



Kordia Limited

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

1. Introduction

- 1.1. Kordia Limited (*Kordia*) thanks the Commerce Commission (*Commission*) for its invitation to make this submission.
- 1.2. Kordia's contact people for the purposes of this submission for commercial and policy matters and for technical matters respectively are:

Susie Stone
General Manager Strategic Development
Kordia Group
PO Box 2495
AUCKLAND
Telephone: (09) 916 6513
Fax: (09) 916 6446
Email: susie.stone@kordia.co.nz

Ian Goodwin
Strategic Technology Manager
Kordia Limited
PO Box 98
WELLINGTON
Telephone: (04) 914 8032
Fax: (04) 914 8094
Email: ian.goodwin@kordia.co.nz

2. Background

- 2.1. Kordia's submissions are directed at responding to some of the issues raised by the Commission in its draft determination under s.30k of the Telecommunications Act 2001 (*Act*) dated 25 July 2008 (*Draft STD*) in the

specified service described as Co-location on Cellular Mobile Transmission Sites (*Mobile Co-location*).

3. References

- 3.1. All references to capitalised terms, not defined in this Submission are related to terms defined in the Draft STD.

4. Access Seekers and Access Providers

- 4.1. Kordia does not currently operate a *Cellular Mobile Telephone Network* as that term is defined in the Mobile Co-location General Terms (*General Terms*). Kordia notes the indicative list of the current technologies that the Commission considers have the characteristics of Cellular Mobile Telephone Network set out in paragraph B3 of Appendix B of the Draft STD. Kordia is not currently operating a Cellular Mobile Telephone Network using those technologies.
- 4.2. Kordia refers to the difference in the definitions of an *Access Provider* and an *Access Seeker*. An Access Provider has to operate a Cellular Mobile Telephone Network, whereas an Access Seeker is a person who operates or *is likely to operate* a Cellular Mobile Telephone Network.
- 4.3. Accordingly, if Kordia decides to roll out a Cellular Mobile Telephone Network, it would be eligible as an Access Seeker of the Mobile Co-location, before it is an Access Provider.
- 4.4. Kordia considers there is some ambiguity in the Mobile Co-Location Service description, as to how the service will apply to Kordia's network if Kordia becomes an Access Provider.

- 4.5. Kordia operates and maintains transmission infrastructure across New Zealand. It currently provides co-siting on commercial terms to operators of Cellular Mobile Telephone Networks.
- 4.6. If, for example, Kordia was to roll out a mobile WiMax network, that network would not necessarily use all the Relevant Facilities in Kordia's network currently used to co-site Access Providers of other Cellular Mobile Telephone Networks.
- 4.7. However, the definitions of *Building* and *Mast* in the Mobile Co-Location General Terms each refer to these Relevant Facilities being used in relation to **a Cellular Mobile Telephone Network**, not to the Access Provider's Cellular Mobile Telephone Network.
- 4.8. Consequently, Kordia is concerned that if it becomes an Access Provider, then by reason of the definitions of the *Building* and *Mast* in the Mobile Co-location General Terms as presently drafted, Kordia will have to provide for co-location to Access Seekers on sites that are used by Kordia's customers for a Cellular Mobile Telephone Network, when they are not actually part of Kordia's own Cellular Mobile Telephone Network.
- 4.9. Kordia submits that in those cases the Access Seeker, who will still have access to the relevant facilities under the Mobile Co-location Service, has to seek the specified service from the Access Provider who is the operator of the relevant Cellular Mobile Telephone Network rather than Kordia who is only the Access Provider's landlord in those circumstances.
- 4.10. Accordingly, the definitions of *Building* and *Mast* should be amended to refer to **a Cellular Mobile Telephone Network operated by the Access Provider**.

5. Service Description

- 5.1. In respect of *Utility Service* under clause 2 of Schedule 1, Kordia considers it needs to be clarified whether *power* (see clause 2.3.3) includes the supply of emergency back up power where emergency electricity generation equipment is available.

6. Access Provider Forecasting

- 6.1. At paragraph 40 of the Draft STD, the Commission states that:

Access Provider forecasts should not prevent an Access Seeker who is willing and able to co-locate immediately from gaining access to that space where this does not unreasonably interfere with the Access Provider's future use of that space in accordance with its forecast requirements.

- 6.2. Further, at paragraph 42 of the Draft STD, the Commission states 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 is subject of its forecast. When the Access Provider wishes to use that space, the Access Provider will give the Access Seeker 6 months' notice, and the Access Seeker will be required, at its own cost, to:

- Relocate its equipment on the Access Provider's *Mast* (if possible); or
- Remove its equipment from that Relevant Facility.

- 6.3. Kordia is concerned that by creating a *squatters' right*, as with other squatters' rights, in practice it will be difficult for the Access Provider to remove the incumbent Access Seeker when the Access Provider is ready to use its own Relevant Facilities as forecast.


- 6.4. Kordia recommends that clause 9.2.2 of Schedule 3 needs to provide that the relocation of the Access Seeker equipment on the Access Provider's Relevant Facility in accordance with the Mobile Co-location Terms has to occur within the 6 months' notice period, unless the relocation is delayed due to act or omission of the Access Provider.

7. Site Alterations

- 7.1. Kordia's principal concerns with the provisions of Part 6 the Implementation Plan in Schedule 3 of the Draft STD are:

5.1.1 That the factors listed in section 13.8.2 of the Third Schedule that can be taken into account by an Access Provider when processing an Application should include relevant requirements under the Civil Defence Emergency Management Act 2002 (*CDEMA*). All Access Providers operate a lifeline utility under Schedule 1, Part B of the *CDEMA*, because the Access Provider is *an entity that provides a telecommunications network (within the meaning of the Telecommunications Act 1987)*. By virtue of section 60(a) of the *CDEMA* every lifeline utility must ensure that it is able to function to the fullest possible extent, even though this may be at a reduced level, during and after an emergency. For that reason an Access Provider must be able to take its obligations under the *CDEMA* into account as a factor when considering an Application.

5.1.2 The Draft STD needs to make it clear that an Access Seeker may challenge a decision of an Access Provider rejecting an Application pursuant to section 13.8.1 of the Third Schedule. Kordia believes section 13 should be amended to allow the Access Seeker to dispute such a decision under the Dispute Resolution process in clause 36 of the General Terms, in the same way as is already provided, for



example, under section 23.3.5(a) of the Third Schedule, where an Access Provider rejects a Full Site Application made by an Access Seeker.

5.1.3 The Draft STD needs to have mechanisms to require all the Parties each to fully perform the obligations that they enter into as a result of the operation of the STD. Kordia has noted the terms of clause 2.2 of the General Terms but submits that it is not clear that the clause applies also to obligations of Parties arising out of specific procedures and processes, such as Project Plans and Necessary Work, to name but two examples. Kordia suggests that clause 2.2 of the General Terms be amended to remove this doubt.

5.1.4 Kordia notes the terms of clause 16 of the General Terms (Access Seeker's Liability) and the limitation and exclusion of liability of the Access Seeker that the clause provides for. However, Kordia considers that the rights of an Access Provider should be strengthened in the event of Default by an Access Seeker in fully performing its obligations in those situations where the Access Provider could as a result face significant damage or commercial disadvantage. The particular instance that concerns Kordia (there could well be others that should be addressed) is Default by an Access Seeker to complete a Project Plan under Part 5 of Schedule 3. In such an event Kordia considers that the Access Provider should be entitled in its discretion:

- (a) To complete the work or to remove the work and to reinstate the Relevant Facilities to their former condition, and in either case:

- (b) To recover the cost of such remedial action from the Access Seeker as liquidated damages, and
- (c) To be indemnified by the Access Seeker for these costs.

7.2. Kordia sets out below its proposed amendments to Schedule 3 and to the General Terms to give effect to the matters recorded in above, and to propose a few other minor wording changes.

8. Recommended Amendments to Part 6 of Schedule 3

8.1. Reword the opening sentence of section 13.8.2 of Schedule 3 to read as follows:

The Access Provider will take into account all relevant factors including but not limited to the following:

Explanation: The existing wording suggests that the list that follows it is not exhaustive, while the use of the words will take into account the following factors suggests that it is exhaustive. The proposed wording removes this confusion.

8.2. In section 13.8.2(g) of Schedule 3 insert the following after the Buildings Act 2004:

, the Civil Defence Emergency Management Act 2002

Explanation: This amendment would meet the concern noted in paragraph 7.1.1 of these Submissions.

8.3. Add the following as new section 13.8.3 of Schedule 3:

13.8.3 Where any Application is rejected by the Access Provider under section 13.8.1 the Access Seeker will be

able to dispute the rejection under the Dispute Resolution process in clause 36 of the Mobile Co-location General Terms.

Explanation: This amendment would meet the concern noted in paragraph 7.1.2 of these Submissions.

- 8.4. In the General Terms insert the following as clause 2.3 and renumber existing clause 2.3 as clause 2.4:

2.3 For the purposes of clause 2.2 the obligations of a Party will be deemed to include its obligations under any specified procedures or processes agreed to by that Party to another Party in the course of and for the purpose of giving effect to the Mobile Co-location Standard Terms Determination.

Explanation: This amendment would meet the concern noted in paragraph 7.1.3 of these Submissions.

- 8.5. In the General Terms insert the following as clause 34.8 and renumber existing clause 34.8 as clause 34.9:

34.8 In the event that an Access Provider has given Default Notice to an Access Seeker in respect of a Default by the Access Seeker in completing a Project Plan under clauses 23 and 24 of Schedule 3, upon expiry of the Default Notice the Access Provider may in its entire discretion complete the work described in the Project Plan or remove the work already done and restore the Relevant Facilities to their former condition immediately before the Project Plan was started and in either case recover the cost of such completion or restoration from the Access Seeker as liquidated damages.

Explanation: This amendment would meet the concern noted in paragraphs 7.1.4(a) and (b) of these Submissions.

- 8.6. In the General Terms insert the following words in the third line of clause 16.6 immediately after the words *as a direct result of:*

any action taken by the Access Provider in accordance with clause 34.8 in consequence of a Default by the Access Seeker or of

Explanation: This amendment would meet the concern noted in paragraph 7.1.4(c) of these Submissions.

9. Interference Management

- 9.1. Kordia broadly supports Schedule 5 of the Draft STD insofar as it provides a technical definition of the threshold for Unacceptable Performance Degradation. Kordia supports the principle of defining the static thresholds in sections 6.2.1(b) and (c) and the time varying thresholds in section 6.2.1(d).

- 9.2. Kordia acknowledges that the definition of static degradation is closely aligned with our previous submission on this topic, in that it refers to:

a total level of loss from the... ..Link Budget of more than 1.0 dB in either the uplink or the downlink budget;

- 9.3. However, because this definition leads to some uncertainty among mobile cellular engineers as to how the 1 dB is to be interpreted, clarification is required.

- 9.4. The uncertainty arises because there are differing views about which elements of the link budget should be included in the benchmark for degradation. In CDMA cellular systems "internal" interference (I_{int}) from

other user terminals belonging to the network, are generally included in the noise plus interference component of the link budget, and the level of this interference varies with traffic levels.

- 9.5. Kordia does not intend this internal interference power (I_{int}) to be included in determining the receiver noise floor increase that results from external interference (I_{ext}) and causes the total level of loss of the link budget, because that would allow a higher level of external interference than is intended when I_{int} is excluded from the analysis.
- 9.6. This clarification could either be achieved by suitable amendment to the wording of clauses 6.2.1(b) and (c), or by the addition of a footnote. Kordia suggests the following footnote be inserted to clauses 6.2.1(b) and 6.2.1(c):

() The 1 dB link budget degradation should be determined relative to the receiver noise floor N_{BS} such that -*

$$10 \log_{10} \left[\frac{N_{BS} + I_{ext}}{N_{BS}} \right] > 1dB$$

Hence:

$$10 \log_{10}(I_{ext}) > 10 \log_{10}(N_{BS}) - 6 \text{ dB}$$

where:

<i>Interference power from external sources:</i>	I_{ext} (W)
<i>Receiver noise floor:</i>	$N_{BS} = kTBF$ (W)
<i>Boltzmann's constant:</i>	$k = 1.38 * 10^{-23}$ (W/(Hz. ⁰ K))
<i>Receiver noise temperature:</i>	T (⁰ K)
<i>typically</i>	$T = 293$ (⁰ K)
<i>Receiver 3 dB bandwidth:</i>	B (Hz)

Noise figure: F

such that for CDMA Direct Spread macro BS: $10 \log_{10}(F)$
= 5 dB,
as stated in:

Report ITU-R M.2039 "Characteristics of terrestrial IMT-2000 systems for frequency sharing/interference analysis"; which references:
3GPP TS 25.101 v5.5.0 (2002-12) and 3GPP TR 25.951 v1.5.0 (2003-02).

- 9.7. Alternatively, if the Commission prefers to amend clauses 6.2.1(b) and (c), Kordia suggests the following wording:

6.2.1(b) *A total level of loss from the Access Provider's or Existing Co-locator's Link Budget of more than 1.0 dB in either the uplink budget or the downlink budget, where this loss is determined as a 1.0 dB rise in receiver noise floor comprising thermal noise and noise figure (i.e. $kTBF$), when external interference is included;*

6.2.1(c) *A total level of loss of more than 0.2 dB from either the uplink budget or the downlink budget of any Antenna solely dedicated to the provision of Emergency Services, where this loss is determined as a 0.2 dB rise in receiver noise floor comprising thermal noise and noise figure (i.e. $kTBF$), when external interference is included.*

10. Schedule 5 References to the Radiocommunications Act 1989

- 10.1. Clause 3.2 of Schedule 5 of the Draft STD states:

The Regulations do not provide for the way in which Interference should be managed where such Interference arises out of mobile co-location where equipment is transmitting within its licensed terms. Such Interference may cause Unacceptable Performance Degradation of Radiocommunications Services provided to End Users but the Regulations do not necessarily provide for dealing with this Interference (emphasis added).

- 10.2. Regulations in this context is defined as meaning both the Radiocommunications Act 1989 (RA '89) and Radiocommunications Regulations 2001.
- 10.3. Kordia submits that clause 3.2 of Schedule 5 above is incorrect as Part 12 of the RA '89 relates specifically to the issue of Interference (as defined in the RA '89) and sections 108 and 109 of the RA '89 expressly provide for the management of interference from lawful transmission of radio waves (including cellular mobile transmissions) under a registered spectrum licence or radio licence.
- 10.4. Kordia suggests that if clause 3.2 of Schedule 5 is to be retained, it should be amended as follows:

Management of Interference arising from use of the Relevant Facilities is a limit on access to the Mobile Co-location Service. While the Regulations do provide for management of Harmful Interference (as defined in the Regulations) caused by lawful transmission and reception, Interference from lawful transmission and reception arising in the context of co-location of Cellular Mobile Telephone Network transmission and reception equipment raises specific Interference issues critical to the Mobile Co-location Service

that the Regulations, due to their more general nature, do not expressly address.

- 10.5. Section 25A of the RA'89 provides that an Approved Radio Engineer issuing a certificate under s.25 must, before issuing a certificate, have regard to any relevant reference standards issued by the Secretary.
- 10.6. To ensure that there is not any inconsistency between certificates for a spectrum licence to permit transmissions from a co-located mobile site, and the interference management for the Mobile Co-location Service, Kordia suggests that the Commission refers Schedule 5 to the Chief Executive of the Ministry of Economic Development (i.e. the Secretary under the RA'89) for the issue of standards under the RA'89 for interference management in relation to mobile co-location.
- 10.7. Section 133 of the RA'89 provides that the Chief Executive of the MED may issue reference standards or specifications relating to the performance of any system for the effecting of radiocommunication, whether by transmission or reception, or both.

ENDS