

SECTION/CLAUSE of the DRAFT COMMERCE COMMISSION STD	COMMENT
<p>General Comments</p>	<p>Telecom generally supports the framework set out in the Interference Management and Design Document. However, Telecom has identified the following key issues that should be dealt with by the Commission:</p> <ul style="list-style-type: none"> • The Interference Management and Design Document does not protect third parties who do not operate a Cellular Mobile Telephone Network. Telecom has many third party co-locators operating from its Relevant Facilities who do not operate a Cellular Mobile Telephone Network. These parties should be protected from interference by Access Seekers. • The threshold loss to the Link Budget to be classified as Unacceptable Performance Degradation has been set too high. A level of 1.0 dB is inappropriate for Cellular Mobile Telephone Networks. It will result in coverage loss and reduced data speeds without any clear price benefits to end users. Telecom submits that 0.5 dB is the appropriate threshold. • Telecom agrees that Emergency Services should be protected by the Interference Management and Design Document. However, the Cellular Mobile Telephone Networks of Access Providers and Access Seekers provide access to Emergency Services for the public, particularly in areas where it is difficult to reach a fixed line telephone. Therefore, Access Providers and Access Seekers should be given the same protection as Emergency Services. In any case, a loss in the Link Budget of 0.2 dB is impracticable to measure. Therefore, a 0.5 dB threshold should apply to all parties. • Unacceptable Performance Degradation should be measured on a cumulative basis taking account of all Access Seekers co-locating on a Relevant Facility. Otherwise, the coverage loss and reduced data speeds caused by the threshold level of Unacceptable Performance Degradation will be multiplied by the number of Access Seekers co-locating at a Relevant Facility. <p>Telecom has also submitted improvements to various parts of the process for interference management, which are set out in more detail below.</p>
<p>1 Introduction</p>	
<p>2 Definitions and Interpretation</p>	<p>Clause 2.2</p> <p>The Commission has inserted a new clause 2.2 that deals with the application of the Interference Management and Design Document to third parties. This clause requires the Access Provider to use all reasonable commercial endeavours to ensure that third parties comply with the obligations in the Interference Management and Design Document.</p> <p>There are two types of co-locators on Relevant Facilities:</p> <ul style="list-style-type: none"> • third parties, who may or may not operate Cellular Mobile Telephone Networks; and • other Access Seekers who have already co-located on the Relevant Facility and who are not the current applicant for the Service. <p>This clause does not give third parties any of the protections under the Interference Management and Design Document and does not require other Access Seekers to comply with the obligations under the Interference Management and Design Document.</p> <p>Telecom submits that the Interference Management and Design Document should apply to all co-locators. In particular, the protections provided by the Interference Management and Design Document should extend to third parties, including those who do not operate a Cellular Mobile Telephone Network.</p>

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	<p>Telecom risks breaching its contracts with third party operators because of the STD and having no way to remedy that breach if third parties are not given this protection. This is inconsistent with the limits on access principles set out in the specification of the Service in the Telecommunications Act, which include "the interests of third parties who use the relevant facilities". Telecom proposes a change to the definition of Existing Co-locators so that this term covers both types of co-locators described above.</p> <p>Telecom also submits that the obligations contained in the Interference Management and Design Document should apply to all co-locators:</p> <ul style="list-style-type: none"> • Access Providers should be required to use reasonable efforts to ensure that third parties (who are not previous Access Seekers) fulfil all of the obligations under the Interference Management and Design Document; and • previous Access Seekers should be required to comply with all obligations under the Interference Management and Design Document as if they are the Access Provider. <p>These requirements will ensure that testing and interference management at the Relevant Facility is effective because it will include all relevant parties at that Relevant Facility.</p> <p>Telecom submits that the following clause to achieve this (assuming the Commission accepts Telecom's submission on the definition of Existing Co-locator):</p> <p style="padding-left: 40px;">"Where an Existing Co-locator is a previous Access Seeker at the Relevant Facility, it will fully participate in all aspects of this Interference Management and Design document as required. The Parties will use reasonable efforts to engage other Existing Co-locators to the same extent."</p> <p>Clause 2.3</p> <p><i>Antenna</i></p> <p>Telecom has proposed that the phrase "in a Cellular Mobile Telephone Network" should be removed from the definition of Antenna in the General Terms. This change to the General Terms is essential for the protection of third parties, including many Emergency Services, from interference caused by Access Seekers.</p> <p>Without these amendments the Performance Degradation criteria in section 6 will not apply to third parties who do not operate a Cellular Mobile Telephone Network. Many third parties, including the Police, do not operate Cellular Mobile Telephone Networks. This is inconsistent with the limits on access principles set out in the specification of the Service in the Telecommunications Act, which include "the interests of third parties who use the relevant facilities".</p> <p>Furthermore, an Access Provider will not be able to manage interference at a site even where it owes contractual obligations to third parties without this change. The only other method available to manage interference issues is the Radiocommunications Act 1989. This Act does not manage interference on a proactive basis. The Interference Management and Design Document is supposed to provide this proactive protection through appropriate RF design requirements, but will not do so if the definition of Antenna is limited by the phrase "in a Cellular Mobile Telephone Network".</p>

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	<p><i>Emergency Services</i></p> <p>The Commission has defined a new term "Emergency Services" to mean "Radiocommunication services utilised by the New Zealand Police, New Zealand Fire Service, National Rural Fire Authority, rural fire authorities, and hospital and health services".</p> <p>This definition will only apply to Emergency Services to the extent that Emergency Services operate a Cellular Mobile Telephone Network because of the definition of Radiocommunication (discussed below). This will exclude from the definition many life or death services provided by co-locators which are provided by way of other (non-cellular) radio services.</p> <p>In any case, Telecom submits that the networks of Access Providers and Access Seekers should be protected to the same extent as the networks of Emergency Services. The Emergency Services included within the definition are arbitrary and do not limit the protection provided to Emergency Services status to emergency situations. For example, civil defence is not included in the definition of Emergency Services.</p> <p>The Cellular Mobile Telephone Networks of Access Providers and Access Seekers also provide emergency services. These networks are an important means of communication for the public with emergency services and amongst emergency services' staff. This is particularly relevant in rural areas where it is more difficult to get fast physical access to the fixed line network in an emergency situation and, therefore, the Cellular Mobile Telephone Networks of Access Providers and Access Seekers are more likely to be used to contact emergency services.</p> <p>Therefore, Telecom submits that Cellular Mobile Telephone Networks should be provided with the same level of protection as Emergency Services. Emergency Services should be protected as an Existing Co-locator. Currently, the definition of Existing Co-locator does not protect other third parties such as the New Zealand Police. Telecom has proposed changes to this definition in order to provide this protection.</p> <p>Access Providers and Existing Co-locators should be given the same level of protection from Unacceptable Performance Degradation if the Commission wants to ensure that the provision of the Service does not result in risks to the life and safety of individuals given that the Cellular Mobile Telephone Networks of Access Providers provide access to, and communication between, emergency services.</p> <p>Telecom submits that the appropriate level of protection from Unacceptable Performance Degradation for all services (including Emergency Services) is a 0.5 dB loss in the Link Budget in either the uplink or downlink direction. The 0.2 dB loss suggested by the Commission is unworkable and impracticable. A 0.5 dB loss is practicable because it is the lowest point measurable that shows the interference occurring.</p> <p>This is particularly relevant to Relevant Facilities located in rural areas where an Access Provider's Cellular Mobile Telephone Network is more likely to be used for emergency services and losses in the Link Budget greater than 0.5 dB will result in coverage loss preventing End Users from calling emergency services from their mobile phones.</p> <p><i>Existing Co-locator</i></p> <p>The Commission has excluded the phrase "and any other third party" from the definition of Existing Co-locator. The definition of Existing Co-locators therefore excludes third parties who are not previous Access Seekers.</p> <p>The protections and processes in the Interference Management and Design document apply to the Access Provider, the Access Seeker and Existing Co-locators (ie other Access Seekers). Other parties co-locate on Telecom's Relevant Facilities. These parties include airways and local councils. As discussed above in Telecom's comments on the definition of Antenna, these parties do not operate Cellular Mobile Telephone Networks. They cannot become an Access Seeker as a result.</p> <p>Telecom submits that these parties should be subject to the processes, and benefit from the protections, in the Interference Management and Design Document. They provide valuable services to their customers and have entered into contracts with Access Providers that should not be adversely affected by the STD unnecessarily.</p>

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	<p>Therefore, Telecom submits 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."</p>
	<p>Outages The Commission has included a new definition for Outages. This definition refers to the proportion of dropped calls due to interference compared with the proportion of dropped calls in the absence of the interference.</p> <p>Outages is an important term in the Commission's Interference Management and Design Document because an incremental 5% increase in Outages in Telecommunications Services to End Users directly attributable to the incremental emissions of the Access Seeker is an example of Unacceptable Performance Degradation.</p> <p>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 submits that these variables should also be included within the threshold for Unacceptable Performance Degradation.</p> <p>Otherwise, interference that prevents calls from being set-up will not be considered Unacceptable Performance Degradation under sub-clause 6.2.1. This would make the dropped call measure valueless because calls cannot be dropped if they cannot be set-up in the first place.</p> <p>However, Telecom submits that these terms should be included in sub-clause 6.2.1(d) rather than the definition of Outages because Unacceptable Performance Degradation should be measured with reference to a decrease in total traffic carried and an increase in dropped calls and call set-up failures. Telecom has proposed a new sub-clause 6.2.1(d) to reflect these changes below. The definition of Outages can therefore be deleted.</p> <p>Furthermore, the term "Outages" is generally used within the telecommunications industry to identify instances where a site or equipment has a serious fault condition and is carrying little or no traffic. This term is defined in the General Terms in this way. The new meaning of Outage in the Interference Management and Design Document is confusing as a result. If the Commission requires this form of Performance Degradation to be specifically defined in the Interference Management and Design Document, then a more appropriate term would be "End User Disruption".</p> <p>Parties The Commission has defined Parties to mean "where the context requires, any Existing Co-locators". Telecom notes that the Commission has used both "Parties" and the phrase "Access Providers, Access Seekers and Existing Co-locators" throughout the Interference Management and Design Document. The Commission should either use the defined terms Parties (with the definition proposed above) or identify exactly who is intended to be caught by each clause (and delete the definition of Parties) so that the Interference Management and Design Document is consistent.</p> <p>As discussed above, the Commission should include third parties who do not operate a Cellular Mobile Telephone Network within the definition of Existing Co-locator to ensure that they are given the protection provided to the Access Provider and Access Seekers under the Interference Management and Design Document.</p>

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	<p><i>Radiocommunication</i></p> <p>The Commission has defined Radiocommunication to mean "the transmission or reception of signs, signals, writing, images, sounds or intelligence of any nature by radio waves as part of a Cellular Mobile Telephone Network". The phrase "as part of a Cellular Mobile Telephone Network" limits the definition of Radiocommunication and excludes services that are not offered as part of a Cellular Mobile Telephone Network from the Interference Management and Design Document.</p> <p>Other co-locators use radio services that are not connected to a Cellular Mobile Telephone Network. These other co-locators should have the benefit of protection from interference under the Interference Management and Design document. The Radiocommunications Act 1989 is the only other way for interference to be managed for the providers of radio services. This Act manages interference on a reactive basis. The Interference Management and Design Document was intended to provide proactive protection for all radiocommunications operators during the planning stage.</p> <p>Therefore, Telecom submits that the phrase "as part of a Cellular Mobile Telephone Network" should be removed from the definition of Radiocommunication. This definition would then be consistent with the definition used for Radiocommunication in the Radiocommunications Act.</p> <p>Telecom also submits that the phrase Radiocommunications Services should be defined and used in place of the phrase "Telecommunications Services" in the Interference Management and Design Document.</p> <p>Telecommunications Services are limited to goods, services, equipment, and facilities that enable or facilitate telecommunication. It does not include other goods, services, equipment and facilities that enable or facilitate radiocommunication. The phrase "Telecommunications Services" therefore excludes many services offered by third party co-locators at Relevant Facilities. These third party co-locators, and the services they provide, should be protected by the Interference Management and Design Document.</p> <p>Telecom proposes the following definition of Radiocommunications Services:</p> <p style="padding-left: 40px;">"Radiocommunications Services means any goods, services, equipment, and facilities that enable or facilitate the transmission or reception of signs, signals, writing, images, sounds, or intelligence of any nature by radio waves."</p> <p>This protects third parties who do not operate a Cellular Mobile Telephone Network from interference which may be caused by Access Seekers.</p> <p><i>Unavoidable Unacceptable Performance Degradation</i></p> <p>The Commission has defined a new term Unavoidable Unacceptable Performance Degradation to mean "Unacceptable Performance Degradation that cannot be avoided through the utilisation of co-location procedures or technologies, including Antenna Minimisation technologies or optimising the placement of Antennas".</p> <p>This term is used in clauses 9.4 and 9.5 where the Access Seeker has given notice that it is suffering Unacceptable Performance Degradation. The Access Provider and any Existing Co-locators are not required to agree to any solution which results in Unavoidable Unacceptable Performance Degradation when this notice has been given.</p> <p>Telecom submits that this term is unnecessary. An Access Provider, Access Seeker, or Existing Co-locator should not be required to accept solutions that result in Unacceptable Performance Degradation during the probation period. The Access Seeker should be responsible for avoiding any Unacceptable Performance Degradation that is caused by a proposed solution during the probation period. This is consistent with the purposes behind the probation period during which the site solution is still being tested and project closure has not been completed.</p>
3	Radiocommunications Act 1989
4	Scope

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<p>5 Objectives</p>	<p>Sub-clause 5.2.1(d)</p> <p>The Commission has amended sub-clause 5.2.1(d). The Commission's amendment prevents Access Providers from implementing solutions that will, or will be likely to, degrade the standard of existing Telecommunications Services to Customers or End Users beyond an acceptable level.</p> <p>Telecom supports the position that Access Providers should not be forced to implement changes that degrade the performance of their network as a result of co-location applications from the Access Seeker. However, this amended sub-clause will also prevent Access Providers from making changes that benefit network performance as a whole, but that adversely affects performance to a small number of End Users.</p> <p>Telecom regularly optimises its network. This optimisation aims to improve the network performance, but may have small negative effects on some End Users. For example, Telecom may tilt an antenna to provide improved coverage to a new sub-division or to reduce network interference levels. This may have a small negative impact on coverage for a few other houses. This sub-clause would prevent Telecom from making these network changes for the greater good.</p> <p>This standard proposed by the Commission does not allow Access Providers to operate their network. Furthermore, the Commission does not have the power under the Telecommunications Act to impose this standard on the operation of an Access Provider's network.</p> <p>Therefore, Telecom submits that sub-clause 5.2.1(d) should be amended to:</p> <p style="padding-left: 40px;">"reflect the principle that Access Providers shall not be required to implement solutions which will, or will be likely to, degrade the performance or standard of existing Telecommunications Radiocommunications Services to Customers or End Users beyond an acceptable level."</p>
<p>6 Unacceptable Performance Degradation</p>	<p>Clause 6.1</p> <p>The Commission has allowed for Antenna minimisation technologies to be imposed on the Access Provider.</p> <p>As discussed below, Telecom submits that Antenna minimisation technologies should not result in a breach of the Unacceptable Performance Degradation threshold in either the uplink or downlink budget.</p> <p>Telecom's previous submission on Vodafone's draft STP explained how antenna minimisation technologies, such as multiband cross-polarisation antennas, may impact coverage in some areas if each cellular system operating in different frequency bands (eg 850MHz and 2100MHz) requires optimised Antenna orientation to be directed in different directions. The assessment of Performance Degradation should therefore also include the impacts of sub-optimised Antenna gain.</p> <p>Therefore, Telecom submits that sub-clause 6.1.1 should be:</p> <p style="padding-left: 40px;">"Performance degradation in relation to the Mobile Co-location Service is a reduction in the level of quality of Radiocommunications service provided by the Access Provider and any Existing Co-locators to End Users and includes, but is not limited to, a rise in noise floor, loss of system gain, including sub-optimised antenna directions and effects of cross-polarisation technology, and losses suffered from electrical or physical causes (Performance Degradation)."</p>
	<p>Clause 6.2.1(b)</p> <p>The Commission has changed the total level of loss from the Access Provider's (and any Existing Co-locator's) Link Budget in either the uplink or downlink direction to 1.0 dB.</p> <p>Telecom noted in its submission on Vodafone's Standard Terms Proposal that interference from mobile co-location would have two distinct effects on an Access Provider's service:</p> <ul style="list-style-type: none"> • a decrease in the coverage area from each site for voice and low data speed services (ie only customers at the

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	<p>edge of the coverage would be affected); and</p> <ul style="list-style-type: none"> • a decrease in service quality of high speed broadband data services (such as CDMA-EVDO, UMTS-HSPA and GSM-EDGE etc) for all Customers in the coverage area. <p>Telecom notes that the Commission has only shown theoretical benefits from mobile co-location. On the other hand, Access Providers will suffer a very real loss of system performance and coverage as a result of mobile co-location. Any degradation of service has a significant economic impact. For example, it is very likely that End Users in some rural areas will lose coverage as a result of a loss in the Link Budget of 1.0 dB.</p> <p>As discussed above, Cellular Mobile Telephone Networks provide access to emergency services, particularly in rural areas. Loss of coverage will place people located in rural areas at risk of not being able to call the police, the ambulance or the fire brigade in an emergency. This has the potential to lead to deaths and serious injury that could otherwise be prevented. For example, many trampers take their mobile phones with them into the bush and many calls are made to search and rescue services when trampers get lost. The coverage reduction from allowing a loss to the Link Budget of 1.0 dB would put the lives of these people, and others, at risk.</p> <p>Telecom submits that Unacceptable Performance Degradation should not be greater than 0.5 dB for all co-location requests by Access Seekers because of the Performance Degradation in terms of coverage and data speed that any losses above this threshold would cause. A loss of 0.5 dB in the Link Budget provides an appropriate balance between End User benefits and Performance Degradation to the Access Provider's network. This balance will be lost if more than one Access Seeker co-locates on a Relevant Facility resulting in a loss greater than 0.5 dB in the Link Budget.</p> <p>For example, one Access Seeker may require the Access Provider to deploy co-location interference rejection filters to overcome interference issues while another Access Seeker may require the Access Provider to deploy multiband Antenna minimisation causing further loss in coverage. Individually each solution may be just less than the threshold for Unacceptable Performance Degradation, but together they could result in greater a loss of 1.0 dB in the Link Budget (or a higher loss if there are more than two Access Seekers). Such a loss in the Link Budget would have significant effects on an Access Provider's coverage and data speeds, which would prevent the Access Provider from competing with other Cellular Mobile Telephone Networks.</p> <p>Therefore, Telecom proposes the following amendments to clause 6.2.1(b):</p> <p style="padding-left: 40px;">"a total level of loss from the Access Provider's or Existing Co-locator's Link Budget of more than 0.54.0 0.51.0 dB in either the uplink budget or the downlink budget, including any losses caused by other existing Access Seekers".</p>

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	<p>Clause 6.2.1(c)</p> <p>The Commission has included a new sub-clause that applies solely to Emergency Services.</p> <p>Telecom supports Emergency Services receiving additional protection in the Interference Management and Design Document. However, Telecom believes that Cellular Mobile Telephone Networks also provide Emergency Services and the coverage provided by these services should also be protected. A total level of loss from the Link Budget of 0.5 dB in either the uplink or downlink budget provides an appropriate balance between protecting networks which provide Emergency Services and allowing mobile co-location.</p> <p>If the Commission does give Emergency Services special protection, Telecom notes that it is impracticable to measure an impact of 0.2 dB to system noise performance. There is little value from including protection which cannot be measured.</p> <p>Telecom submits that 0.5 dB is the lowest Link Budget loss that can be realistically measured. Therefore, all networks should benefit from this level of protection.</p> <p>Sub-clause 6.2.1(b) will apply to Emergency Services if Telecom's submission on the definition of Existing Co-locators is accepted. This will provide protection to Emergency Services. Therefore, clause 6.2.1(c) can be deleted.</p> <p>Clause 6.2.1(d)</p> <p>The Commission has inserted a new clause defining Unacceptable Performance Degradation as an increase in Outages due to interference.</p> <p>Telecom notes that Outages are defined as only including dropped calls, which is only one aspect of reduced service. Telecom has proposed changes to the definition of Outages to include other important service variables, such as call-set up failures and reductions in total traffic carried. In order to implement these changes, Telecom proposes the following drafting for clause 6.2.1(d):</p> <p style="padding-left: 40px;">"an incremental 5% increase in Outages in dropped calls or call set-up failures or a 1% decrease in total traffic carried in Radiocommunications Services to End Users directly attributable to the incremental emissions of the Access Seeker from the Relevant Facility. Any increase in Outages dropped calls or call set-up failures or decrease in total traffic carried is to be assessed..."</p> <p>Clause 6.2.2</p> <p>Telecom is pleased that the Commission has adopted the concept of allowing the Access Provider, Access Seeker and any Existing Co-locators to agree a higher Unacceptable Performance Degradation threshold for a particular site by inserting a new clause 6.2.2. However, Telecom believes that the Commission's drafting requires the agreement to change the Unacceptable Performance Degradation threshold applying to the whole site (ie all services operating from that site) rather than just the relevant Access Seeker service.</p> <p>Telecom submits that the agreement should only apply to the specific service offered at that site (ie an Access Seeker should be able to agree a higher threshold for Unacceptable Performance Degradation for its services without also requiring any Existing Co-locators or the Access Provider to change its thresholds for future Access Seekers).</p> <p>Therefore, Telecom submits that clause 6.2.2 should be amended to:</p> <p style="padding-left: 40px;">"The Parties may agree to a higher level of Performance Degradation than the definition of Unacceptable Performance Degradation set out in clause 6.2.1 in respect of that individual Site. When such an agreement is reached in writing between the Access Seeker and the Access Provider, that level will be the agreed "Unacceptable Performance Degradation" for the specific service operating from that Site."</p>
7 Design Principles	

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<p>8 Measurement and Testing</p>	<p>Clause 8.1.2</p> <p>Telecom submits that clause 8.1.2 should include an express requirement for the Access Seeker to test its own equipment and share the results with the Access Provider. This testing by the Access Seeker is implied by clauses 9.4.14 and 9.4.21. This obligation should be clearly stated to provide regulatory certainty.</p> <p>The Access Provider should be given this information because:</p> <ul style="list-style-type: none"> • Testing information will allow the Access Provider to improve its site designs for the benefit of both the Access Seeker and the Access Provider. In particular, the test results will allow the Access Provider to better assess the site designs for other sites where similar solutions are proposed. • The Access Seeker may have an incentive to avoid testing for any Unacceptable Performance Degradation suffered during the probation stage in order to reveal it once the probation period has finished and use the provisions for ongoing interference management to resolve it. The Access Provider would then be required to “share the pain” with the Access Seeker under the ongoing interference management provisions if these test results are not initially available. <p>There may be no obligation on the Access Seeker to share the results of the tests on its equipment without this express requirement. The Access Provider should be given an opportunity to assess these initial test results if the Access Seeker can require dispute resolution of interference issues after the probation period has been completed.</p> <p>Telecom also submits that the testing should include the testing of the equipment that will be used to fulfil the Access Provider's Forecast where possible. The Access Provider's Forecast may result in interference issues for the Access Seeker when deployed. The Access Seeker should not be able to prevent the deployment of the Access Provider's Forecast through claiming that it will suffer Unacceptable Performance Degradation as a result. The value of the Access Provider's Forecast is undermined if the Access Provider cannot guarantee that interference free space will be available. If this is the case, the Access Provider will be unable to deploy new technologies and deliver new services to End Users.</p> <p>Therefore, Telecom submits that clause 8.1.2 should be:</p> <p style="padding-left: 40px;">"Measurement and testing may be designed, implemented and performed at a test facility and on each of the Relevant Facilities where Access Seeker Equipment is installed in order to assess whether Unacceptable Performance Degradation is occurring to either the Access Providers' Equipment, the Access Provider's Equipment that will be used to fulfil the Access Provider's Forecast where possible, the Access Seekers' Equipment or to the equipment of the Existing Co-locators. The requirement to test at a test facility may be waived if the Parties agree. Measurement and testing shall be undertaken by the Access Seeker with the support of the Access Provider as required. This testing will be necessary when any of the Co-locating parties rearrange their equipment."</p> <p>Sub-clause 8.1.3</p> <p>Telecom submits that any co-location site solutions (including Antenna minimisation solutions) proposed by the Access Seeker which modify any existing RF equipment and configurations (and therefore interfere with Access Providers' technology and network optimisation choices) must not be forced on an Access Provider.</p> <p>Therefore, Telecom does not support sub-clause 8.1.3 of the Interference Management and Design Document.</p>

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	<p><i>End User impact</i></p> <p>Telecom considers that Access Providers and Existing Co-locators should be able to maintain existing services to Customers currently benefiting from those services. Designs that may be used to increase space on the mast will result in a reduction in RF equipment performance including a reduction in the uplink budget and downlink budget. The size of the performance reduction depends on factors that impact the correlation/decorrelation between the two diversity uplink signal paths, such as the propagation environment and the degree of multipath propagations due to reflections and non-line of sight propagation effects.</p> <p>A reduction in the downlink budget or uplink budget will result in a loss of coverage and a reduction of service to all Customers of high speed data services. Mobile phones will also have a shorter battery life as they transmit at high power to offset a lower uplink budget. These effects will harm the mobile Customers of Telecom and Existing Co-locators in a manner inconsistent with the purpose of the Telecommunications Act.</p> <p>Furthermore, an Access Seeker will choose to co-locate on only one Access Provider's Relevant Facilities in an area. This will degrade the coverage and service performance for the Access Provider that owns that Relevant Facility, and result in all other Access Providers in that area having a coverage and service performance advantage. Access Providers should not be required to provide antenna minimisation to Access Seekers or suffer link budget losses of greater than 0.5 dB because it will result in the Access Provider ceasing to deliver services comparable to other Access Providers in that area. This will reduce competition for customers in that area between Access Providers to the detriment of End Users.</p> <p><i>Network inefficiency</i></p> <p>Further, the designs that may be used to increase space on the mast may require the Access Provider's RF equipment for different frequencies to point in the same direction or to be placed lower on the mast. This reduces the coverage available from a Relevant Facility and may result in the Access Provider and Existing Co-locators having to install additional Radiocommunications equipment or to build more Relevant Facilities to recoup the coverage loss.</p> <p>The limitation on Telecom's ability to alter its network design will result in Telecom's network becoming inefficient as a direct result of the STD requirements if Antenna minimisation is included.</p> <p><i>Other options</i></p> <p>There are other options available to Access Seekers which avoid the problems identified above. As set out in the Mobile Co-location Operations Manual, mast replacement, revision and extension are realistic alternatives that do not have negative effects on existing Customers and the Access Provider's and Existing Co-locators' investment choices.</p> <p>The Access Seeker should not be able to reduce:</p> <ul style="list-style-type: none"> • the existing services provided to Customers by Access Providers and Existing Co-locators; and • the efficiency of the Access Provider's network, solely to reduce its own deployment costs at a proposed co-location site. For example, the Access Seeker are effectively degrading services provided to the Access Provider's existing Customers if it proposes Antenna minimisation solutions to reduce structural load on the co-location mast in order to avoid or defer the requirement for a mast replacement. <p>Furthermore, if the mast's structural capacity is at its maximum limit, and the Access Seeker is proposing antenna minimisation to avoid a mast replacement cost, then the mast will still be operating at maximum structural capacity and a mast replacement will still be required at a later stage when the Access Provider or other co-locator requires additional antennas on the mast. The Access Seeker is effectively using antenna minimisation to push the inevitable mast replacement cost on to the other co-locators at the Relevant Facility.</p>

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	<p><i>Other jurisdictions and previous STDs</i></p> <p>An approach that does not require Access Providers to modify their existing RF equipment or configuration is consistent with other jurisdictions. Telecom (and also our technology partner Alcatel-Lucent) has researched cellular co-location regulations introduced by regulatory authorities in several jurisdictions (Australia, USA, EU, UK, Germany, France, and Scandinavia) and have not found any regulations that require Access Providers to minimise existing Antenna infrastructure in order to reduce an Access Seeker's deployment costs.</p> <p>Finally, the Commission has not required Telecom to modify the deployment of its technology to the detriment of its Customers and the efficiency of its network in other Standard Terms Determinations and should not do so for the Mobile Co-location Service.</p> <p><i>Commercial offer</i></p> <p>Telecom will agree to certain types of antenna minimisation commercially. Telecom believes that this solution will provide a better balance between the interests of Access Seekers and End Users who will otherwise suffer a loss of coverage and a reduction in speed offered by their mobile broadband services.</p>
<p>9 Procedures for interference Management in Mobile Co-location</p>	<p>Sub-clause 9.1.3</p> <p>This clause requires a proposed standard solution to include the Standard Site Type to which the solution will apply. Telecom has submitted that Standard Site Types should be removed from the Operations Manual. However, it is still valuable for the Access Provider to receive information about the standard site RF configuration proposed as part of a solution. This will allow Access Providers to better assess the solution proposed by an Access Seeker. Therefore, the reference to Standard Site Types in clause 9.1.3 should be replaced with "standard site RF configuration".</p> <p>Sub-clause 9.1.4</p> <p>The Commission has deleted the original clause 10.1.4 from the Interference Management and Design Document. This clause stated that solutions must avoid interference, must not cause Unacceptable Performance Degradation and must comply with the Operations Manual.</p> <p>Consistent with Telecom's previous submissions, this clause should be included in the Interference Management and Design Document. It is important that solutions comply with these requirements in order to be considered solutions. For example, a "solution" that causes Unacceptable Performance Degradation is not a solution at all, but a problem that should be solved and never implemented in the first instance.</p> <p>Therefore, Telecom submits that the original clause 10.1.4 should be included with the phrase "Telecommunications Services" replaced by "Radiocommunications Services":</p> <p>"The solution must:</p> <ul style="list-style-type: none"> (a) Avoid Interference. (b) Not cause Unacceptable Performance Degradation to existing Telecommunications Radiocommunications Services or to Access Provider's Forecast Telecommunications Services at or on the Relevant Facilities. (c) Comply with the Mobile Co-Location Operations Manual."

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	<p>Sub-clause 9.1.6</p> <p>Telecom submits that the timeframe for Access Providers to provide the Access Seeker with a desktop study should be extended from 10 Working Days to 15 Working Days.</p> <p>Experience over the last two to three months has indicated that 10 Working Days will be unachievable due to the requirement to give Existing Co-locators a sufficient opportunity to provide the information required for the desktop study to be completed.</p> <p>Telecom believes that it is essential that the desktop study is correct because Antenna should not be turned on where there is interference. A timeframe of 15 Working Days to provide the desktop study should give the Access Provider sufficient time to gather and interpret the information required. However, this timeframe is still dependent on information being provided by Existing Co-locators.</p> <p>Clause 9.4 and clause 9.5</p> <p>Telecom is pleased that the Commission has accepted Telecom's submission that the Access Seeker should be required to give notice to the Access Provider and any Existing Co-locators if it experiences any Unacceptable Performance Degradation.</p> <p>However, Telecom submits that this requirement should be extended so that the Access Seeker is required to give notice to the Access Provider and any Existing Co-locators if it experiences any Performance Degradation. It is important for the Access Provider to have this information because it will allow the Access Provider to improve its site designs for the benefit of both the Access Seeker and Access Provider. In particular, the information will be valuable for the Access Provider when considering future applications proposing similar solutions.</p> <p>Telecom submits that the Access Provider should not be required to do anything if the Access Seeker only suffers Performance Degradation because the threshold for remedial action in the Interference Management and Design Document is Unacceptable Performance Degradation.</p> <p>The Access Provider and Existing Co-locators should not be required to agree to a solution that results in Unacceptable Performance Degradation to the Access Provider or Existing Co-locator where the Access Seeker has given notice that it is suffering Unacceptable Performance Degradation.</p> <p>The use of the term "Unavoidable Unacceptable Performance Degradation" does not add anything to this position because Unacceptable Performance Degradation which is avoidable is not Unacceptable Performance Degradation. This is consistent with the purposes of the probation period because at this point the Access Seeker's equipment has not been given final approval. Therefore, the Access Seeker should not be able to force the Access Provider or any Existing Co-locators to suffer Unacceptable Performance Degradation.</p> <p>Therefore, Telecom submits that the clause it originally included should replace the clause inserted by the Commission:</p> <p style="padding-left: 40px;">"If, [], the Access Seeker experiences Unacceptable Performance Degradation, it will give notice to the Access Provider and any Existing Co-locators.</p> <p style="padding-left: 40px;">Upon receipt of a Notice given under clause [], the Parties shall meet to discuss and agree a solution to the Performance Degradation provided that:</p>

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	<p>(a) if the Access Seeker suffers Performance Degradation, but not Unacceptable Performance Degradation, the Access Seeker shall not require the Access Provider or any Existing Co-locator to take any steps, and no issue arising from it may be referred to the dispute resolution process in section 39 of the Mobile Co-location General Terms. The Access Seeker must either accept such Performance Degradation or amend its solution through a new Application; and</p> <p>(b) if the Access Seeker suffers Unacceptable Performance Degradation, the Access Provider and any Existing Co-locators shall not be required to agree to any solution that causes Unacceptable Performance Degradation. The Access Seeker must either accept such Unacceptable Performance Degradation as described in clause 6.2.2, or amend its solution through a new Application "</p> <p>Telecom submits that the same changes should be made to clauses 9.4.15, 9.4.22, 9.5.15, 9.5.20, 9.5.25, 9.5.30, 9.5.35 and 9.5.40.</p>
<p>10 Protocol for Ongoing Interference Management</p>	<p>Sub-clauses 10.1.5 and 10.2.4</p> <p>Sub-clauses 10.1.5 and 10.2.4 provide for dispute resolution for ongoing interference management.</p> <p>Telecom submits that the expert should consider all of the principles of the Interference Management and Design Document and not just those principles contained in clause 5.2 (as suggested by sub-clause 10.1.5). The expert's consideration will be more balanced as a result of this requirement.</p> <p>For example on the current drafting, there is no requirement for the expert to consider the design principles set out in section 7. The expert could therefore impose a solution that is inconsistent with those principles. Such a solution would be inconsistent with Interference Management and Design Document, but not the principles in clause 5.2.</p>
<p>11 Expansion or Modification of Access Seeker Equipment</p>	
<p>Licensing</p>	<p>Telecom notes that the Commission has deleted what was section 13 of the Interference Management and Design Document.</p> <p>The Radiocommunications Act prevents a licence being granted if it would result in interference to any other licence holder. An applicant for a licence under the Radiocommunications Act is not required to have any ability to use the licence at a particular location.</p> <p>Section 13 prevented an Access Seeker from obtaining a new spectrum licence, modifying a new spectrum licence or applying for a radio licence at a Relevant Facility where that licence would result in the Access Provider being unable to deploy its Forecast.</p> <p>The Access Provider will be unable to deploy the new technology it has forecast if the Access Seeker already holds a licence that the Access Provider's new technology would interfere with. Therefore, Access Seekers have an opportunity to game the system and prevent Access Providers from deploying their forecasts if section 13 of Vodafone's STP is deleted. This is not in the interests of End Users who will not be able to access new technology as it becomes available to the Access Provider.</p> <p>Therefore, Telecom submits that section 13 from Vodafone's STP should be included in the Interference Management and Design Document. This section should also include a reference to "technical compatibility measures" as agreed in the TCF.</p>