Access Providers provides the service to itself. Given that Access Providers of the Mobile Co-location Service have acknowledged that they consider the use of Antenna Minimisation to free up space when expanding their own networks (as well as Mast alterations and Antenna rearrangement), the Commission considers that Access Seekers of the service should have the same opportunity (subject to the limits on access principles).
239. Accordingly, the Commission has determined that an Access Seeker may propose any of Mast alterations, Antenna rearrangement or Antenna Minimisation that it considers to be reasonable and necessary, and the Access Provider will be bound to accept that proposal provided that it is consistent with the other terms and conditions of the Mobile Co-location Terms (for example, any interference management issues can be dealt with under the Mobile Co-location Interference Management and Design document).

Common format site database

240. The Mobile Co-location Operations Manual includes the requirement for each Access Provider of the Mobile Co-location Service to maintain a database containing information on its Relevant Facilities (referred to as the Common Format Site Database). The purpose of the Common Format Site Database is to enable Access Seekers to identify the Relevant Facilities that may be suitable for the Access Seeker to apply to the Access Provider for supply of the Mobile Co-location Service. Each Access Provider of the service is required to maintain its own Common Format Site Database.
241. The Commission is of the view that a Common Format Site Database is vital to the successful operation of the Mobile Co-location Service. The Commission considers that the ability for an Access Seeker to have visibility regarding an Access Provider's Relevant Facilities will enable an Access Seeker to identify those Relevant Facilities which are most suited to its needs.

¹⁰⁷ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 3, para A8.

¹⁰⁸ Mobile Co-location Conference Transcript, 10 October 2008, p 54.

¹⁰⁹ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 4.

Relevant Facilities to be included in the Common Format Site Database

242. In its STP, Vodafone proposed that an Access Provider's Common Format Site Database will contain information only on those Relevant Facilities that are reasonably and/or practicably capable of supporting the Mobile Co-location Service.¹¹⁰
243. The Commission's preliminary view was that the Common Format Site Database should contain information on *all* of an Access Provider's Relevant Facilities, rather than only those that are reasonably and/or practicably capable of supporting the Mobile Co-location Service. This was on the basis that the decision as to whether a Relevant Facility is "reasonably and/or practicably capable of supporting the Mobile Co-location Service" may be subjective and, therefore, should not be left solely to the Access Provider.
244. Vodafone agreed that the Relevant Facilities entered into the database should not be subjectively selected by the Access Provider, and that this was not the intention of the principle agreed by the TCF. However, the practical reality is that some particular types of Relevant Facilities cannot support the Mobile Co-location Service (i.e. they are not physically capable of supporting co-location), and therefore should not be in the database). Vodafone cited the example of a roadside pole, which may be considered to be Mast, but cannot physically support Mobile Co-location. Vodafone also expressed a view that sites such as those on building rooftops are not a Relevant Facility.¹¹¹
245. Vodafone suggested that the drafting of the Common Format Site Database section be tightened to remove any potential for subjectivity, and that a specific and limited list of the types of Relevant Facilities that are deemed not to be reasonably and/or practicably capable of supporting the Mobile Co-location service should be specified. This list, as proposed by Vodafone, included:
- structures commonly referred to as "roadside" or "lamppost" poles (generally located within road reserves);
 - signs; and
 - artificial trees.¹¹²
246. Similarly, Telecom suggested reverting to the wording proposed by Vodafone in its STP, suggesting that Access Seekers would receive little benefit from the inclusion of many of the additional Relevant Facilities in the database.¹¹³
247. Woosh submitted that it believed that the Common Format Site Database would be limited to masts and towers, and would exclude roof-tops, buildings, and similar sites, that are managed or leased by the Access Provider. Woosh

¹¹⁰ Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, Operations Manual clause 27.1.1.

¹¹¹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 37, paras 104-105.

¹¹² *ibid*, Mobile Co-location Operations Manual, p 59, clause 31.3.2.

¹¹³ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Main Submission, p 26, para 106.

submitted that this is because the general roof-top lease precludes onward lease to a third party, and would therefore, usually be considered to be co-siting.¹¹⁴

248. As noted in paragraphs 68 to 71 above, the Commission considers that a building or rooftop will be classified as a Mast if it is used specifically (though not necessarily exclusively) to elevate mobile network equipment, so long as that building or rooftop is subject to the Access Provider's right of Relevant Occupation.
249. Accordingly, the Commission has determined that buildings and rooftops are required to be included in the Common Format Site Database. As noted in paragraph 406 below, the Access Provider will be allowed additional time to include buildings and rooftops in the Common Format Site Database.
250. The Commission does, however, acknowledge that there is likely to be little benefit to Access Seekers from the inclusion of sites that are not reasonably and/or practicably capable of supporting the Mobile Co-location Service in the Common Format Site Database. Therefore, the Commission has included in the STD the list of excluded Relevant Facilities proposed by Vodafone (as referred to in paragraph 245 above). The Commission notes that while certain Relevant Facilities are exempt from the Common Format Site Database, those lampposts, signs and artificial trees are still Relevant Facilities for the purposes of this STD.

Accuracy of information

251. The Commission's view is that the information in the Common Format Site Database is essential for enabling Access Seekers to place Applications for Relevant Facilities. Therefore, in the draft STD the Commission considered that Access Providers should be required to use their best endeavours to ensure that the information contained in the Common Format Site Database is as accurate as possible.
252. Vodafone submitted that care must be taken to avoid attempting to turn the Common Format Site Database into something that it was not designed to be following its development with the TCF. Specifically, Vodafone submitted that the Common Format Site Database is not designed to be a substitute for the Application process itself, and therefore, a best endeavours standard is too high.¹¹⁵
253. Similarly, Telecom submitted that:
 - the intention in the TCF document was that the guaranteed accuracy of information would apply to the Site Data Packs (not the Common Format Site Database); and
 - the best endeavours obligation increases the requirement of accuracy and therefore, increases the cost of maintaining the database substantially.

¹¹⁴ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 2.

¹¹⁵ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 44.

254. Telecom submitted that the term “reasonable endeavours” best reflects the purpose of the Common Format Site Database, and should be reinstated.¹¹⁶
255. The Commission agrees with Vodafone and Telecom that the database should not be a substitute for the Application process and that it is appropriate for guaranteed accuracy to apply to Site Data Packs rather than the Common Format Site Database. However, the Commission considers that the Access Seeker needs to be able to rely on the accuracy of the information contained in the Common Format Site Database in order to identify Relevant Facilities that are suitable for the Mobile Co-location Service.
256. The Commission has determined that a “best endeavours” standard is appropriate for the Common Format Site Database. The Commission notes that an Access Provider is only required to update its Common Format Site Database on a monthly basis and, therefore, considers that this requirement will not be unduly onerous on Access Providers.

Information to be included in the database

257. In the draft STD, the Commission made a number of amendments to the list of information required to be included in the Access Provider’s Common Format Site Database. This included the addition of information regarding:
- the existing Antenna configuration;
 - the height of the Mast (to complement the height of the Antenna, which was already a requirement under Vodafone’s STP); and
 - spare Building capacity (i.e. room for additional equipment).
258. Vodafone submitted that:
- it is unclear how the “Antenna configuration” is to be represented in the Common Format Site Database, or whether it is even possible to represent a “configuration” in the database;
 - the inclusion of Mast height may create confusion and, from a radio planning perspective, it is the height of Antenna that is material (rather than the height of the structure to which it is attached); and
 - the inclusion of spare Building capacity deviates from the TCF-agreed principles (and Vodafone does not currently keep a record of this information).¹¹⁷
259. Vodafone’s submissions regarding Antenna configuration and spare building capacity were supported by Telecom. The Commission agrees with submissions that it is unclear how the Antenna configuration would be represented in the

¹¹⁶ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 31.

¹¹⁷ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, pp 45-46.

Common Format Site Database under the terms of the draft STD. In addition, although the Commission considers that there would be value in including spare building capacity in the database, the Commission acknowledges that this deviates from the TCF-agreed requirements, and that some Access Providers may not currently keep a record of this information. Therefore, the Commission has removed Antenna configuration and spare building capacity from the list of information to be included in each Access Provider's Common Format Site Database.

260. The Commission, however, considers that there is value in including both the Mast height and the height of the highest Antenna in the Common Format Site Database. Accordingly, the Commission has retained this requirement as per the draft STD.
261. In addition, Telecom submitted that expressing spare Mast structural capacity as a percentage (in accordance with clause 31.3.1(k) of the draft STD) does not indicate to the Access Seeker exactly how much room is available on the Mast, and that a measure providing the difference between the current deflection angle and a maximum engineering limit would provide the Access Seeker with more useful information.¹¹⁸
262. In response, Vodafone submitted that its structural engineers have not encountered difficulties in expressing spare capacity as a percentage figure, and that this is a reasonable, simple, and consistent way of being able to compare values across a wide range of Relevant Facilities.¹¹⁹
263. Although the Commission agrees with Telecom that the current deflection angle and maximum engineering limit may prove more useful for Access Seekers, the Commission considers that the Common Format Site Database should be simple, and not unduly onerous. The Commission also notes that expressing spare Mast structural capacity as a percentage is consistent with both Vodafone's STP and the draft STD, and does not see a compelling need to alter this requirement in the final STD.

MED database

264. In the interests of transparency, in the draft STD the Commission required all Relevant Facilities to be included in the Access Provider's Common Format Site Database. At the Mobile Co-location Conference, Telecom stated that:

It's important to note that all transmitting facilities are recorded in the MED database, so any of those other sites, whether they be building, traffic lights, clock towers, whatever, will be in a publicly available forum.¹²⁰

265. As noted above, the Commission has excluded roadside and lamppost poles, signs and artificial trees from the Common Format Site Database on the basis that these structures are unlikely to be reasonably and/or practicably capable of

¹¹⁸ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 32.

¹¹⁹ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, Table of cross-submissions, pp 37-38.

¹²⁰ Mobile Co-location Conference Transcript, 10 October 2008, p 118, lines 22-25.

supporting the Mobile Co-location Service. The Commission's view remains, however, that an Access Seeker should have visibility regarding all of an Access Provider's Relevant Facilities. The Commission considers that an Access Seeker should have the ability to use the MED Spectrum Search Lite Database (Prism.mdb)¹²¹ to identify any Relevant Facilities that the Access Provider has excluded from its Common Format Site Database.

266. Therefore, the Commission has included an additional field in the Common Format Site Database, requiring the Access Provider to provide a reference to the *locationid* field from the *location* table in the MED *Prism* database the corresponds to the appropriate Relevant Facility. The Commission considers that, under this scenario, it is possible to query the MED database to ascertain all the *locationid* (Relevant Facilities) that belong to a mobile operator that are not included in the Common Format Site Database.

Database format

267. Clause 31.1.1 of the Operations Manual in the draft STD required that the Common Format Site Database be in the form of an excel spreadsheet. The Commission included this requirement in the draft STD to ensure that each Access Provider's Common Format Site Database, would be in a *common format*.
268. The Commission considered that this was necessary in order to ensure that the information contained in each Common Format Site Database is able to be easily merged, thus achieving the purpose of ensuring that Access Seekers are able to identify those Relevant Facilities that are suitable for co-location.
269. Telecom submitted that this is not practical for various reasons, including that excel does not have the control mechanisms of other database formats. Telecom submitted that excel may be used as an interim means of presenting the data, but should not be the only compulsory means locked down by the STD going forward.¹²²
270. The Commission considers that while it should not unduly interfere with an Access Provider's choice of software for its internal systems, there is clearly benefit in having a Common Format Site Database that can be easily used by all Access Seekers. The Commission has determined, therefore, that the Common Format Site Database must be in Microsoft Excel format. The Commission notes that an Access Provider will be able to prepare and maintain its database using other database software, provided that the such software is capable of exporting the database to Microsoft Excel for the purposes of meeting the requirements of the Mobile Co-location STD.
271. Furthermore, in order to ensure that the information contained in each Common Format Site Database is in a form that is of most use to Access Seekers, the Commission has included a list of explanatory notes that the Access Provider must following when populating each of the fields in its database. These

¹²¹ <http://www.rsm.govt.nz/cms/resource-library/spectrum-search-lite>

¹²² Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on Operations Manual, p 30.

explanatory notes are included in Appendix S of the Mobile Co-location Operations Manual.

Other Operations Manual issues

Access Seeker forecasting

272. The Commission acknowledges the importance of accurate Access Seeker forecasting in ensuring efficient and effective provision of the Mobile Co-location Service, and the important role it plays in enabling Access Providers to allocate resources in advance of actual Applications being made. Therefore, in the draft STD the Commission included an overforecast/underforecast regime that is consistent with previous STDs released by the Commission.
273. This process required forecasting accuracy to be ascertained by the sum of the volume of several different types of Applications (Interference Desktop Studies, Site Data Pack Applications, Initial Site Applications and Full Site Applications) being compared to the sum of those applications forecast, across all Access Seekers.
274. Vodafone submitted that it is possible that, on an overall volume basis, underforecasting for a particular type of Application could effectively be cancelled out by overforecasting for a different type of Application. Furthermore, Vodafone submitted that different resources are allocated to different types of Applications and, therefore, it is appropriate that forecasting accuracy applies to individual types of Applications.¹²³ Telecom supported Vodafone's submission.¹²⁴
275. The Commission agrees, and has amended clause 8.3 of the Mobile Co-location Operations Manual accordingly.

Region vs Territorial Authority vs District

276. In Vodafone's STP, the term Region was defined as:
- means the regions of AKL (north of Turangi, North Island), WLG (south of Turangi, North Island), or CHC (South Island), for the purposes of the Mobile Co-location Forecasts and the Common Format Site Database.
277. As implied by this definition, Access Seeker forecasting was required to be performed by Region, and the Access Provider's Common Format Site Database was required to state the Region in which each of its Relevant Facilities are located.
278. In the draft STD, the Commission amended the Common Format Site Database provisions to require the Access Provider to state the Territorial Authority in which each of its Relevant Facilities are located (rather than the Region).

¹²³ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, pp 21-22.

¹²⁴ Telecom, *Cross-Submission on the draft Commerce Commission Mobile Co-location STD*, 8 September 2008, Table of cross-submissions, p 17.

Access Seeker forecasting, however, was still to be performed on a per Region basis.

279. Telecom submitted that when processing Applications, the Access Provider utilises specialist resources which are not aligned with the three regions (as per Vodafone's definition of Region), but rather, are more closely arranged per Territorial Authority. Therefore, Telecom proposed that the reference to Region be replaced with Territorial Authority. Furthermore, Telecom stated that forecasting by Territorial Authority is not onerous on Access Seekers since they will already know what region Territorial Authorities relate to as they need to have this information for RMA purposes.¹²⁵
280. While this view was supported by Vodafone in principle, Vodafone noted that a Territorial Authority is in fact an entity. Vodafone submitted that the Commission's intention appears to be the area comprised within a certain Territorial Authority's mandate. Therefore, Vodafone submitted that the term District, as it is defined in the Local Government Act 2002, should be used in place of Territorial Authority.¹²⁶
281. The Commission agrees with these submissions and, has determined that Access Seeker forecasts and the Common Format Site Database are to refer to Relevant Facilities by District.

Standard site types

282. NZ Communications reiterated its previous submissions that standard site types must be agreed before the STD is implemented.¹²⁷ The Commission's view remains that, given that there are multiple Access Provider of the Mobile Co-location Service, each of whom have a number of common site types, it would be impracticable to specify certain standard site types in the STD.
283. Telecom, on the other hand, submitted that, in light of the adoption of a process for Multi-Site Applications and requirements for Agreed Standard Solutions and Disagreed Solutions, the concept of Standard Site Types in the Operations Manual is redundant.¹²⁸
284. In response, Vodafone submitted that a process for establishing standard site type solutions is still worthwhile because it will allow for a more streamlined process for the Access Seeker's Applications for the Mobile Co-location Service (and can also aid in the submission and processing of Multi-Site Applications).¹²⁹

¹²⁵ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 5.

¹²⁶ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 51.

¹²⁷ NZ Communications, *Submissions to the Commerce Commission in relation to the Draft STD for the Co-location on Cellular Mobile Transmission Sites Service*, 22 August 2008, p 9.

¹²⁸ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on the Operations Manual, p 32.

¹²⁹ Vodafone, *Cross-submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 8 September 2008, Table of cross-submissions, p 32.

285. The Commission agrees with Vodafone's submission, and has retained the process for determining Standard Site Types as per the draft STD.
286. Furthermore, the Commission notes that:
- the standard site type solution process;
 - the ability for Access Seekers to make Multi-Site Applications for 10 or more Relevant Facilities; and
 - the Service Level capacity limit for each Access Provider of 10 Applications per Access Seeker per five Working Day period,
- will all assist in facilitating rapid co-location of cellular mobile telephone network transmission and reception equipment.

Utility Services

287. Under Vodafone's STP, the Access Provider was able to choose, at its sole discretion, which utility services are made available for the Mobile Co-location Service at a particular Site. In the draft STD the Commission noted that utility services are included as part as the description of service in the Act, and therefore, considered that the Access Seeker should be able to choose the utility services in relation to the Relevant Facilities, subject to consideration of any factors stemming from the limits on access principles that might apply.
288. Vodafone submitted that the Access Seeker should not have the sole discretion to determine which utility services at the Relevant Facilities form the utility services for the Mobile Co-location Service. Vodafone noted that the Access Provider will be required to consider the interests of numerous third parties (including other Access Seekers) when determining which utility services are available.¹³⁰
289. The Commission agrees with Vodafone's submission and, therefore, considers that the choice of utility services should not be determined solely by the Access Seeker. Rather, the Commission has determined that the Access Seeker will propose which utility services it requests to utilise in relation to the Relevant Facilities, and the Access Provider may determine that some of those utility services are not available at the Relevant Facilities.

Operations Manual Appendices

290. The Commission has made a number of minor updates to the appendices to ensure consistency with the remainder of the Mobile Co-location Operations Manual.

¹³⁰ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, pp 47-48.

ACCESS TERMS

291. The Mobile Co-location Access Terms set out the specific rights and obligations of Access Providers and Access Seekers for access to and co-location on or with an Access Provider's Relevant Facilities. The Mobile Co-location Access Terms is a schedule to the Mobile Co-location General Terms.

Definition of Landlord

292. In the draft STD the Commission removed from the definition of Landlord the reference to other persons whose consent may be required to carry on the 'Permitted Use' (which may include a head lessee or head licensee in the case of a sub-lease or sub-license, or a mortgage). This has the effect of limiting the definition of Landlord to the grantor of the relevant right of Relevant Occupation.
293. Vodafone submitted that the grantor is the next party up in the "tenancy chain", but sometimes an Access Provider will need the consent of a party who is even higher up in the tenancy chain, such as the head lessee. Furthermore, Vodafone submitted that sometimes the Access Provider needs the consent of not only the party granting the lease at the site, but also a different party who has granted access to the site (for example, licensors for an area separate to the Site, such as the access track). Therefore, Vodafone concluded that these persons cannot be ignored, if their consent is required.¹³¹
294. The Commission considers that issues relating to third party permissions or consents are adequately dealt with in other parts of the STD, including the Schedule of Site-Specific Conditions. The Mobile Co-location Access Terms relate to a specific aspect of the Mobile Co-location STD – access to a Site – and the Commission considers that a landlord in the sense of a lessor or licensor is the only relevant third party that requires special consideration under the Mobile Co-location Access Terms.

¹³¹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 53.

INTERFERENCE MANAGEMENT AND DESIGN

295. Co-location on or with Relevant Facilities can give rise to significant benefits to mobile network operators in terms of increasing the efficiency, and lowering the costs of providing cellular mobile services to end-users. However, although co-location may create potential for improved competition, it can also lead to degradation in the performance of existing mobile networks. This is because the location of mobile network transmission and reception equipment in close proximity to equipment of another network is likely to generate radio frequency interference. Therefore, careful management of radio frequency interference is vital in ensuring that the Mobile Co-location Service is able to deliver long-term benefits to end-users of telecommunications services in New Zealand.
296. The Mobile Co-location Interference Management and Design document sets out the interference management and design principles that Access Seekers and Access Providers must follow in relation to the Mobile Co-location Service. In particular, this document sets the level of unacceptable performance degradation that is allowed to result from supply of the Mobile Co-location Service.
297. In setting the terms of the Mobile Co-location Interference Management and Design document, the Commission has considered the purpose statement set out in section 18 of the Act.

Unacceptable Performance Degradation

298. In its STP, Vodafone proposed an upper limit on radio frequency interference, which it termed ‘unacceptable performance degradation. Vodafone submitted that the definition of ‘unacceptable performance degradation’ needs to set careful limits to ensure that degradation is kept to a minimum. Accordingly, Vodafone proposed that:¹³²
- “Unacceptable Performance Degradation” in this Interference Management and Design document means any one or more of the following:
- (a) Isolation of less than 30 dB between the Antenna port of the Access Seeker’s transmitting equipment and the Antenna port of the Access Provider’s receiving equipment;
 - (b) a total level of loss from the Access Provider’s Link Budget of more than 0.5 dB in either the uplink budget or the downlink budget;
 - (c) Performance Degradation which affects the quality of Telecommunications Services in more than a minor way.
299. In response to Vodafone’s proposal, Kordia suggested that 0.5dB loss in the link budget may be more conservative than industry practice for constant interference to mobile cellular systems. Furthermore, Kordia referenced an ITU report in

¹³² Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, Schedule 5 - Interference Management And Design, clause 6.2.1.

order to support its view that a link budget reduction of 1.0dB is appropriate for co-located base stations.¹³³

300. In the draft STD, the Commission agreed with Kordia that a link budget reduction of 1.0dB is an appropriate level of unacceptable performance degradation in relation to the Mobile Co-location Service. In reaching this view the Commission considered that the pro-competitive and efficiency benefits resulting from co-location are likely to outweigh the degradation to existing services resulting from an interference threshold of 1.0 dB.

301. Furthermore, the Commission's view was that:

- degradation which affects the quality of telecommunications services "in more than a minor way" is not easily quantifiable; and
- that additional provisions were required in order to minimise possible adverse impacts on public safety from degradation of the performance of emergency telecommunications services.

302. Accordingly, the Commission defined "unacceptable performance degradation" in the draft STD as follows:

- Isolation of less than 30dB between the Antenna port of the Access Seeker's transmitting equipment and the Antenna port of the Access Provider's receiving equipment or any Existing Co-locator's transmitting or receiving equipment;
- a total level of loss from the Access Provider's or Existing Co-locator's Link Budget of more than 1.0dB in either the uplink budget or the downlink budget;
- a total level of loss of more than 0.2dB from either the uplink budget or the downlink budget of any Antenna solely dedicated to the provision of Emergency Services; or
- an incremental 5% increase in Outages in Telecommunications Services to End Users directly attributable to the incremental emissions of the Access Seeker from the Relevant Facility. Any increase in Outages is to be assessed:
 - i. prior to Stage 1 of the Project Closure Checklist under section 21 of the Mobile Co-location Operations Manual; and
 - ii. over a period with a reasonable number of calls and a mix of call types representative of the site's traffic.

Long term benefit of end-users

303. The Commission acknowledges that co-location is likely to lead to some level of performance degradation to an Access Provider's existing services, and a resulting loss of network performance. However, the Commission believes that the benefits associated with co-location are likely to outweigh any degradation to existing services, provided that interference issues are carefully managed.

304. In the draft STD the Commission's view was that 1.0dB degradation in the Access Provider's link budget struck the appropriate balance between the

¹³³ Kordia, *Consultation on Vodafone's Standard Terms Proposal for Mobile Co-location*, 26 May 2008, p 27.

competitive benefits resulting from co-location and degradation to existing services.

305. The Commission noted that although there is likely to be a decrease in productive efficiency¹³⁴ as a result of the reduced performance of the Access Provider's network, and potentially the need for additional investment to fund infill sites, there is also likely to be an offsetting gain in productive efficiency as co-location could eliminate the inefficient duplication of Relevant Facilities.
306. In addition to this offsetting productive efficiency gain from co-location, the Commission's view was that there is likely to be a positive effect on efficient entry, leading to increased competition in the downstream market for retail mobile services.
307. The Commission has in the draft STD and in previous investigations¹³⁵ noted that the increase in competition in the retail market is likely to generate a decrease in price towards cost which will be in the long-term interest of end-users.
308. The Commission considered that any decrease in productive efficiency as a result of 1.0dB degradation would likely be offset by gains in allocative efficiency due to decreasing prices that result from competition. The Commission depicted the efficiency trade-off in a partial equilibrium diagram.¹³⁶
309. The Commission also suggested that in addition to the static allocative and productive efficiency implications of co-location, there is also likely to be an increase in dynamic efficiency as a result of increased competition through co-location.¹³⁷ That is, increased competition will place more pressure on mobile network operators to invest in new technologies that minimise costs and allow for greater innovation. For example, where an entrant through co-location is able to deploy the most modern mobile technology, such as 3G and High Speed Packet Access (HSPA) technologies, this is likely to elicit a competitive response from existing providers.
310. The Commission supported this view by citing the example of the Australian mobile market, where co-location arrangements were entered into in August 2004 by Optus and Vodafone and Telstra and Hutchison '3', as a means to defray the overall costs associated with the 3G network build-out.¹³⁸ By 2007, all network operators in Australia enabled their 3G networks with the High Speed Downlink Packet Access (HSDPA) standard.

¹³⁴ Productive efficiency occurs when a firm combines its inputs or resources in such a way as to produce a given level of output of goods and services at a minimum cost to society.

¹³⁵ Commerce Commission, *Schedule 3 Investigation into Amending the Co-location Service on Cellular Mobile Telephone Transmission Sites*, 14 December 2007, p 12, para 69.

¹³⁶ Commerce Commission, *Draft standard terms determination for the specified service co-location on cellular mobile transmission sites*, 25 July 2008, p 45.

¹³⁷ Dynamic efficiency ensures that incentives are maintained for the access provider to undertake investment and innovation in essential infrastructure over time.

¹³⁸ Access Economics, *Australian Mobile Telecommunications Industry: Economic Significance & State of the Industry*, July 2007, p 62.

311. Accordingly, the Commission considered that the pro-competitive and efficiency benefits resulting from co-location are likely to outweigh the detriment to end-users resulting from performance degradation, provided that such degradation is carefully managed. The Commission's view in the draft STD was that a definition of unacceptable performance degradation that permits a link budget degradation of 1.0dB is in the long-term benefit of end-users of mobile telecommunications services within New Zealand.
312. In response to the Commission's analysis of the likely efficiency trade-offs associated with co-location, Vodafone submitted that responsible regulatory practice requires that theoretical assertions must be empirically tested, and that it is not sufficient to rely on a 'theoretical' analysis without demonstrating how a net benefit could be generated without testing to see whether one is, in fact, actually likely to exist.¹³⁹
313. Similarly, Telecom submitted that:
- ...the Commission has not presented any clear evidence as to whether the trade offs associated with a loss of service that arise from Unacceptable Performance Degradation being set at 1 db will ultimately be for the long term benefit of end users. In the Commission's view, all New Zealanders should forgo 1 dB of quality (which may, for example, be loss of coverage in rural areas or within a building) in return for an assumed reduction in price following entry. The Commission seems to assume that end users are willing to accept a lower quality service for a given reduction in price. Practically, Telecom knows that will not always be the case.¹⁴⁰
314. Furthermore, in response to the evidence provided by the Commission that in the Australian market co-location arrangements were entered into as a means of defraying the overall costs associated with the 3G network build-out, Telecom noted that Australian operators are not faced with the Resource Management Act limitations that are present in New Zealand.¹⁴¹
315. NZ Communications, on the other hand, submitted that it is in the long-term interests for all New Zealand consumers to allow for the potential of some marginal degradation in a regulated environment, thereby permitting new entrants to use co-located facilities.¹⁴²
316. The Commission considers that qualitative economic analysis forms a valid and valuable part of assessing whether a determination is in the long-term interests of end-users, especially where data to perform quantitative economic modelling is unavailable. The Commission notes that both Telecom and Vodafone submitted that quantitative analysis of the potential benefits of the Mobile Co-location Service was not possible due to a lack of available data¹⁴³, and

¹³⁹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 32, para 17.

¹⁴⁰ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 12, para 49.

¹⁴¹ *ibid*, p 16, para 55.

¹⁴² NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 3, para A.3.

¹⁴³ Vodafone, *Standard Terms Proposal for Mobile Co-location*, 28 April 2008, p 50, para 142; Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, p 11, para 42.

considers that in such situations greater weight will often need to be placed on qualitative assessment of economic issues.

317. The Commission considers that the analysis of the long-term interests of end-users in the draft STD, including the diagram demonstrating qualitatively the expected efficiency outcomes, remains a valid assessment after consideration of the submissions and cross submissions. More specifically, the Commission agrees with NZ Communications that the competition benefits resulting from co-location are likely to outweigh the degradation to existing services, provided that interference is carefully managed in accordance with the provisions of the Mobile Co-location Interference Management and Design document.
318. The Commission's view remains that co-location is likely to give rise to significant pro-competitive and efficiency benefits. Therefore, the Commission considers that it is in the long-term benefit of end-users to allow some marginal degradation to existing services in order to facilitate increased co-location opportunities.

Interference management solutions

319. At the Mobile Co-location Conference, Professor Reg Coutts, on behalf of NZ Communications, suggested that managing interference associated with co-location is not fundamentally a technical issue. Specifically, Professor Coutts stated that:

...if you get a group of RF engineers together... you can consistently make that work. What we have here is a problem - is we're not allowing the RF engineers to get together, right, to solve really a quite straightforward problem from an RF engineer point of view.¹⁴⁴

320. This raised the question of whether a non-prescriptive definition of unacceptable performance degradation may be the most effective way of ensuring that interference issues arising from co-location are appropriately dealt with.
321. NZ Communications also stated at the conference that:

...the reason that 0.5 versus 1 dB is such an issue for us is that we believe it's being used to justify unreasonable positions which are being taken by Vodafone and Telecom with regard to the level of separation they require from our antenna versus their antenna, I mean it's been used to justify solutions which are just unworkable for us.¹⁴⁵

With other parties we have built. With Compass we've built a co-location, and with Woosh we've built two co-locations, but with Vodafone and Telecom we've not built any co-locations ever, not since 2007 ever.¹⁴⁶

322. Conversely, at the conference TeamTalk noted that they have approximately 150 co-located sites, mostly with Telecom and Kordia, and that it generally takes two-to-three weeks to add new sites under the agreements they have these parties.¹⁴⁷ Furthermore, TeamTalk suggested that although their technical requirements are similar to that of a cellular mobile network operator, all the

¹⁴⁴ Mobile Co-location Conference Transcript, 10 October 2008, p 16, lines 8-12.

¹⁴⁵ *ibid*, p 21 - 22.

¹⁴⁶ Mobile Co-location Conference Transcript, 9 October 2008, p 67, lines 22-24.

¹⁴⁷ *ibid*, p 54, lines 10-12.

interference issues that have arisen are all sensible engineering issues that need to be solved, and they get solved.¹⁴⁸

323. At the conference Vodafone summarised the interference management issues associated with the Mobile Co-location Service as follows:

What the Commission has is a trade-off. On one hand it wants to see co-location occur because that can hopefully provide a lot of competitive benefits. But on the other hand it doesn't want it to occur in a way that will lead to significant reductions in the existing quality of service for consumers. So the question I guess we're having is what is the maximum allowable level of unacceptable performance degradation? So I take the point that if there is an interference issue the RF engineers can probably work together to try and sort it out. But the question is what is the limit that we will accept as the maximum level of unacceptable performance degradation?¹⁴⁹

324. Although the Commission considers that in an ideal world RF engineers from the two co-locating parties would work together to formulate site-specific interference solutions that are suitable for both parties, history suggests that negotiations on interference related issues have stalled between certain parties. The Commission notes that TeamTalk, who are not in direct competition with cellular mobile network operators such as Vodafone and Telecom, has successfully co-located on a large number of sites, and managed to resolve any interference issues in each case.
325. The Commission notes, however, that despite having co-location agreements in place with Vodafone and Telecom, NZ Communications, who will be in direct competition with these parties once they launch, are yet to complete a single co-location build with either of these parties. Meanwhile, NZ Communications have successfully co-located on a small number of sites with Woosh and Compass.
326. The Commission notes that the contentious nature of interference issues has been demonstrated in submissions during the Mobile Co-location STD process, and that there is a history of delay in relation to Mobile Co-location. Therefore, the Commission considers that, in the absence of clear direction provided via the Mobile Co-location STD, interference issues could be used to frustrate the co-location process. Therefore, the Commission has determined that a prescriptive definition of the level of "unacceptable performance degradation" is required in the Mobile Co-location STD.

Calculation of link budget degradation

327. Submissions on the draft STD indicated that clarification regarding how the loss in link budget is to be calculated is required. Vodafone and Kordia, in particular, expressed differing views on the elements that should comprise the "receiver noise floor elevation". This debate centred around whether an Access Provider's internal interference should be factored into the calculation.
328. Kordia's submissions argued that internal interference (I_{int}) originating within the Access Provider's network, should not be included in the quantitative

¹⁴⁸ Mobile Co-location Conference Transcript, 9 October 2008, p 54, lines 16-20.

¹⁴⁹ Mobile Co-location Conference Transcript, 10 October 2008, p 26, lines 2-10.

determination of the threshold for unacceptable performance degradation, because I_{int} varies from one network to another depending on engineering practices, as well as varying with time as a result of varying traffic loading on the network. Furthermore, Kordia noted that:

- the level of internal interference also changes as the network power levels change in response to changing external interference; and
- I_{int} is also not included in the methods that ITU reports describe for determining the threshold for Unacceptable Performance Degradation, such as Report ITU-R M.2039.¹⁵⁰

329. Vodafone, on the other hand, stated that internal interference should be included in the calculation, because the impact on the link budget will be determined by all of:

- the receiver noise floor;
- external interference (I_{ext}); and
- interference from existing users (I_{int}).¹⁵¹

330. The two methods of calculating noise floor elevation are shown respectively in Equation 1 and Equation 2 below:

Equation 1: NFE excluding internal interference

$$NFE = 10 * \log_{10} \left(\frac{N_{NF} + I_{Ext}}{N_{NF}} \right)$$

Equation 2: NFE including internal interference

$$NFE = 10 * \log_{10} \left(\frac{N_{NF} + I_{Int} + I_{Ext}}{N_{NF} + I_{Int}} \right)$$

Where: N_{NF} = Power level (watt) of the noise floor
 I_{Ext} = Power level of the externally interfering signal
 I_{Int} = Power level of the internally interfering signal

331. Consistent with their previous submissions, at the Mobile Co-location Conference Equation 2 was favoured by Vodafone¹⁵² while Equation 1, which excludes internal interference, was supported by Kordia¹⁵³ NZ Communications¹⁵⁴ and Telecom¹⁵⁵.

¹⁵⁰ Kordia, Letter to the Commission, *Cross submission on draft Mobile Co-location Standard Terms Determination – Interference Management*, 6 October 2008, p 2, para 4.

¹⁵¹ Vodafone, E-mail to the Commission (Bruce Officer) from Richard York, *Elaboration on co-location link loss budget*, 22 September 2008.

¹⁵² Mobile Co-location Conference Transcript, 10 October 2008, p 14, line 10.

¹⁵³ Mobile Co-location Conference Transcript, 10 October 2008, p 10, lines 8-12.

¹⁵⁴ *ibid*, p 17, line 6.

332. Vodafone noted at the conference, however, that although it holds the view that internal interference should be included in the calculation of the noise floor elevation, it is generally comfortable with the use of Equation 1. Specifically, Vodafone stated that:

In the sense of practicality we will accept that view [that internal interference should be excluded].¹⁵⁶

333. The Commission considers that Equation 1 excludes the interference which may be caused by the particular technology being used, and is easier to calculate and to monitor than Equation 2. Therefore, the Commission has determined that that the noise floor elevation is to be calculated using the formula in Equation 1.
334. The Commission notes, however, that there are a number of additional factors to be considered when calculating the total degradation in the link budget. For example, factors such as signal propagation losses, antenna and other system gains, receiver sensitivities at both ends, and losses including cable, connector, device and other miscellaneous losses are all relevant considerations. These additional factors are captured in clause 6.2.2 of the Mobile Co-location Interference Management and Design document.

Impact of 1.0dB degradation in the link budget

335. In response to the definition of unacceptable performance degradation contained in the draft STD, Vodafone submitted that the Commission has set too high a level of loss from the Access Provider's link budget at 1.0dB. In particular, Vodafone submitted that the Commission has not had sufficient regard to the evidence provided by Vodafone in its STP that demonstrates the harmful consequences for network performance that would follow from such a level of loss in the link budget. Furthermore, Vodafone submitted that the Commission has over-estimated the incremental benefits that will flow for consumers from having a loss in the link budget of 1.0dB, as compared to Vodafone's recommended level of 0.5dB.¹⁵⁷
336. Specifically, Vodafone suggested that:
- if most of the competitive benefits arising from co-location can still be achieved at a level of loss in the link budget of 0.5dB, then there may be a net loss for consumers in increasing this level of loss to 1.0dB; and
 - the Commission has to be mindful not to attribute all of the competitive benefits that might arise from a new entrant in the market purely to the availability of the Mobile Co-location Service (because a new entrant will still have access to other services, such as national roaming).¹⁵⁸

¹⁵⁵ *ibid*, p 17, lines 17-20.

¹⁵⁶ *ibid*, p 17, line 10.

¹⁵⁷ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 9, para 8.

¹⁵⁸ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 12, paras 14-15.

337. Vodafone also submitted that the following negative impacts on network performance could follow if co-location is allowed to generate a loss in the link budget of 1.0dB:
- loss of network coverage – in particular, Vodafone estimated that co-location under the draft STD could potentially lead to approximately 2,600 rural Vodafone consumers who currently receive service being left without mobile network coverage if co-location occurred on its rural cell sites;
 - a reduction in maximum theoretical data rates consumers can experience of around 11 per cent at the cell edge, based on the link budget of a typical UMTS Site offering HSDPA 3.6Mbps; and
 - a lowering in the cell coverage range over which consumers can receive maximum data rate speeds.¹⁵⁹
338. Similarly, Telecom submitted that performance degradation of 1.0dB will have a material impact on the quality of service that Access Providers are able to provide end-users. Telecom submitted that performance degradation resulting from interference from Access Seekers should not exceed 0.5dB.¹⁶⁰
339. Kordia submitted that Vodafone’s statement that 1.0dB loss in link budget could lead to approximately 2,600 rural Vodafone customers being left without mobile network coverage may be misleading. Kordia submitted that a 1.0dB loss of link budget would lead to a reduction in coverage radius from a cell site that:
- has another mobile operator co-locating; and
 - the Access Seeker is causing interference up to the maximum permitted level.
340. Kordia suggested that this claim seems to be an exaggeration because such reduction in cell radius would affect the “area availability” of the service, but not leave 2,600 rural customers without coverage.¹⁶¹
341. Woosh submitted that the link budget degradation should be restricted to 0.5dB. Although Woosh acknowledged that it had originally considered that 1.0dB was appropriate, it highlighted that its thinking at this time was that this was a nominal degradation and would have minimal impact. However, Woosh submitted that on reflection, this position was wrong because in a non-fixed wireless data network, 1.0dB degradation can impact on total cell throughput, and cell edge performance.¹⁶²
342. TeamTalk submitted that it supports the view of both Telecom and Vodafone that unacceptable performance degradation should not be greater than 0.5dB for all co-location requests by Access Seekers because of the performance

¹⁵⁹ *ibid*, p 13, para 20.

¹⁶⁰ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Main Submission, p 11, paras 38-39.

¹⁶¹ Kordia, *Cross-submission on draft Mobile Co-location Standard Terms Determination*, 8 September 2008, p 2.

¹⁶² Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 3.

degradation in terms of coverage and data speed that any losses above this threshold would cause.¹⁶³

343. Having supported 1.0dB link budget degradation throughout its previous submissions in relation to the Mobile Co-location STD, in post-submission period correspondence with the Commission, Kordia amended its position on the value for the acceptable receiver noise floor elevation to no more than 0.4dB. Kordia also submitted that the receiver noise floor elevation (NFE (dB)), calculated in accordance with Equation 1, needs to result in a Link Budget loss of less than 0.5dB when the impacts of other interference mitigation measures are taken into account.¹⁶⁴

344. Kordia explained its change in position as being necessary to:

...avoid excessive Link Budget loss for systems that have low internal interference, such as GSM where internal interference can be typically approximately 6 dB to 10 dB below the receiver noise floor. Further, the use by ITU-R of 1.0 dB receiver noise floor elevation, only applies when a single interferer is allowed for, and where interference affects a limited number of cells. In other cases ITU-R practice is to use a noise floor elevation of 0.4 dB for determining the threshold of Unacceptable Performance Degradation.¹⁶⁵

345. In response to arguments made by other parties, NZ Communications submitted that it is strongly supportive of the 1.0dB threshold set by the Commission in the draft STD. In support of this position, NZ Communications submitted that the argument that important calls will not be completed or marginal consumers will not be served is incomplete and debatable. Furthermore, NZ Communications contended that network competition will create additional capacity, freeing up congested networks, thereby increasing cell coverage and facilitating an environment whereby operators are competing for excellent coverage at the network level.¹⁶⁶

346. During the discussion on interference management at the Mobile Co-location Conference, Vodafone highlighted the degradative impact of 1.0dB in non-urban areas. Specifically, Vodafone stated that:

The difficulty we have is in some cases yes, we can accept more than 0.5 dB. But using that as a general level in a number of scenarios we won't have any other option but just to take the hit, particularly in rural areas. If you don't have - if you lost some link budget or lose some coverage, other than putting a new site we just don't have any other measures. And that's a concern we have tried to express.¹⁶⁷

We will do everything we can to accommodate the access seeker, it's absolutely in our interests to do that because that gives us a better return on the capital sunk. Our concern is at

¹⁶³ TeamTalk, *Cross submission on draft Standard Terms Determination for the specified service co-location on cellular mobile transmission sites*, 8 September 2008, p 2.

¹⁶⁴ Kordia, Letter to the Commission, *Cross submission on draft Mobile Co-location Standard Terms Determination – Interference Management*, 6 October 2008, p 2, paras 8-9.

¹⁶⁵ *ibid*, p 3, para 10.

¹⁶⁶ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 3, para A.2.

¹⁶⁷ Mobile Co-location Conference Transcript, 10 October 2008, p 28, lines 2-7.

the edge of the network, particularly in the rural areas, where if we do that that will reduce the signal.¹⁶⁸

347. Furthermore, Vodafone noted that the main issue with rural areas is:

...because we have less density of sites there, so there are less ways to deal with it [interference]...¹⁶⁹

348. In response to questions regarding the appropriate level of link budget degradation in urban and non-urban areas, Professor Reg Coutts, speaking on behalf of NZ Communications, suggested that 1.0dB would be appropriate for urban areas. Professor Coutts also noted that:

In the rural environment I think 0.5 is not unreasonable¹⁷⁰

349. The Commission accepts that allowing 1.0dB degradation to existing services will impact on the quality of service received by some end-users. In particular, the Commission acknowledges the significance of this issue in non-urban areas where there are likely to be few options available to a mobile network operator in order to alleviate the impact of such interference. Therefore, the Commission has considered setting different thresholds for link budget degradation in “urban” and “non-urban” areas. This is discussed further below.

Urban/non-urban classification

350. At the Mobile Co-location Conference it was acknowledged by a number of parties that the impact of link budget degradation is likely to be less significant in urban areas, where overlapping coverage is typically present, when compared to non-urban areas, where cells are more likely to be isolated. Therefore, rather than setting an interference management threshold that caters exclusively for the lowest common denominator, the Commission has considered geographic differentiation as a method for setting a level of unacceptable performance degradation that is in the long-term benefit of end-users.

351. The Commission considers that, in areas of overlapping coverage (i.e. “urban” areas), an Access Provider will have a range of options available to mitigate the impact of 1.0dB link budget degradation, whilst such options are unlikely to exist in “non-urban” areas.

352. The Commission’s view, therefore, is that, when compared to a single nationwide threshold, an “urban”/“non-urban” approach would more accurately reflect the impact of link budget degradation on the end-user’s experience.

353. Conceptually, the Commission considers that distinguishing between urban and non-urban areas may best give effect to the purpose statement set out in section 18 of the Act. In particular, the Commission considers that setting a higher interference threshold in urban areas would help facilitate increased co-location in areas where the impact of link budget degradation is able to be mitigated by

¹⁶⁸ *ibid* pp 28-29.

¹⁶⁹ *ibid*, p 29, lines 29-30.

¹⁷⁰ *ibid*, p 40, line 22.

the Access Provider, whilst limiting the impact of such degradation in more vulnerable areas.

354. Following the discussion at the conference, the Commission sought submissions from interested parties on possible methods for distinguishing between “urban” and “non-urban” areas as part of setting interference management thresholds.
355. Kordia, TeamTalk, Telecom, Vodafone and Woosh provided a joint submission in response to this issue. The parties also submitted that ultimately, end-users will not benefit if co-location leads to excessively high levels of both voice and data rate degradation, and this will be the case irrespective of whether end-users are in urban or non-urban areas.
356. Furthermore, Kordia, TeamTalk, Telecom, Vodafone and Woosh suggested that geographic differentiation introduces an additional level of complexity that will never completely align with the practicalities and nuances that exist in the real world. However, the parties submitted that if a distinction is to be made between different geographic regions, it should be on the basis of “clutter data”.¹⁷¹
357. In their joint submission, the parties recommended that the Commission set geographic boundaries for unacceptable performance degradation based on New Zealand clutter data. The parties also emphasised their view that:

... the geographic classification of a site should be based on the area that the site provides coverage to, rather than on the location of site towers within that area. That is, if a particular site provides coverage to both urban and non-urban areas, then that site should be classified as a non-urban site even if the site tower is located within the urban part of the cell’s coverage area.¹⁷²

358. Kordia, TeamTalk, Telecom, Vodafone and Woosh proposed that the Terralink clutter database be adopted, with the following clutter classes defined as urban:¹⁷³

LCDB2 Class	Terralink descriptor	Urban / Non-urban
1	Built-up Area	Urban
2	Urban Parkland / Open Space	Urban
3	Surface Mine	Non-urban
4	Dump	Non-urban
5	Transport Infrastructure	Urban
10	Coastal Sand and Gravel	Non-urban
11	River and Lakeshore Gravel and Rock	Non-urban
12	Landslide	Non-urban
13	Alpine Gravel and Rock	Non-urban
14	Permanent Snow and Ice	Non-urban
15	Alpine Grass-/ Herbfeld	Non-urban
20	Lake and Pond	Non-urban

¹⁷¹ Kordia, TeamTalk, Telecom, Vodafone and Woosh, *RE: Mobile Co-location STD - further consultation*, 7 November 2008, pp 1-2.

¹⁷² *ibid* p 2.

¹⁷³ *ibid* pp 16-17.

LCDB2 Class	Terralink descriptor	Urban / Non-urban
21	River	Non-urban
22	Estuarine Open Water	Non-urban
30	Short-rotation Cropland	Non-urban
31	Vineyard	Non-urban
32	Orchard and Other Perennial Crops	Non-urban
40	High Producing Exotic Grassland	Non-urban
41	Low Producing Grassland	Non-urban
43	Tall Tussock Grassland	Non-urban
44	Depleted Grassland	Non-urban
45	Herbaceous Freshwater Vegetation	Non-urban
46	Herbaceous Saline Vegetation	Non-urban
47	Flaxland	Non-urban
50	Fernland	Non-urban
51	Gorse and or Broom	Non-urban
52	Manuka and or Kanuka	Non-urban
53	Matagouri	Non-urban
54	Broadleaved Indigenous Hardwoods	Non-urban
55	Sub Alpine Shrubland	Non-urban
56	Mixed Exotic Shrubland	Non-urban
57	Grey Scrub	Non-urban
60	Minor Shelterbelts	Non-urban
61	Major Shelterbelts	Non-urban
62	Afforestation (not imaged)	Non-urban
63	Afforestation (imaged, post LCDB 1)	Non-urban
64	Forest - Harvested	Non-urban
65	Pine Forest - Open Canopy	Non-urban
66	Pine Forest - Closed Canopy	Non-urban
67	Other Exotic Forest	Non-urban
68	Deciduous Hardwoods	Non-urban
69	Indigenous Forest	Non-urban
70	Mangrove	Non-urban

359. NZ Communications, on the other hand, submitted that if the Commission intends to distinguish between “urban” and “non-urban” areas, then it supports the determination being made based on the density of cell sites.¹⁷⁴

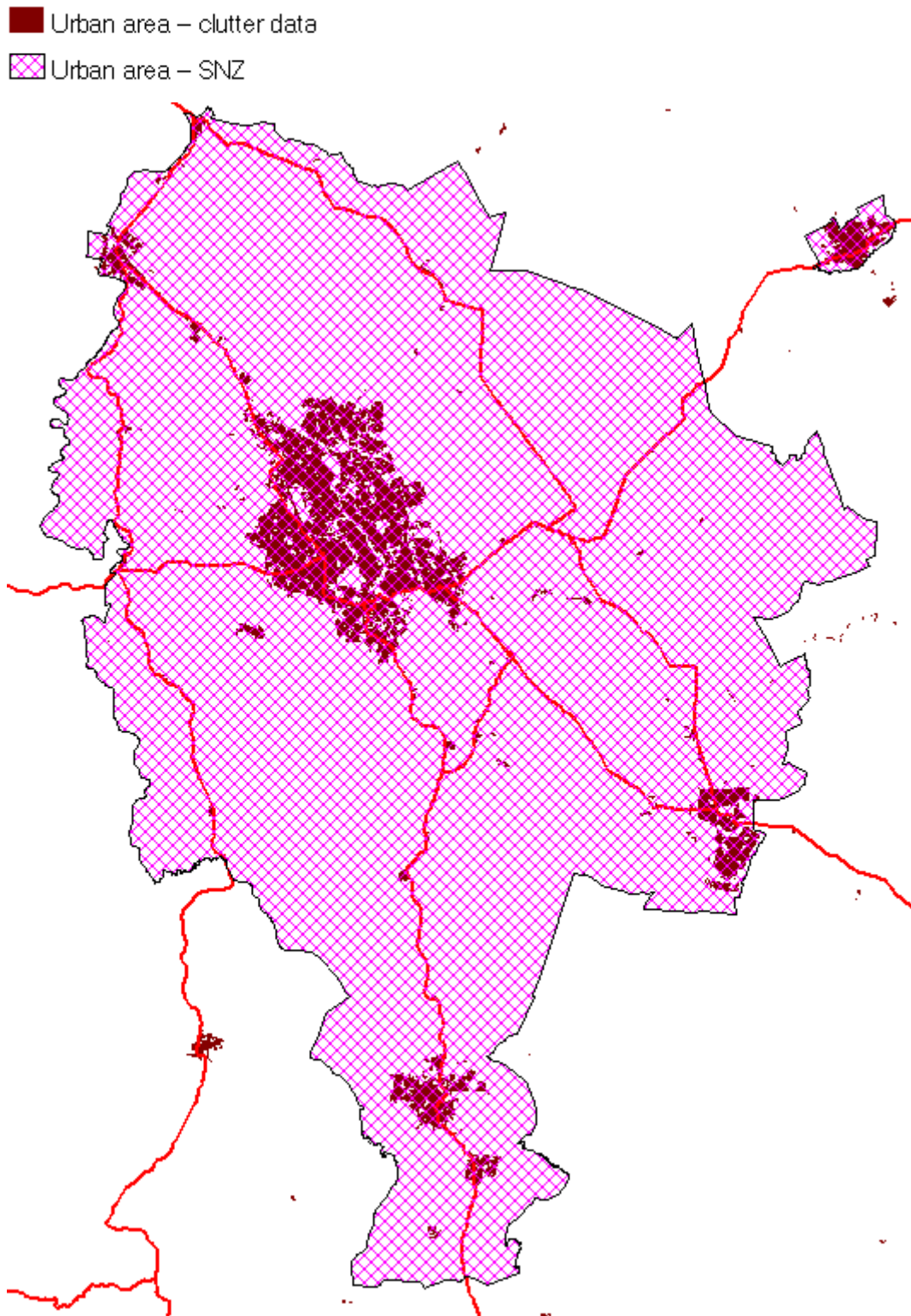
Issues with geographic differentiation

360. Although the Commission considers that setting different interference thresholds for “urban” and “non-urban” areas may best give effect to the purpose statement set out in section 18 of the Act, it acknowledges that there are a number of significant issues that arise when attempting to make this distinction.
361. Specifically, sites that are on the boundary of urban and non-urban areas present a complex issue. For example, where a cell site provides coverage to both urban and non-urban areas, should that site be classified as urban or non-urban?

¹⁷⁴ NZ Communications, Letter to the Commission regarding classification of “urban and “non-urban” sites, 10 November 2008.

362. As noted above, Kordia, TeamTalk, Telecom, Vodafone and Woosh submitted that if a particular site provides coverage to both urban and non-urban areas, then that site should be classified as a non-urban site even if the site tower is located within the urban part of the cell's coverage area. The Commission however, considers that there are likely to be significant issues with this approach.
363. For example, based on the clutter data in the map of Hamilton set out in Figure 3 below, even in the most built-up areas of the CBD there are still significant pockets of non-urban clutter. Therefore, the Commission would expect that very few, if any, cell sites providing coverage to Hamilton city would be classified as "urban" under the proposal put forward in the joint submission. This is particularly of concern given that Hamilton is one of the largest cities in New Zealand.
364. Furthermore, the Commission is concerned as to how it will be determined whether a site located in an urban area provides coverage to a non-urban area. If such a decision was to be made using the Access Provider's radio planning tools, the Commission would be concerned that the decision would lack transparency, in that the Access Seeker would be unlikely to have access to the information used in the determination. Further, the Commission considers it desirable to have a consistent approach that can easily be employed across a number of Access Providers, which is unlikely to be the case where each Access Provider is using its own radio planning techniques.

Figure 3: Classification of Hamilton into urban and non-urban based on Statistics New Zealand classifications and clutter data¹⁷⁵



365. The Commission has also considered distinguishing between urban and non-urban sites based simply on the location of each cell site. For example, a cell

¹⁷⁵ Source: Kordia, TeamTalk, Telecom, Vodafone and Woosh, *RE: Mobile Co-location STD – further consultation*, 7 November 2008, p 13.

site located in “urban” clutter would be classified as an “urban” site, and therefore subject to a higher interference threshold, regardless of whether that site also provides coverage to a non-urban area.

366. Simplicity is one of the key benefits of this approach. However, this simplicity comes at a cost, in that the determination of urban and non-urban areas in accordance with this approach would be unlikely to accurately reflect the principle of overlapping and non-overlapping coverage areas – one of the key principles behind the “urban”/“non-urban” concept.
367. For example, the Commission notes that there may be small patches of “urban” clutter in remote areas, where significant overlapping coverage of cell sites is unlikely to be present. If a cell site was located in one of these small patches of urban clutter, it would be subject to the higher interference threshold, despite being in a fairly remote area.
368. For the reasons outlined above, the Commission has determined that differentiating between “urban” and “non-urban” sites is likely to be unworkable in practice, and that a single nationwide interference threshold is appropriate for the Mobile Co-location service. Although the Commission considers that distinguishing between “urban” and “non-urban” areas is conceptually attractive, the practical difficulties associated with such distinction are unlikely to outweigh the benefits of this approach.
369. In light of the arguments put forward by a number of parties on the impact of 1.0dB degradation in non-urban areas, and the statement from NZ Communications’ expert at the Mobile Co-location Conference that 0.5dB is “not unreasonable” in some circumstances, the Commission has determined that, on balance, a definition of unacceptable performance degradation which limits link budget degradation to 0.5dB (nationwide) is the option most likely to promote the long-term interests of end-users.
370. The Commission acknowledges that there may be difficulties in measuring the degradation to the Access Provider’s or Existing Co-locator’s link budget. The Commission considers that co-location should be allowed to proceed unless the testing process conclusively demonstrates that the threshold for “unacceptable performance degradation” has been breached. The Commission has amended clause 8.1.4 of the Mobile Co-location Interference Management and Design document accordingly.

Emergency services

371. In the draft STD the Commission set a maximum allowable loss in the link budget of 0.2dB for antenna solely dedicated to the provision of emergency services. The intention of this provision was to ensure that the internal communications systems of emergency service providers such as the New Zealand Police and the New Zealand Fire Service, would not be adversely impacted by the supply of the Mobile Co-location Service.
372. Vodafone submitted that this will have no meaningful impact on reducing the loss of calls to emergency services because cellular mobile networks do not have

separate dedicated antenna for the provision of emergency services.¹⁷⁶ However, Vodafone submitted that the reduction in coverage area resulting from 1.0dB degradation has the potential to impact on approximately 40 emergency services calls per month in rural areas made on Vodafone's network alone.¹⁷⁷

373. Similarly, Telecom submitted that the risk that end-users may no longer have access to emergency services is not covered off by creating an exception for Antennas that are used solely for the provision of those services. Rather, Telecom submitted that this is a much wider issue, because the public also rely on the cellular services of Access Providers and Access Seekers to contact emergency services. Telecom suggested that if the Commission sets unacceptable performance degradation at 1.0dB, a small percentage of these calls are no longer going to get through.¹⁷⁸

374. In response, NZ Communications submitted that:

...the arguments put forward in the various submissions regarding the adverse impact on emergency service calls are misplaced and unnecessarily alarmist. While all network providers use their best endeavours to provide quality services, because of the nature of mobile telecommunications it is not possible for any provider to provide fault free service. The quality and coverage of service depends partly on an end user's device, partly on the network operator's network and partly on other providers and telecommunications networks to which a network is connected. Coverage and service can be adversely affected by radio interference, atmospheric conditions, geographic factors, network congestion, maintenance, outages and other networks and provider sites, the configurational limitations of a mobile device at either end of the call or other operational or technical difficulties which means that any user may not receive some or all of the services in certain areas at certain times. In NZCL's view, the 1dB v 0.5dB discussion has little or no bearing on the emergency services issue.¹⁷⁹

375. TeamTalk noted that Vodafone appears to have assumed that "Antenna solely dedicated to the provision of Emergency Services" refers to an Antenna on a cellular system in which calls can be made by cellular handset to an Emergency Service. However, TeamTalk submitted that it had assumed that the reference to an Antenna solely dedicated to the provision of emergency services referred to Antenna that was supporting services operated by Emergency Services.

376. TeamTalk also submitted that the definition of Emergency Services needs to be widened as there are other parties, not listed, that also provide Emergency Services (such as Ambulance NZ, Civil Defence, etc).¹⁸⁰

377. At the Mobile Co-location Conference, TeamTalk suggested that with a limit of 0.5dB, additional protection is not required for emergency services. Moreover, TeamTalk agreed that if the Commission were to differentiate between urban and non-urban areas, 1.0dB would also be appropriate for emergency service in

¹⁷⁶ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, p 15, para 27.

¹⁷⁷ *ibid*, p 15, para 27.

¹⁷⁸ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Main Submission, pp 16-17, paras 57-58.

¹⁷⁹ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 9, para 5.9.

¹⁸⁰ TeamTalk, *Cross submission on draft Standard Terms Determination for the specified service co-location on cellular mobile transmission sites*, 8 September 2008, p 1.

urban areas.¹⁸¹ This view was supported by the other parties in attendance at the conference.

378. Accordingly, the Commission has removed references to specific levels of protection for emergency services from the definition of unacceptable performance degradation.

Outages

379. In the draft STD, the definition of unacceptable performance degradation included:

an incremental 5% increase in Outages in Telecommunications Services to End Users directly attributable to the incremental emissions of the Access Seeker from the Relevant Facility.

380. Furthermore, the term “Outages” was defined as:

means the proportion of dropped calls due to interference compared with the proportion of dropped calls in the absence of the interference.

381. Vodafone submitted that the definition of “Outage” is too narrow to capture the performance degradation which affects services to end-users.¹⁸²
382. Similarly, Telecom submitted that the restriction of Outages to dropped calls excludes other variables that affect end-user experience such as an increase in call set-up failure and a decrease in total traffic carried. Telecom submitted that these variables should also be included within the threshold for unacceptable performance degradation.¹⁸³
383. The Commission acknowledges that there are a large number of parameters in addition to the rate of dropped calls that define the customer service experience. However, the Commission considers that the most important parameters are the ability to set up a voice call, and to retain the connection for the duration of that call. The Commission’s view is that, not only should service continuity be an important consideration when defining the level of unacceptable performance degradation, but that the ability to reliably access the service should be equally important.
384. The Commission has removed references to “outages” from the definition of unacceptable performance degradation. Rather, the Commission has introduced a new term, “Call Failure Rate”, that better reflects the possible impact to end-users resulting from interference. This term includes measures of both dropped calls and call setup failures.

¹⁸¹ Mobile Co-location Conference Transcript, 10 October 2008, p 47.

¹⁸² Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of submissions, p 57.

¹⁸³ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Interference Management and Design document, p 4.

Definition of unacceptable performance degradation

385. For the reasons outlined in the above sections, the Commission has defined “unacceptable performance degradation” in the Mobile Co-location Interference Management and Design document as follows:

“Unacceptable Performance Degradation” in this Interference Management and Design document means any one or more of the following:

- (a) Isolation of less than 30dB between the Antenna port of the Access Seeker’s transmitting equipment and the Antenna port of the Access Provider’s receiving equipment or any Existing Co-locator’s transmitting or receiving equipment;
- (b) a total level of degradation to the Access Provider’s or Existing Co-locator’s Link Budget of more than 0.5dB in either the uplink budget or the downlink budget;
- (c) an incremental 5% increase in the Access Provider’s or Existing Co-locator’s Call Failure Rate. Any increase in Call Failure Rate is to be assessed:
 - (i) prior to Phase 1 of the Project Closure Checklist under section 20 of the Mobile Co-location Operations Manual; and
 - (ii) over a period with a reasonable number of calls and a mix of call types representative of the traffic at the Relevant Facility.

Unavoidable Unacceptable Performance Degradation

386. The Commission introduced the concept of “unavoidable unacceptable performance degradation” in the draft STD as a way of ensuring that the Access Provider and any existing co-locators would cooperate to minimise the effects of unacceptable performance degradation.

387. Vodafone submitted that use of this concept creates serious issues because:

- the term seems to suggest that some “unacceptable performance degradation” is acceptable, which is inconsistent with the concept of a non-compliant solution which underpins Schedule 5; and
- it is based on the misconception that one or more of the unacceptable performance degradation measures cannot be avoided.

388. Vodafone elaborated further by noting that the purpose of defining the term unacceptable performance degradation is to ensure the performance degradation resulting from co-location does not exceed a predefined limit. Vodafone suggested that the definition of “unavoidable unacceptable performance degradation” essentially introduces ambiguity into unacceptable performance degradation, which is the primary threshold for ensuring co-location does not introduce degradation in excess of a predefined limit.¹⁸⁴

389. Telecom submitted that the term “unavoidable unacceptable performance degradation” is unnecessary. Telecom submitted that an Access Provider, Access Seeker, or existing co-locator should not be required to accept solutions

¹⁸⁴ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of comments pp 58 - 59.

that result in unacceptable performance degradation during the probation period.¹⁸⁵

390. The Commission agrees with these submissions and, therefore, has removed references to the term “unavoidable unacceptable performance degradation” from the Mobile Co-location Interference Management and Design document.

Management of third party interference

391. In the draft STD the Commission excluded the phrase "and any other third party" from the definition of 'Existing Co-locator'. This was on the basis that the STD is an instrument governing the relationship between an Access Provider and an Access Seeker in respect of the Mobile Co-location Service, and accordingly it was not appropriate to deal with third party rights and/or obligation in the STD (except where those third parties were existing Access Seekers under the terms of the Mobile Co-location STD).
392. The effect of this change was that third parties who co-locate on an Access Provider's Relevant Facilities are not subject to the terms of the Mobile Co-location Interference Management and Design document.
393. Telecom submitted that these third parties should be subject to the processes, and benefit from the protections, in the Interference Management and Design Document. Telecom noted that third part co-locators provide valuable services to their customers and have entered into contracts with Access Providers that should not be adversely affected by the STD unnecessarily. Therefore, Telecom submitted that the definition of Existing Co-locator should be "means any other Access Seeker and any other third party who has installed and operates equipment on or with the Relevant Facilities"¹⁸⁶.
394. TeamTalk submitted that it supports Telecom's submission. TeamTalk noted that there are many other services presently co-located on masts and structures supporting cellular antennas and these services need effective protection.¹⁸⁷
395. Similarly, Vodafone submitted that the definition of 'Existing Co-locator' is too narrow as parties may have co-located by separate agreement rather than seeking access under the terms of the Mobile Co-location STD. Vodafone submitted that these entities need to be taken into account as they will be affected and need to be involved in any testing.¹⁸⁸
396. The Commission has sought to extend the scope of the Mobile Co-location Interference Management and Design document to the extent it can apply to third parties. In particular, the Commission has included an obligation on an Access Provider to use all reasonable commercial endeavours to involve any

¹⁸⁵ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Interference Management and Design document, p 5.

¹⁸⁶ *ibid* p 4.

¹⁸⁷ TeamTalk, *Cross submission on draft Standard Terms Determination for the specified service co-location on cellular mobile transmission sites*, 8 September 2008, p 1.

¹⁸⁸ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of comments, p 59.

third parties in the radio frequency interference management process. There are, however, limits on how far the Commission can go to include third parties given the nature and purpose of the Mobile Co-location STD.

397. The Commission also notes that the Mobile Co-location Interference Management and Design document expressly acknowledges that the Radiocommunications Act 1989 and associated regulations are the primary tool in New Zealand for dealing with radio frequency interference.

Expert Determinations

398. The Commission has clarified the approach to expert determination in respect of disputed issues under the Mobile Co-location Interference Management and Design document. Specifically, the expert making the determination, which takes place in accordance with the Mobile Co-location General Terms, is required to consider the principles and objectives of the Mobile Co-location Interference Management and Design document. The Commission considers that this change clarifies the role of expert determinations and the importance of managing radio frequency interference issues in a principled fashion.

IMPLEMENTATION PLAN

399. The Mobile Co-location Implementation Plan sets out timeframes for implementation of the Mobile Co-location Service and includes Soft Launch requirements, key performance indicators, and reporting requirements. The Mobile Co-location Implementation Plan is part of the Mobile Co-location Terms.

Initial implementation phase

400. The initial implementation phase set out in the draft Mobile Co-location STD was a period of 15 Working Days from Day Zero (the date of determination for current Access Providers, or the date at which future Access Providers are specified as such), during which the following tasks were to be completed before Access Seeker could submit initial orders for the service:

- the Common Format Site Database to be accurately populated and available to Access Seekers and the Commission (within five Working Days of Day Zero);
- necessary enhancements to the Operational Support Systems made (within five Working Days of Day Zero); and
- Access Seekers to have provided forecasts to Access Providers (within 10 Working Days of the determination date).

401. Vodafone submitted that the necessary enhancements to the Operational Support Systems would be achievable within five Working Days if the Commission accepted its proposed amendments to the Soft Launch process.¹⁸⁹ Telecom, on the other hand, submitted that 40 Working Days would be required for the necessary enhancements and that a further 15 Working Days is required for reporting on completion for both the Operational Support Systems and the database.¹⁹⁰ However, in comments made at the Mobile Co-location Conference Telecom confirmed that they were able to complete the Operational Support Systems according to the provisions in the draft STD within 10 Working Days of the Determination Date.¹⁹¹

402. Vodafone submitted that it would need at least 80 Working Days to populate the database with rooftop sites and lampposts, and that this would double the number of sites in the database.¹⁹² In its submission on the draft STD, Telecom stated that it would not be possible to deliver the database within five Working Days of the determination, but rather it would take 40 Working Days to populate

¹⁸⁹ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of comments, p 78.

¹⁹⁰ Telecom, *Submission on the draft Commerce Commission Mobile co-location STD*, 22 August 2008, Detailed submission on the Implementation Plan, p 4.

¹⁹¹ Mobile Co-location Conference Transcript, 10 October 2008, pp 129-130.

¹⁹² Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of comments, p 77.

the database with 80% of sites and 110 Working Days to complete the database.¹⁹³

403. Woosh submitted that 15 Working Days would be required to complete a database that only had masts and towers.¹⁹⁴
404. NZ Communications, however, submitted that there is no need for an extended timeframe for the database, as all parties have had sufficient warning of the need for a database of relevant facilities.¹⁹⁵
405. In light of submissions on the work required to implement the Mobile Co-location Service and comments by parties at the Mobile Co-location Conference, the Commission has extended the timeframe for completion of the implementation phase by five Working Days. The timeframe set out in the final Mobile Co-location STD for completion of Operational Support Systems and an initial version of the database is 10 Working Days from Day Zero, with a further five Working Days for the relevant Access Provider reports and Access Seeker forecasts.
406. The Commission considers that, given the additional work required from Access Providers, there are reasonable grounds to allow additional time for inclusion of the following information in the Common Format Site Database:
- rooftop sites; and
 - references to the Ministry of Economic Development database (in accordance with the database provisions in the Operations Manual).
407. The Commission has determined that this additional information is to be included in each Access Provider's Common Format Site Database 40 Working Days after Day Zero. Provisions relating to the completion of the final implementation of the database, and associated reporting on this task, have also been included in the key performance indicators section of the Mobile Co-location Implementation Plan.

Soft Launch

408. Under the terms of the draft Mobile Co-location STD the Soft Launch commenced in respect of each Access Provider when that Access Provider receives its first request from an Access Seeker. This date could be not less than 15 Working Days after the Determination Date. The Soft Launch would end either when the Access Provider approved or rejected 15 project plans, or 200 Working Days from its commencement date, whichever occurred first.
409. Vodafone submitted that the Soft Launch period in the draft STD is too short to allow for changes to systems in response to identified problems, and to prevent

¹⁹³ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Implementation Plan, p 4.

¹⁹⁴ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p.2.

¹⁹⁵ NZ Communications, *Cross Submissions regarding the Commerce Commission's Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 7.

business as usual applications overtaking Soft Launch Applications.¹⁹⁶ Rather, Vodafone submitted that the Soft Launch should encompass Applications initiated in the first 40 Working Days, at a rate of up to 10 Applications per Access Seeker per week.¹⁹⁷ For similar reasons, Telecom proposed a time-base Soft Launch of 70 Working Days.¹⁹⁸ Telecom also suggested a ‘bow wave’ approach whereby the number of initial Applications processed would be less than the full Service Level limit, but would increase to that limit during the first five months of the service.¹⁹⁹

410. Woosh cited the speed of the draft Soft Launch as problematic and recommended a Soft Launch period of six months, during which the Access Provider should have progressed up to 10 Applications or a number of Applications equivalent to 5% of their published database.²⁰⁰
411. In its cross submission, NZ Communications stated that the Soft Launch process should not be extended in any manner, and that 15 Applications would be sufficient for parties to become familiar with the co-location process.²⁰¹
412. The Commission considers that there is merit in the fundamental approach proposed by Vodafone, especially given that it would guarantee a set amount of time for changes to be made to processes and systems before full implementation, and ensure greater separation of business as usual orders from Soft Launch orders.
413. The Implementation Plan in this final STD incorporates Vodafone’s proposed Soft Launch process with several amendments, including limiting Soft Launch Applications to those initiated over a period of 30 Working Days from the first Application (rather than 40 Working Days), and that at least 10 Applications must be initiated, rather than five. The Commission considers that these amendments encourage efficient delivery of the service, while also providing greater certainty that sufficient Applications are received to fully test the end-to-end process.
414. The Commission does not consider that a ‘bow wave’ approach is warranted given that there is already a Service Level limit in place, and that Access Providers have experience with processing commercial co-location applications (for example, its submission on Service Level timeframes Telecom claims that it has learnt lessons regarding the appropriate timeframes for the regulated service²⁰²).

¹⁹⁶ Vodafone, *Submission on the draft Standard Terms Determination for the mobile co-location on cellular transmission sites service*, 22 August 2008, Table of comments, pp 75-76.

¹⁹⁷ *ibid* pp 74-75.

¹⁹⁸ Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Implementation Plan, p 5.

¹⁹⁹ *ibid* pp 6-7.

²⁰⁰ Woosh, *Mobile Co-location: Response to Draft Determination*, 22 August 2008, p 2.

²⁰¹ NZ Communications, *Cross Submissions regarding the Commerce Commission’s Draft Standard Terms Determination for the Mobile Co-location Service*, 8 September 2008, p 14, para 7.12.

²⁰² Telecom, *Submission on the draft Commerce Commission Mobile Co-location STD*, 22 August 2008, Detailed submission on the Service Level Terms, p 5.

Reporting on KPIs

415. The Commission has included two additional provisions in relation to reporting on key performance indicators that were absent from the draft STD, namely that:
- all reports on key performance indicators are to be published on the Access Providers' website; and
 - where the Access Provider has not met one or more of the key performance indicators, and is requested to do so by the Commission, the Access Provider will provide fortnightly reports to the Commission setting out reasons why it has not met the requirements and the steps it intends to take to remedy the action.
416. Given that these provisions were included in the UBA Backhaul and UCLL Backhaul STDs, the Commission does not consider there to be any reason why these provisions are not equally applicable to the Mobile Co-location Service.

Brown out period

417. For consistency with the UBA STD, the Commission has determined that the timeline for delivery of the Mobile Co-location Service, as set out in section 4 of the Implementation Plan, will not include any Working Day between 22 December 2008 and 2 January 2009 (inclusive). A new clause 1.9 has been inserted in the Mobile Co-location Implementation Plan to this effect.

Dated this 11th day of December 2008



Paula Rebstock
Chair
Commerce Commission

APPENDIX A: MOBILE CO-LOCATION TERMS

Appendix A comprises the following documents:

- **Mobile Co-location General Terms**
 - **Schedule 1: Mobile Co-location Service Description**
 - **Schedule 2: Mobile Co-location Service Level Terms**
 - **Schedule 3: Mobile Co-location Operations Manual**
 - **Schedule 4: Mobile Co-location Access Terms**
 - **Schedule 5: Mobile Co-location Interference Management and Design**
- **Mobile Co-location Implementation Plan**

APPENDIX B: ELIGIBILITY OF ACCESS SEEKERS AND ACCESS PROVIDERS

B1 Under the Telecommunications Act 2001, the definitions of ‘access provider’ and ‘access seeker’ for the Mobile Co-location Service are:

Access provider: Every person who operates a cellular mobile telephone network

Access seeker: Any person who -
(a) operates, or is likely to operate, a cellular mobile telephone network; and
(b) seeks access to the service

Definition of cellular mobile telephone network

B2 The Commission has defined cellular mobile telephone network in the Mobile Co-location General Terms. This definition is set out as follows:

Cellular Mobile Telephone Network means a telecommunications network:

- (a) that is designed to enable:
 - (i) two-way communications between end-users; and
 - (ii) an end-user of the service that uses the network to use the service while moving continuously between places or when standing still; and
- (b) that has the following characteristics:
 - (i) the end-user equipment used in relation to the network has a wireless connection to the network;
 - (ii) the service area of the network is divided into a number of contiguous geographical radio coverage areas (known as **cells**) and each cell is served by an antenna and a base station, which transmit and receives signals to and from end-user equipment within that cell;
 - (iii) the service that uses the network is capable of re-using the radio frequencies in different cells within the service area; and
 - (iv) as the end-user equipment travels between adjacent cells, the service that uses the network uses intercell hand-over functions to:
 - a. determine in which cell the equipment is located; and
 - b. allow the transmit and receive signal connection to transfer from one base station to an adjacent base station when the end-user equipment moves out of that cell to an adjacent cell.

B3 The Commission has compiled an *indicative* list of the current technologies that it considers have the characteristics of a cellular mobile telephone network. These technologies include:

- GSM (Global System for Mobile communications (GSM: originally from Groupe Spécial Mobile);
- UMTS (3GPP) (Universal Mobile Telecommunications System);
- 3GPP2 (3rd Generation Partnership Project 2);
- Mobile WiMax (IEEE 802.16e) (Worldwide Interoperability for Microwave Access);

- iBurst (HC-SDMA) (High Capacity Spatial Division Multiple Access); and
 - PMR (Private Mobile Radio).
- B4 TeamTalk submitted that PMR is a very general term, and includes many technologies (such as P25, TETRA, MPT1327, DMR, Smartnet, EDACS, Bluesky, and Mototurbo). TeamTalk submitted that although some of these PMR technologies may fit the proposed definition of cellular mobile telephone network, in reality PMR services are radically different to a cellular service, both in scale and infrastructure, and should be removed from the list of technologies above.²⁰³
- B5 As noted in paragraphs 65 to 67 above, the Commission intends to assess each potential Access Provider on a case-by-case basis, and may use its discretion if a strict interpretation of the definition of cellular mobile telephone network result in an outcome that is inconsistent with the Act. Therefore, the Commission has retained PMR in the indicative list of technologies provided in paragraph B3.

Eligibility of Access Seekers and Access Providers as at the determination date

- B6 In order to determine those parties who are eligible as Access Seekers and Access Providers of the Mobile Co-location Service, the Commission has conducted an assessment of the parties that operate networks in New Zealand that utilise the technologies listed above. The Commission's assessment has been undertaken as at the date of this determination, and is outlined below:

Status of Vodafone New Zealand Limited as an Access Provider/eligible Access Seeker

- B7 Vodafone New Zealand Limited is currently operating a GSM/UMTS network. This Commission considers that this network complies with the definition of a cellular mobile telephone network as set out in paragraph B2.
- B8 Therefore, the Commission's view is that Vodafone is an Access Provider of the Mobile Co-location Service.

Status of Telecom New Zealand Limited as an Access Provider/eligible Access Seeker

- B9 Telecom New Zealand Limited is currently operating a UMTS/CDMA network. This Commission considers that this network complies with the definition of a cellular mobile telephone network as set out in paragraph B2.
- B10 Therefore, the Commission's view is that Telecom is an Access Provider of the Mobile Co-location Service.

Status of NZ Communications Limited as an Access Provider/eligible Access Seeker

- B11 NZ Communications Limited is currently operating a GSM network. This Commission considers that this network complies with the definition of a cellular mobile telephone network as set out in paragraph B2.

²⁰³ TeamTalk, *Submission on Draft Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites*, 20 August 2008, pp 1-2.

B12 Therefore, the Commission's view is that NZ Communications is an Access Provider of the Mobile Co-location Service.

Status of Woosh Wireless Limited as an Access Provider/eligible Access Seeker

B13 Woosh Wireless Limited is currently operating a TS-CDMA network. This Commission considers that this network complies with the definition of a cellular mobile telephone network as set out in paragraph B2.

B14 Therefore, the Commission's view is that Woosh Wireless Limited is an Access Provider of the Mobile Co-location Service.

Status of TeamTalk Limited as an Access Provider/eligible Access Seeker

B15 TeamTalk Limited is currently operating a APCO-25 network. In the draft STD, the Commission's view was that that this network complies with the definition of a cellular mobile telephone network as set out in paragraph B2.

B16 TeamTalk submitted that the APCO-25 technology does not provide any hand-over facility and, therefore, falls outside the definition of "cellular mobile telephone network".²⁰⁴

B17 The Commission agrees with this submission. Therefore, the Commission's view is that TeamTalk Limited is not currently an Access Provider of the Mobile Co-location Service.

²⁰⁴ TeamTalk, *Submission on Draft Standard Terms Determination for the specified service Co-location on cellular mobile transmission sites*, 20 August 2008, p 3.