



Ultrafast Fibre Input Services Wholesale Services Agreement

Input Central Office and POI Co-Location Service
Operations Manual

TABLE OF CONTENTS

PART 1 - DOCUMENT INFORMATION	3
PART 2 – FORECASTING	7
PART 3 – PROVISIONING	9
PART 4 - TENURE	19
PART 5 - BILLING	22
PART 6 –TIE CABLE INSTALLATION	23
PART 7 – CO-LOCATION SERVICE AREAS	26
PART 8 - PROBLEM MANAGEMENT	31
PART 9 – FIBRE DIVERSITY	34
PART 10 – OUTAGES & WORKING ON LFC NETWORK	35
PART 11 – SECURITY AND ACCREDITATION	41
PART 12 – OPERATIONAL READINESS PROGRAMME	44
APPENDIX A – GLOSSARY	47
APPENDIX B - ESCALATION PROTOCOL	48
APPENDIX C - FORECASTING SPREADSHEET	49
APPENDIX D - DIAGRAM	50
APPENDIX E - OPTICAL FIBRE SPECIFICATION	51
APPENDIX F - CANDIDATE POI AND CENTRAL OFFICES	52
APPENDIX G - LFC CONTACT DETAILS	53

PART 1 - DOCUMENT INFORMATION

1. Introduction

- 1.1 This Input Central Office and POI Co-location Service Operations Manual (**Manual**) is part of the Input Services WSA and sets out the operational processes and procedures for supply of the Input Central Office and POI Co-location Service.
- 1.2 This Manual should be read in conjunction with the other documents which make up **the Input Services Wholesale Services Agreement (Input Services WSA)**, in particular the Input Services WSA General Terms.
- 1.3 This Manual may be changed in accordance with the change mechanism set out in clause 24 of the Input Services WSA General Terms.
- 1.4 The LFC will make the current version of this Manual available on the LFC website accessible by the Access Seeker.
- 1.5 References to Service Level Terms are references to the Input Services Service Level Terms for the Input Central Office and POI Co-location Service.
- 1.6 References to clauses or sections are references to clauses or sections in this Manual unless expressly provided otherwise. The Glossary (Appendix A) sets out definitions for terms contained in this Manual that are not defined in the Input Services WSA General Terms. Otherwise, the definitions set out in the Input Services WSA General Terms apply.

2. People and Contact Details

- 2.1 Immediately following the issue of the first Input Services Service Request for an Input Central Office and POI Co-location Service by the Access Seeker, the Access Seeker and the LFC must provide each other with the people and contact details set out in clause 2.2. Any change to the people or contact details must be advised in writing to the other party's principal point of contact. All people and contact details will remain valid until a party has advised the other in writing of a change (and provided an updated list of people and contact details).

2.2 People and Contact Details:

Contact and detail required	Purpose
Both parties provide principal point of contact for Input Central Office and POI Co-location Service (which must include the principal point of contact's email address, mobile and work telephone numbers).	This is the person responsible for the overall relationship between the parties with respect to the Input Central Office and POI Co-location Service. For the LFC this will usually be the Provisioning Manager for the relevant Access Seeker.
Both parties provide Co-location Project Manager (which must include the Co-location Project Manager's email address, mobile and work telephone numbers).	This is the person responsible for project delivery of the Input Central Office and POI Co-location Service.
The LFC only provides Service Delivery Manager (which must include the Service Delivery Manager's email address, mobile and work telephone numbers).	This is the person responsible for service delivery of the Input Central Office and POI Co-location Service to the Access Seeker.

Contact and detail required	Purpose
The LFC only provides Provisioning Manager (which must include the Provisioning Manager's email address, mobile and work telephone numbers..	This is the person responsible for the provisioning of the Input Central Office and POI Co-location Service to the Access Seeker.
The LFC only provides email address for submission of Forecasts.	This is the email address to which the Access Seeker must send Forecasts.
Access Seeker only provides Provisioning and Forecasting Manager (which must include the Provisioning and Forecasting Manager's email address, mobile and work telephone numbers).	This is the Access Seeker's counterpart to the LFC Provisioning Manager.
Access Seeker only provides names and email addresses of one or two people to become OSS/BSS user administrators.	These people will manage the creating and disabling of Access Seeker staff accounts to access the OSS/BSS and OSS/BSS websites.
Access Seeker only provides people who are authorised to download eBill files.	These are the people who will be set up with access to the LFC's secure web portal from which the Access Seeker's eBills can be viewed and downloaded.
Access Seeker only provides people who are authorised to download the Input Services Price List file.	These are the people who will be set up with access to the LFC's secure web portal where the Input Services Price List file can be viewed and downloaded.
Access Seeker only provides Input Services Service Requests confirmation email address.	This is the email address to which the LFC will send confirmation of Input Services Service Requests in cases where the Access Seeker has submitted a provisioning request via email.
The LFC only provides fault reporting contact details (which must include a fault reporting service number).	These are the contact details the Access Seeker must use for the reporting of faults in instances where the LFC has advised that OSS/BSS is unavailable under clause 34.5 below.
The LFC only provides business continuity email address.	This is the email address to send forms to under clause 7.20 to 7.23
The LFC only provides billing team email address.	This is the email address to which the Access Seeker will send billing queries under clause 19.7.
Access Seeker only provides name, email address, mobile and work telephone number of person the LFC should respond to for billing queries.	This is the email address to which the LFC will respond in relation to billing queries.
Access Seeker only provides contact for faults (which must include a name, email address and mobile and work telephone numbers).	This is the contact the LFC will deal with in respect of faults.
Access Seeker only provides contact for Service Level and other performance reports generated by the LFC (which must include a name, email address and mobile and work telephone numbers).	This is the contact the LFC will send reports to.

3. Technical Manuals and User Guides

- 3.1 This Manual refers to various technical manuals (including published New Zealand and international standards) and user guides that contain technical and procedural detail. Such

reference is necessary for both the Access Seeker and the LFC so that:

- 3.1.1 uniform standards of best practice are set;
- 3.1.2 the performance of the LFC's Network can be maintained;
- 3.1.3 the health and safety of the Access Seeker's and the LFC's employees, contractors and other agents can be protected;
- 3.1.4 systems are in place for the management of outages, faults and any work the Access Seeker or the LFC need to undertake; and
- 3.1.5 the Access Seeker's and the LFC's employees, contractors and other agents have access to uniform technical instructions.

3.2 To the extent that this Manual creates any obligation to comply with a technical manual or user guide, the Access Seeker and the LFC must:

- 3.2.1 apply the technical manual or user guide under the terms of the Input Services WSA in good faith;
- 3.2.2 interpret the technical manual or user guide consistently with the terms of the Input Services WSA; and
- 3.2.3 comply with the technical and/or procedural detail the technical manual or user guide contains.

3.3 Electronic copies of all the relevant LFC technical manuals and user guides will be made available to the Access Seeker via the LFC website as soon as practicable after the issue of the first Input Services Service Request for an Input Central Office and POI Co-location Service by the Access Seeker or following an earlier request from the Access Seeker. New Zealand and international standards are available from appropriate suppliers in New Zealand and around the world.

4. Good Faith and Dispute Resolution

4.1 The parties will deal with each other in good faith in relation to this Manual. The parties will act co-operatively and in good faith to facilitate the processes and procedures required for supply of the Input Central Office and POI Co-location Service.

4.2 Any dispute, question or difference that arises between the parties must be dealt with in accordance with the escalation protocol in Appendix B. The parties must use all reasonable endeavours to resolve the issue in this way before giving a notice under clause 20.2 of the Input Services WSA General Terms.

5. Prerequisites

5.1 In addition to the commercial prerequisites set out in clause 2.2 in the Input Services WSA General Terms, the Access Seeker must satisfy the following operational prerequisites in relation to the Input Central Office and POI Co-location Service:

- 5.1.1 execution of the Input Services WSA;
- 5.1.2 set up of the LFC OSS/BSS so Input Services Service Requests can be placed;
- 5.1.3 Access Seeker staff trained in use of OSS/BSS to place and track Input Services Service Requests and faults; and
- 5.1.4 place a forecast of expected demand.

- 5.2 The Access Seeker and the LFC may enter into a non-disclosure agreement covering discussions prior to the Access Seeker placing an Input Services Service Request for the Input Central Office and POI Co-location Service (but neither the LFC nor the Access Seeker will be under any obligation to do so).
- 5.3 The Access Seeker Operational Readiness Process in Part 12 will be followed for the set-up of a new Access Seeker involving the establishment of commercial relationships, OSS/BSS interfaces and, if required, co-location, interconnection links and layer two interoperability.

PART 2 – FORECASTING

6. Access Seeker Forecasting

Introduction

- 6.1 This section 6 provides for a rolling monthly forecast by each Access Seeker, through the completion and submission to the LFC of Forecasting Reports in accordance with clause 11 of the Input Services WSA General Terms and as further described in this section 6.
- 6.2 The Access Seeker must use all reasonable endeavours to provide the LFC with accurate Forecasting Reports.
- 6.3 The Access Seeker's Forecasting Reports are Confidential Information for the purposes of clause 15 of the Input Services WSA General Terms.

Forecasting Reports

- 6.4 Within the period of 30 Business Days preceding the Month End, but no less than 22 Business days prior to Month End, the Access Seeker will submit to the LFC a Forecasting Report, in the form prescribed by the LFC from time to time (a sample is attached as Appendix C).
- 6.5 Each Forecasting Report is to set out, for at least each of the 6 calendar months following Month End, the Access Seeker's forecast for use of Input Central Office and POI Co-Location Service by reference to each applicable Input Central Office and POI Co-location Service location. Each Forecast must include demand for Footprints at new Central Offices and changes to Footprints at Central Offices where the Access Seeker has existing Footprints. The Access Seeker can optionally provide a Forecasting Report for an additional 6 months (i.e. months 7 to 12) which will be treated as indicative by the LFC.
- 6.6 The relinquishment of any Footprints (i.e. a reduction of the space supplied to the Access Seeker as part of the Input Central Office and POI Co-location Service) must be included in the Access Seeker's Co-location Forecasting Report as a change to existing Footprints.
- 6.7 The LFC will not commence any build of Footprints or changes to existing Footprints until an Input Services Service Order is placed.

Submission of Forecasting Reports

- 6.8 The Access Seeker will submit all Forecasting Reports to the LFC:
 - 6.8.1 in the manner advised by the LFC from time to time;
 - 6.8.2 using the template prescribed by the LFC, which must be completed in full by the Access Seeker (including the date that the Forecasting Report is submitted to the LFC); and
 - 6.8.3 by the date specified in paragraph 6.4.
- 6.9 The LFC may make a reasonable request that the Access Seeker provide additional information to the LFC in support of a Forecasting Report already provided. Following receipt of such a request, the Access Seeker will prepare the requested information with reasonable care and provide it within a reasonable period.

Accuracy of forecasting

- 6.10 If an Input Services Service Request that was not forecast in a Forecasting Report (or was forecast later than required in this Manual) is made by the Access Seeker then the LFC will make reasonable endeavours to complete the Input Services Service Order but no Service Levels will apply.

PART 3 – PROVISIONING

7. The LFC OSS/BSS System

- 7.1 The LFC OSS/BSS allows the Access Seeker to log on to a secure site for the placing and monitoring of Input Services Service Requests with the LFC.
- 7.2 The LFC may choose to use an email ordering system for the processing of Input Services Service Requests for the Input Central Office and POI Co-location Service instead of the OSS/BSS system. In this manual the email ordering process is described as the OSS/BSS business continuity process.
- 7.3 Until otherwise notified by the LFC, all Input Services Service Requests for the Input Central Office and POI Co-location Service are to be placed using email. Any Input Services Service Requests that the Access Seeker attempts to place by other means (for example by fax) will be invalid and may be disregarded by the LFC. The LFC will use all reasonable endeavours to notify the Access Seeker if such invalid Input Services Service Requests have been received.
- 7.4 The LFC OSS/BSS allows the Access Seeker to:
- 7.4.1 submit and track the status of Input Services Service Requests and Input Services Service Orders; and
 - 7.4.2 update existing Input Services Service Requests (up to the time they are accepted and become Input Services Service Orders).
- 7.5 Access Seekers requesting project management of multiple Input Services Service Orders must contact their Service Delivery Manager to agree the date of the scheduled work. Project management of multiple coordinated Input Services Service Orders will be charged for by the LFC in accordance with the Input Services Price List.

B2B

- 7.6 If the LFC has chosen to use the OSS/BSS ordering process the Access Seeker can choose to directly integrate its systems with OSS/BSS via the OSS/BSS Business to Business Web Services Interface (**B2B**). If the Access Seeker is interested in B2B it can contact its LFC account manager for documentation describing the development required to interact with B2B. An integration access agreement is required to be executed prior to migrating to a production instance.

Training and Support

- 7.7 The LFC will provide reasonable initial set up training on both email ordering and OSS/BSS as part of the operational readiness process detailed in clause 12 below.

Access to OSS/BSS

- 7.8 The Access Seeker will provide the LFC with the names of one to five people to become OSS/BSS user administrators. These people will then manage the creating and disabling of Access Seeker staff accounts to access OSS/BSS.
- 7.9 On request from the Access Seeker, the LFC will reset, disable or alter the user administrator accounts.
- 7.10 Subject to this clause 7.10 the LFC may restrict or prohibit access to OSS/BSS if any of the Access Seeker's staff or systems:
- 7.10.1 perform malicious or unintentional actions that damage or may potentially damage OSS/BSS;

7.10.2 use OSS/BSS in an unauthorised manner or in such a way that causes or may cause material performance issues; or

7.10.3 use OSS/BSS in an unauthorised manner or in such a way to gain information they have no lawful right to access,

provided that the LFC will restrict or prohibit access to the minimum extent practicable to protect OSS/BSS and any related systems.

7.11 The LFC must use all reasonable endeavours to provide the Access Seeker with reasonable prior notice of such restrictions or prohibitions. Where this is not practicable in the circumstances, the LFC will give the Access Seeker notice of the restriction or prohibition as soon as practicable after the event.

Additional Functionality or Enhancements to OSS/BSS

7.12 The LFC will not be responsible for any costs associated with integration of the Access Seeker's own systems to the OSS/BSS solution provided by the LFC. OSS/BSS will be delivered in two stages: interim solution and strategic solution. For the interim solution, in the interests of flexibility while industry standards are being achieved, Access Seekers integrating with the OSS/BSS will be consulted independently on their ability to change to accommodate new versions of software and a release schedule will be agreed that is acceptable to the parties involved. For the strategic solution, implemented with the benefit of industry standards that will be agreed and published, further changes to the OSS/BSS will be managed against an approximately 90 day release cycle. Support will be provided to the current release and up to three previous releases, provided that, at any point in time, no version that was replaced more than 12 months previously will be supported. Access Seekers will be given 90 days' written notice of any change that will prevent their use of the next release version.

7.13 The Access Seeker will utilise the additional functionalities or enhancements to OSS/BSS as notified by the LFC from the date specified in the LFC's notice (at the latest).

7.14 The Access Seeker is responsible for ensuring that its own systems are configured in accordance with its use of OSS/BSS and comply with the requirements in the LFC Web Services and the OSS/BSS User Guide. This information can be obtained from the LFC.

OSS/BSS Costs

7.15 The LFC will be solely responsible for the LFC's costs of designing and developing OSS/BSS, including any modifications and enhancements.

7.16 Access Seekers will be solely responsible for the costs of modifying their systems and processes to interface with OSS/BSS and B2B and for participating in the consultation and implementation process.

Terms of Use

7.17 The Access Seeker must only use OSS/BSS for purposes authorised by the LFC.

7.18 The LFC will use all reasonable endeavours to ensure that OSS/BSS is available to Access Seekers 24 hours a day, 7 days a week.

7.19 The LFC must take all reasonable steps to prevent the introduction of viruses or other destructive features to OSS/BSS, but the LFC does not guarantee that it is free of such viruses or other destructive features.

Business Continuity/Email Ordering Process

- 7.20 If the LFC advises the Access Seeker to use email ordering or if the OSS/BSS which is normally used is unavailable, the Access Seeker may submit provisioning requests by emailing the relevant form to the LFC as outlined below.
- 7.21 The LFC will make the following business continuity forms available to the Access Seeker for either business continuity or BAU use as applicable:
- 7.21.1 Input Co-location Service Space form;
 - 7.21.2 Tie Cable Installation form; and
 - 7.21.3 Input Central Office and POI Co-location Service relinquishment form.
- 7.22 All business continuity (or email order) forms submitted in accordance with this clause should come from a generic mailbox. This mailbox must include the Access Seeker's name in the email subject line as below:
- [Input Central Office and POI Co-location Service Form Name] - [Access Seeker Name] - [Access Seeker reference number]**
- 7.23 Once completed, business continuity (or email order) forms must be sent to the business continuity email address advised by the LFC in accordance with Appendix G.

8. Input Services Service Requests Processing

Input Services Service Request types

- 8.1 The following types of Input Services Service Requests may be submitted using either the relevant web form in OSS/BSS or by email as outlined in clauses 7.20 to 7.23:
- 8.1.1 construction form;
 - 8.1.2 Tie Cable Installation form; and
 - 8.1.3 Input Central Office and POI Co-location Service relinquishment form.
- 8.2 These Input Services Service Requests will be processed as outlined below.
- 8.2.1 For each Input Services Service Request the Access Seeker must complete all of the fields on the relevant form that are marked as mandatory.
 - 8.2.2 The LFC will acknowledge receipt of each Input Services Service Request.
 - 8.2.3 The process in this Manual is an express variation to the formation of an Input Services Service Order as contemplated by clause 4.4 of the Input Services WSA General Terms.

Business Hours

- 8.3 Input Services Service Requests will only be processed by the LFC during Business Hours except where explicitly required by the Service Level Terms.
- 8.4 All Input Services Service Requests lodged outside of Business Hours on any Business Day will be deemed to have been received in the first Business Hour on the next Business Day and Service Levels will be calculated accordingly.

Input Services Service Request Validation

- 8.5 An Input Services Service Request will be deemed invalid and may be rejected by the LFC if:
- 8.5.1 it is not submitted in accordance with this Manual;
 - 8.5.2 one or more of the rejection criteria apply (a list of which will be available on the LFC website); or
 - 8.5.3 the Access Seeker does not have capability at the required Handover Point to access and interconnect with the Input Central Office and POI Co-location Service (whether by co locating their equipment at the Central Office or otherwise).
- 8.6 The LFC will perform a validation check of each Input Services Service Request that it receives. That validation check will determine whether the Input Services Service Request complies with the requirements of clause 8.5.
- 8.7 If an Input Services Service Request is rejected, the LFC will advise the Access Seeker of that rejection and provide the Access Seeker with the applicable rejection reason.
- 8.8 The LFC will waive immaterial irregularities and process Input Services Service Requests where the intention is unambiguous. Examples of such irregularities include:
- 8.8.1 use of different conjunctions (e.g. '&' instead of 'and');
 - 8.8.2 improper application or omission of apostrophes;
 - 8.8.3 variations in letter case;
 - 8.8.4 use of initials instead of first names, or vice versa; and
 - 8.8.5 names where letters have been accidentally transposed but the meaning is still clear (e.g. Dominoin = Dominion).

Service Start Date

- 8.9 If an Input Services Service Request is accepted and becomes an Input Services Service Order, the LFC will either:
- 8.9.1 advise the Access Seeker of an expected Service Start Date, (where applicable for the type of Input Services Service Order involved);
 - 8.9.2 confirm with the Access Seeker the expected Service Start Date is the date they have requested; or
 - 8.9.3 where there are infrastructure capacity constraints, advise the Access Seeker the Input Services Service Order is a 'waiter' and provide an approximate Service Start Date. The existence of an infrastructure constraint does not affect the operation of the Service Levels as set out in the Service Level Terms. When infrastructure becomes available the Access Seeker will be advised of an expected Service Start Date.
- 8.10 If the Service Start Date agreed between the LFC and the Access Seeker in clause 8.9 is outside the standard lead-time applicable to the type of Input Services Service Order involved, this does not constitute a failure to meet the standard lead-time Service Levels. Completion of the Input Services Service Request by the LFC on the Service Start Date agreed between the LFC and the Access Seeker will not constitute a failure to meet the Service Level for meeting the expected Service Start Date in the Service Level Terms.

- 8.11 The LFC will use all reasonable endeavours to meet the notified expected Service Start Date as provided in clause 8.9.1.
- 8.12 Where the LFC becomes aware that it will be unable to meet the expected Service Start Date notified under clause 8.9.1, the LFC will advise the Access Seeker of a revised expected Service Start Date. In that situation the Service Levels in the Service Level Terms will continue to apply to the original notified expected Service Start Date, rather than the revised expected Service Start Date.
- 8.13 If the Access Seeker changes an existing Input Services Service Request or Input Services Service Order:
- 8.13.1 the LFC will notify the Access Seeker of a revised expected Service Start Date (where applicable to the type of Input Services Service Order involved); and
 - 8.13.2 all of the relevant Service Levels for that Input Services Service Order, as defined in the Service Level Terms, will be restarted and measured as from the revised Service Start Date.

Completion of an Input Services Service Order

- 8.14 The LFC will provide the Access Seeker with confirmation that provisioning of an Input Services Service Order has been completed which will include the FSL.
- 8.15 Input Services Service Order confirmations submitted to the Access Seeker outside of Business Hours will be deemed to have been received by the Access Seeker at the beginning of the first Business Hour of the following Business Day.

Charges

- 8.16 Charges for all the transactions, processes and services referred to in this section are set out in the Input Services Price List. Charges may only be made for valid Input Services Service Orders following the validation provided for in clause 8.6.

9. Audits

- 9.1 The Access Seeker may request the LFC to undertake an audit to assess the capacity of any Central Office for the Central Office and POI Co-location Service and the LFC will undertake such an audit.
- 9.2 Any request for an audit must be made using OSS/BSS or email.
- 9.3 A site audit is only current as at the day it is supplied to the Access Seeker.

Information returned

- 9.4 The information returned by OSS/BSS or email may include:
- 9.4.1 information on the capacity of support infrastructure installed and proposed;
 - 9.4.2 an estimate of the time taken to provision a Footprint in that exchange;
 - 9.4.3 details on cable routes and distances from the Footprints to the OFDF;
 - 9.4.4 information on the presence or usage of the site by other Access Seekers being supplied with the Input Central Office and POI Co-location Service will not be included or made available.

10. First come, first served

- 10.1 Space on the OFDF to terminate Tie Cables will be allocated on a "first come, first served" basis.
- 10.2 Input Services Service Orders requiring LFC Build will be met by the LFC on a "first come, first served" basis.
- 10.3 Existing Footprints will be allocated on a "first come, first served" basis.
- 10.4 When the LFC launches a point to multi-point dark fibre service, priority for Footprint allocation will be given to those Access Seekers wishing to buy Footprints to support that service.

11. "Use it or Lose it"

- 11.1 Under the "use it or lose it" rule, if the Access Seeker has placed an Input Services Service Request for a Footprint that it has not occupied and space restrictions at the relevant Central Office become high, then LFC will give three months' notice to the Access Seeker to start using the Footprint. If the Access Seeker does not start using the Footprint within three months of receiving notice, it will lose the Footprint and the LFC may re-allocate it. The Access Seeker is "using" a Footprint if it has installed a rack or cabinet housing operational equipment (that is, equipment able to function or be used for the purpose of providing access to, and interconnection with, the LFC Network).
- 11.2 In the event that the Access Seeker believes that the "use it or lose it" rule has been incorrectly applied, it may follow the dispute resolution procedure under clause 20 of the Input Services WSA General Terms.

Priority for Space

- 11.3 The LFC will have priority for the use of space in the Central Office to house equipment supporting the LFC's other services, power and the environmental support of Access Seeker Equipment.
- 11.4 Where there is a space shortage that cannot be addressed by the "use it or lose it" rule and the unbundling of the layer one point to multi-point service has occurred, priority will be given to Access Seekers requesting Footprints for interconnection with the layer one point to multi-point fibre network.

12. Quote

Overview

- 12.1 The LFC will respond to an Input Services Service Request by issuing the Access Seeker with a Quote. The Quote will include the following information:
 - 12.1.1 where available, an offer of specific Footprints to the Access Seeker;
 - 12.1.2 a co-location configuration for the LFC Build;
 - 12.1.3 an estimated total price for the LFC Build (**Build Cost**) in accordance with the Input Services Price List; and
 - 12.1.4 an estimated number of Business Days for the LFC Build to be completed from the date the LFC Build commences (**Build Time**).

Agreeing or rejecting a Quote

- 12.2 After LFC has issued a Quote, the Access Seeker may:
 - 12.2.1 accept the Quote;

- 12.2.2 reject the Quote; or
 - 12.2.3 propose an amended Quote.
- 12.3 If the Access Seeker proposes an amended Quote, the LFC and the Access Seeker must work together to reach agreement. It is anticipated that the Access Seeker may propose an amended Quote if the Access Seeker:
- 12.3.1 has changed its requirements (as provided to the LFC as part of the Access Seeker's Input Services Service Request); or
 - 12.3.2 disagrees with LFC's configuration, Build Cost and/or Build Time.
- 12.4 If the Access Seeker proposes an amended Quote and the LFC and the Access Seeker cannot reach agreement, either of them may follow the Dispute resolution procedure under clause 20 of the Input Services WSA General Terms.
- 12.5 If the Access Seeker rejects the Quote its Input Services Service Request will be cancelled.
- 12.6 If the Access Seeker does not accept or propose any amendment to the Quote within 10 Business Days of receiving it from LFC, the Access Seeker will be deemed to have rejected the Quote and clause 12.5 will apply.

Acceptance of LFC's Quote – “confirmed Input Services Service Order”

- 12.7 A Quote may be accepted by the Access Seeker giving notice to LFC's Provisioning Manager.
- 12.8 The Access Seeker's acceptance of a Quote will constitute a confirmed Input Services Service Order.
- 12.9 The LFC Build will commence as soon as reasonably practicable following acceptance of a Quote.
- 12.10 Acceptance of a Quote constitutes a properly completed order for the purposes of the Service Level Terms. Accordingly, Service Levels that are measured from receipt of a properly completed order will be measured from receipt of the Access Seeker's acceptance of a Quote.

13. LFC Build

General

- 13.1 The LFC's Co-location Project Manager will manage the LFC Build and keep the Access Seeker informed of progress.
- 13.2 The LFC will complete the LFC Build in accordance with the Quote and Service Level Terms subject to clauses 13.4 to 13.7. This includes the LFC obtaining all necessary consents or other legal permissions for the LFC Build. The LFC may change the configuration of the LFC Build only if:
 - 13.2.1 the change is required by circumstances beyond the LFC's control and it would not materially affect the Access Seeker's intended use of the Footprint; or
 - 13.2.2 the Access Seeker agrees (which agreement must not be unreasonably withheld, refused or delayed).

The LFC will use all reasonable endeavours to complete the LFC Build within the Build Time. The LFC Build will commence as soon as is reasonably and practically required to ensure the LFC Build is completed by the RFS Date specified by the Access Seeker and confirmed in the relevant

Quote.

Build Time

13.3 The Build Time will start to be measured from the date a Quote is accepted.

LFC Build cannot be completed

13.4 If the LFC reasonably and in good faith believes it has, for any reason, become impossible to complete the LFC Build (for instance a necessary consent is refused) it must as soon as practicable, give notice to the Access Seeker's Co-Location Project Manager. Upon receiving LFC's notice, the Access Seeker may either:

13.4.1 cancel its Input Services Service Order; or

13.4.2 work with LFC to resolve the difficulty by proposing an amended configuration and requesting a new Quote in relation to that configuration.

Build Cost exceeds Quote

13.5 If the LFC becomes aware that the Build Cost under the Quote is likely to be exceeded it will, as soon as practicable, give notice to the Access Seeker.

13.6 Where the increased Build Cost is due to events which could not reasonably have been foreseen by an experienced construction contractor, then:

13.6.1 if the actual Build Cost exceeds the Quote by more than 10%, the Access Seeker may cancel its Input Services Service Order; or

13.6.2 if the actual Build Cost exceeds the Quote by less than 10%, or the Access Seeker elects not to cancel its Input Services Service Order under clause 13.16.1, such increase will be a price variation and the Quote will be adjusted accordingly.

13.7 In all other cases where the actual Build Cost exceeds the Build Cost under the Quote the parties must work closely together to agree the Build Cost that the Access Seeker will pay. In the event that the parties cannot reach agreement, either party may refer that dispute to the Dispute Resolution procedure under clause 20 of the Input Services WSA General Terms.

Change to the scope of the contract works

13.8 The Access Seeker may advise the LFC of a change to its requirements for the Access Seeker Build after accepting the Quote, provided that any change either reduces the number of Footprints or is not a material increase.

13.9 Where the Access Seeker changes its requirements the following will apply:

13.9.1 the Access Seeker will give notice to the LFC requesting a variation;

13.9.2 the LFC will provide the Access Seeker with a price variation quote, which will be valid for 5 Business Days; and

13.9.3 if the Access Seeker wishes to proceed with its request it will give notice to the LFC, within 5 Business Days of receiving the price variation, of its acceptance and the quote will be adjusted accordingly.

13.10 If the Access Seeker rejects the revised Quote:

13.10.1 its original Input Services Service Order will be completed; and

13.10.2 it will become liable for the LFC's reasonable costs incurred in preparing the revised Quote.

13.11 If the Access Seeker does not accept or propose any amendment to the revised Quote within 5 Business Days of receiving it from the LFC, the Access Seeker will be deemed to have rejected it and clause 13.10 will apply.

Hand over

13.12 As soon as is practicable after the LFC Build is complete, LFC will give notice to the Access Seeker's co-location Project Manager.

Acceptance of the LFC Build

13.13 The Access Seeker has 10 Business Days from the date it receives notice under clause 13.12 to give LFC's Co-location Project Manager notice of acceptance or rejection. The Access Seeker must liaise with LFC's Co-location Project Manager to undertake its inspection.

13.14 If the Access Seeker does not give notice of acceptance or rejection within 10 Business Days it will be deemed to have accepted the LFC Build.

13.15 From the day the Access Seeker gives notice of acceptance or is deemed to have accepted the LFC Build:

13.15.1 the LFC may issue the Access Seeker with an invoice for the Build Cost; and

13.15.2 the Access Seeker will become liable for all relevant Charges for the Input Central Office and POI Co-location Service (including the recurring monthly Charge for the Input Central Office and POI Co-location Service Footprint).

13.16 The Access Seeker is not entitled to reject the LFC Build unless it reasonably and in good faith believes the LFC Build:

13.16.1 is not in accordance with the configuration in the Quote (taking into account any variation under section 13); or

13.16.2 has not been completed in a good and workmanlike manner.

13.17 If the Access Seeker rejects the LFC Build, its notice of rejection must include a full justification. In the event that the Access Seeker or LFC cannot resolve the Access Seeker's rejection of the LFC Build, either party may refer that dispute to the Dispute Resolution procedure under clause 20 of the Input Services WSA General Terms.

14. Access Seeker Build

14.1 The Access Seeker's Co-location Project Manager will manage the Access Seeker Build and keep the LFC informed of progress.

14.2 The Access Seeker must complete the Access Seeker Build in accordance with its Permit to Work and this Manual and in a good and workmanlike manner. The Access Seeker may change the configuration of the Access Seeker Build (as detailed in its Input Services Service Orders) only if the LFC agrees (which agreement must not be unreasonably withheld, refused or delayed).

14.3 The LFC's Permit to Work procedure is set out in detail in clause 38. The Access Seeker must have an approved Permit to Work before commencing the Access Seeker Build.

15. Record keeping

- 15.1 The LFC requires access to certain information to safely manage its Central Offices. The Access Seeker must comply with any reasonable request made by the LFC for information to enable the LFC to keep accurate technical records for each Central Office, including information about:
- 15.1.1 "as built" configurations;
 - 15.1.2 what equipment is installed;
 - 15.1.3 the location, power-loading and other requirements of any equipment; and
 - 15.1.4 cabling.
- 15.2 Any information provided to the LFC by the Access Seeker under this clause 15 will be Confidential Information for the purposes of clause 15 of the Input Services WSA General Terms.

PART 4 - TENURE

16. Relinquishment

Overview

- 16.1 The relinquishment of any Footprints (i.e. a reduction of the space supplied to the Access Seeker as part of the Input Co-location Service) must be included in the Access Seeker's Forecast as a change to existing Footprints.
- 16.2 Any relinquishment Input Services Service Requests must be made using OSS/BSS or email in the same way as a standard Input Services Service Request, in accordance with section 7.
- 16.3 The relinquishment date for a Footprint will be the longer of:
 - 16.3.1 one (1) month from the date the LFC receives a relinquishment Input Services Service Request in relation to that Footprint; or
 - 16.3.2 the balance of any term commitment in relation to that Footprint (or less by agreement).
- 16.4 The Access Seeker is required to remove all the Access Seeker Equipment from any relinquished Footprints and all the associated Access Seeker Equipment no longer required at the Central Office by the relinquishment date.
- 16.5 The Access Seeker must liaise with the LFC's Co-location Project Manager in relation to its relinquishment and may require a Permit to Work in order to remove the Access Seeker Equipment.
- 16.6 The Access Seeker's liability for the ongoing Charges in relation to its occupation of a relinquished Footprint will cease from the later of:
 - 16.6.1 the relinquishment date; or
 - 16.6.2 the date all the Access Seeker Equipment has been removed.
- 16.7 The LFC will use all reasonable endeavours to inspect the Central Office for the purpose of satisfying itself under clause 16.6 as soon as practicable after the Access Seeker requests it to do so.
- 16.8 If the Access Seeker fails to remove the Access Seeker Equipment within 10 Business Days from the relinquishment date, the LFC will use all reasonable endeavours to give the Access Seeker notice of the LFC's rights under clause 16.9.
- 16.9 If the Access Seeker has not removed the Access Seeker Equipment within 40 Business Days from the relinquishment date, the LFC will be entitled to treat the Access Seeker Equipment as its own and may retain or dispose of it as the LFC sees fit.

17. Relocation

Overview

- 17.1 This section outlines the circumstances in which the LFC can require the Access Seeker to relocate the Access Seeker Equipment and describes the procedure for relocation.

Relocation

- 17.2 The LFC may require that the Access Seeker relocates the Access Seeker Equipment from its existing Footprint to a different Footprint. The LFC must ensure that the relocation has no material impact on the operation or performance of the Access Seeker Equipment.
- 17.3 The LFC will only require the relocation of the Access Seeker Equipment if the technical requirements are such that it must use space that either is:
- 17.3.1 wholly or partially occupied by the Access Seeker Equipment; or
 - 17.3.2 in a position that would have a negative operational impact upon the Access Seeker Equipment.
- 17.4 The procedure for relocating the Access Seeker Equipment is:
- 17.4.1 the LFC must first give three calendar months' prior notice to the Access Seeker that it will require the Access Seeker to relocate. The LFC's notice must specify which Footprints will be relocated and when the relocation is required by;
 - 17.4.2 the Access Seeker must acknowledge receiving the LFC's notice and provide the LFC with any relevant requirements it has in relation to the relocation;
 - 17.4.3 the LFC will then issue a relocation plan to the Access Seeker (which includes the proposed configuration and timeframe for the relocation as well as any temporary solutions required to ensure continuity of operation of the Access Seeker Equipment);
 - 17.4.4 the Access Seeker must then accept or amend the relocation plan on the same basis that it would accept or amend a Quote. A relocation plan cannot be rejected; and
 - 17.4.5 the Access Seeker must then provide the LFC with a quote for its own costs and timeframes for the Access Seeker Build, relocation and installation. The LFC may accept, amend or reject the Access Seeker's quote. Any amendment of the quote by the LFC will be dealt with on the same basis as a Quote under section 12. The LFC is entitled to reject the quote and not proceed with the relocation. If the LFC rejects the quote it will become liable for the Access Seeker's reasonable costs incurred in preparing it.
- 17.5 The remaining steps (the LFC Build, acceptance, hand over and the Access Seeker Build) are equivalent to the terms dealing with provisioning above. After the Access Seeker receives the new Footprint it may invoice the LFC for the sum equal to its quote.
- 17.6 The Access Seeker and the LFC will work closely with each other to facilitate the relocation procedure. In the event that the LFC and the Access Seeker cannot resolve a relocation issue, either party may refer that dispute to the Dispute Resolution procedure under section 20 of the Input Services WSA General Terms.

18. Termination

- 18.1 The LFC may terminate the provision of the Input Central Office and POI Co-location Service at a Central Office in accordance with clause 18.2 in the event that:
- 18.1.1 the LFC at any time becomes under notice to quit the Central Office site pursuant to any lease and the LFC is unable to renew or extend the lease on reasonable commercial terms;

- 18.1.2 the Central Office site or the use of the Central Office site is rendered unlawful by any competent Authority;
 - 18.1.3 the Central Office or any substantial part of the Central Office is destroyed or so materially damaged by fire, earthquake or other cause as to require reconstruction or as to be rendered unfit for use and occupation and the LFC does not intend, in its discretion, to reinstate the Central Office; or
 - 18.1.4 the LFC's legal interest in the Central Office is materially affected by any other event or circumstance beyond the LFC's reasonable control.
- 18.2 Following any of the events listed in clause 18.1, the LFC will then advise the Access Seeker at the earliest practical date and may terminate the Input Central Office and POI Co- location Service at the affected Central Office by giving notice to the Access Seeker, in which case the LFC will use reasonable endeavours to give not less than three calendar Months' prior notice of the date of termination. Such notice will not discharge the Access Seeker from any liability under this Agreement accrued up to the date that the Access Seeker vacates the Footprint.

PART 5 - BILLING

19. Billing

Invoicing

- 19.1 The LFC will invoice the Access Seeker for all charges on the basis specified in the Input Services Price List. Invoices will be in an electronic bill format. Electronic format will replace the provision of a paper invoice, except that a printed GST summary will be provided to the Access Seeker. A hard copy paper invoice will be available to Access Seekers at the price set out in the Input Services Price List.
- 19.2 The eBill must include the following information:
- 19.2.1 FSL;
 - 19.2.2 Fault or Input Services Service Order identifier;
 - 19.2.3 any Core Service Rebates; and
 - 19.2.4 type of fee.
- 19.3 The LFC will send an electronic bill.
- 19.4 The Access Seeker will provide the LFC with the list of people that are authorised to download the eBill file. The LFC will set up access rights for these people on a secure web portal.
- 19.5 The LFC will provide the eBill and the printed GST summary to the Access Seeker free of charge.
- 19.6 The LFC will maintain one or more separate Access Seeker accounts for services provided to the Access Seeker. The LFC may alter the account structure as it considers appropriate.

Billing Enquiries

- 19.7 If the Access Seeker wishes to raise a billing enquiry, it may do so through the LFC's web page or B2B gateway. If the web page or B2B is unavailable, the Access Seeker may send an enquiry by email to the LFC billing team in the first instance at the billing email address supplied by the LFC under Appendix G.
- 19.8 The email must include the following information:
- 19.8.1 a header reading 'Billing Query'; and
 - 19.8.2 a completed Billing Enquiry Form.
- 19.9 The LFC will acknowledge the query and will use all reasonable endeavours to respond within the current billing period. Any billing enquiries submitted without the use of a Billing Enquiry Form will be rejected.
- 19.10 Additional billing information, over and above that reasonably required to assist Access Seekers in interpreting invoices, will be charged in accordance with the Input Services Price List. The Access Seeker may require the LFC to provide a quote for any such request for further information.
- 19.11 The process set out in this clause 19 is an informal enquiry process that does not limit the Input Services WSA General Terms. If the Access Seeker wishes to claim an Invoice Error in an invoice, it must follow the procedure set out in clause 7 of the Input Services WSA General Terms.

PART 6 –TIE CABLE INSTALLATION

20. Tie Cable Installation

Introduction

- 20.1 To use the Input Central Office and POI Co-location Service an Access Seeker will need to have a Tie Cable between the OFDF and their Footprint.

Types of Tie Cables

- 20.2 There are two types of Tie Cable available for Access Seekers:
- 20.2.1 an internal Tie Cable from the Central Office OFDF to the Access Seeker Footprint provided under the Input Central Office and POI Co-location Service; or
 - 20.2.2 an internal Tie Cable from one Access Seeker Footprint to another Access Seeker Footprint provided under the Central Office and POI Co-location Service or Input Central Office and POI Co-location Service (the Footprints can be Footprints of the same or different Access Seekers or a third party backhaul provider).
- 20.3 The Charges set out in the Input Services Price List will apply to any instance of the Tie Cable Service.
- 20.4 An Access Seeker may supply its own Tie Cables or the Access Seeker may ask the LFC to supply the Tie Cables. In either case the Tie Cables must meet the specification set out in the LFC's Cable Specification document (attached as Appendix E).
- 20.5 For the avoidance of doubt, only the LFC's contractors may undertake work on the OFDF or anywhere else in Central Office outside of the Access Seeker's Footprint.

The LFC Central Office Tie Cable – Footprint to MOFDF

- 20.6 Where requested by the Access Seeker, the LFC will install a Tie Cable from the MOFDF to the Access Seeker's Footprint within the LFC Central Office. The Access Seeker will specify in their order the following information:
- 20.6.1 the Input Central Office and POI Co-location Service Footprint to which the Tie Cable is to run;
 - 20.6.2 the number of fibres required in the Tie Cable;
 - 20.6.3 the termination method required at the Footprint either SC connector or LCA connector or splice on OFDF;
 - 20.6.4 the way the cable connectors will be presented, e.g. 19" rack mount OFDF; and
 - 20.6.5 the length of cable to be left at the Footprint if an OFDF is not required.
- 20.7 For Tie Cables with fibre counts of less than 48 the LFC may choose to provide the Tie Cable Footprint termination as a connectorised pigtail.

The LFC Central Office Tie Cable – Footprint to Footprint

- 20.8 Where requested by the Access Seeker, the LFC will install a Tie Cable from one Access Seeker Footprint to another service provider or third party backhaul provider Footprint provided under the Central Office and POI Co-location Service or Input Central Office and POI Co-location Service. The Access Seeker will specify in its order the following information:

- 20.8.1 the Footprints between which the Tie Cable is to run (if the Footprints are allocated to different service providers then the Access Seeker placing the order must produce evidence from the other service provider that they have the authority to install the Tie Cable);
 - 20.8.2 the number of fibres required in the Tie Cable;
 - 20.8.3 the termination method required at the Footprint, being either SCA connector or LCA connector or splice on the OFDF;
 - 20.8.4 the way the cable connectors will be presented, e.g. 19" rack mount OFDF;
 - 20.8.5 the length of cable to be left at the Footprint; and
 - 20.8.6 if the Tie Cable is going to the Footprint of another service provider or third party backhaul provider, that party must provide evidence of permission to connect to that Footprint.
- 20.9 This Manual only covers Tie Cables that run between Footprints provided under the Central Office and POI Co-location Service.

Identifier

- 20.10 Designations (names) will be assigned by the LFC to each tie pair in accordance with the LFC's normal network practice, as developed by the LFC and advised to the Access Seeker from time to time.

LFC Responsibilities

- 20.11 The LFC will name Tie Cable fibres and record these in the LFC's system for managing fibre inventory.
- 20.12 The LFC will identify the route that the Tie Cable will take within the Central Office and install any required cable racking to support the Tie Cable.
- 20.13 The LFC will install the Tie Cable within the Central Office.
- 20.14 The LFC will supply and record the necessary space on the MOFDF if appropriate.
- 20.15 The LFC will terminate Tie Cable fibres on the MOFDF if appropriate.
- 20.16 The LFC is responsible for the repair and/or replacement of faulty termination at the MOFDF if required.

Access Seeker Responsibilities

- 20.17 For Access Seeker supplied Tie Cable, a length of cable advised by the LFC will be delivered to the LFC with sufficient lead-time to enable installation to proceed. Any delay in supply of the cable will be deemed as an extension of the Service Level for its installation.
- 20.18 Where an Access Seeker requests the LFC to carry out any maintenance on a Tie Cable the LFC must do so and the Tie Cable Maintenance Charge set out in the Input Services Price List will apply. If the LFC reasonably considers that any maintenance work needs to be carried out on a Tie Cable the LFC may (after giving the Access Seeker prior notice of its intention to do so) carry out that work and apply the Tie Cable Maintenance Charge.

- 20.19 The Access Seeker must maintain and be responsible for its own Tie Cable inventory system. This system must be able to record the following:
- 20.19.1 the termination of each Tie Cable pair;
 - 20.19.2 the Access Seeker's own assignments or reassignments of Tie Cable fibres; and
 - 20.19.3 changes to Tie Cable fibres when service has been transferred (e.g. for fault resolution).

Testing

- 20.20 After the Tie Cable is terminated at both the MOFDF shelf and the Access Seeker's Footprint OFDF shelf, the LFC and the Access Seeker will jointly carry out end to end testing.

Resolution of Inconsistency

- 20.21 Where the LFC's records and the Access Seeker's records differ with regard to the status of a Tie Cable pair, the Access Seeker must confirm the accuracy of the status of the Tie Cable pair in its inventory system.
- 20.22 If this does not resolve the difference, the Access Seeker must liaise with the LFC's Provisioning Manager.

Cable identification marking

- 20.23 All cables and closures belonging to the Access Seeker must be clearly marked by the Access Seeker to ensure the owner is correctly identified. Markings must occur at least every 1 metre (sufficiently clear to enable ready identification of the cable owner).
- 20.24 All fibre closures on the LFC property must have an appropriate laser warning label that complies with IEC 60825-2 (2004) fixed in a prominent position on the outside of the closure.

PART 7 – CO-LOCATION SERVICE AREAS

21. Service Areas

Overview

- 21.1 This part describes the normal operating standards and specifications that apply to Footprints. Except for clause 22.1, the standards and specifications set out in this part apply only to Footprints within the Service Areas in a Central Office. The characteristics of each Footprint on a Central Office for the installation of ancillary backhaul equipment will be unique.

Service Areas

- 21.2 Service Areas will provide a working environment broadly equivalent to that provided for existing LFC equipment and will typically include:
- 21.2.1 vinyl floors;
 - 21.2.2 painted walls and ceilings;
 - 21.2.3 air conditioning;
 - 21.2.4 equipment mounting and bracings;
 - 21.2.5 lighting;
 - 21.2.6 electrical reticulation; and
 - 21.2.7 access control.
- 21.3 The Input Central Office and POI Co-location Service will be supplied with building services (which are the services set out in this Part 7) in accordance with the LFC's normal operating standards and specifications as outlined below.

22. Access Seeker Equipment

- 22.1 All Access Seeker Equipment installed within a Central Office must be electrically safe, meet standard EMC emissions requirements and be correctly earthed. The equipment will be required to comply with New Zealand electrical standards, including AS/NZS 3015, which can be found at www.standards.co.nz or www.eeca.govt.nz, and EMI and RFI standards which can be found at www.rsm.govt.nz.
- 22.2 The Access Seeker's racks and cabinets must be electrically isolated from the building (including any seismic bracing) to prevent electrical interference. An earth bar will be provided in every Co-location Service Area to which the earthing systems of each item of Access Seeker Equipment must be connected. Any alarm lights or bells must be installed on the Access Seeker's racks or cabinets.

23. Ancillary facilities

- 23.1 The LFC, at its discretion, may specify whether car parking, toilet and/or kitchen facilities at a Central Office are available to the Access Seeker. If these facilities are available they may be used by representatives of the Access Seeker during any period such representatives are working at the Central Office subject to any conditions specified by the LFC as to the use of such facilities.

24. Space and height (contained within a building)

- 24.1 The Access Seeker may only occupy a Footprint it has been allocated as part of the Input Central Office and POI Co-location Service.
- 24.2 The Access Seeker may provide lockable cabinets to protect the Access Seeker Equipment. These cabinets must meet the requirements set out in paragraph 1.1.10 of Appendix B of the Service Description for the Input Central Office and POI Co-location Service and in any other LFC seismic standards and requirements as published by the LFC on www.ultrafast.co.nz or otherwise advised by the LFC to the Access Seeker from time to time, to protect the LFC and other Access Seekers from damage or interruption associated with seismic events.
- 24.3 Double depth cabinets that contain heat-generating equipment must be configured in the same way so that each row dissipates heat on the same side. The LFC will designate a hot and a cold side for each row.
- 24.4 Footprints in a Central Office will:
- 24.4.1 measure 600 x 400 mm, suitable for 21" equipment; and
 - 24.4.2 have a height between 1,900 mm and 2,200 mm.
- 24.5 The LFC's normal operating standard is to provide a working space of approximately 1,000 mm along the front and back face of each row. 400mm deep Footprints have no access to the back of the cabinet. This standard is subject to space restrictions within the Central Office.
- 24.6 The Access Seeker may build up to the edge of any Footprint. Footprints will be spaced to provide side clearance for seismic sway, people access or the installation of more cabinets at the LFC's discretion and in accordance with the seismic requirements of the particular Central Office.

25. Lighting, floor covering and finishes

- 25.1 The LFC will supply lighting to a minimum level of 200 lux by way of suspended or ceiling-mounted fluorescent light fittings. The LFC's target operating standard is to supply lighting to a level of approximately 500 lux measured at a height of 600 mm off the floor.
- 25.2 Floor coverings will be equivalent to those used in existing LFC equipment areas within the Central Office. Newer sites use conductive or anti-static vinyl with conductive glue to concrete.
- 25.3 Any room containing a Service Area will be classified as a "fire cell".

26. Temperature control

- 26.1 Co-location Service Areas will be designed to keep the air temperature within a range from 15 to 35°C. The normal operating standard for the centre of equipment aisles within a Service Area is 22 to 26°C.
- 26.2 Service Areas will be equipped with temperature alarms that are activated at 30°C (initial high), 35°C (urgent high) and at 15°C (low).
- 26.3 Humidity will not necessarily be controlled in Service Areas. Humidity alarms, where installed, are set at 35% (low) and 70% (high).
- 26.4 Air temperature and humidity control will be maintained by a variety of plant at Central Offices (including in some cases, plant specific to the Service Area).

- 26.5 The main types of cooling systems used are:
- 26.5.1 air conditioning systems, DX (split or window units) and chilled water process coolers (in larger Central Offices only); and
 - 26.5.2 fresh air.
- 26.6 The removal of heat from a Service Area will primarily be achieved by circulating air through mechanical plant or, in the case of fresh air systems, by exhausting heated air to the atmosphere.
- 26.7 Each Access Seeker will be responsible for ensuring that:
- 26.7.1 the air flow within its racks and/or cabinets is sufficient to keep the Access Seeker Equipment cool; and
 - 26.7.2 where hot and cold aisles are provided, air is taken from the cold aisle and exhausted into the hot aisle.

27. Fire protection

- 27.1 Fire detection systems vary between different Central Offices. The LFC will supply the Service Area with fire protection systems equivalent to those installed in existing LFC equipment areas within the Central Office, provided that the LFC will have no obligation to provide very early smoke detection apparatus.
- 27.2 Sprinkler systems may be installed in larger Central Offices. The Access Seeker Equipment must comply with the New Zealand Insurance Council's current rules regarding the obstruction of sprinkler systems.

28. Power

- 28.1 The default power source supplied to the Access Seeker will be -48V DC power at current ratings specified in the Input Services Price List, with the same back-up capability as -48V DC power provided to the LFC equipment areas within the same Central Office. The Access Seeker may request additional amp steps in accordance with the Input Services Price List.
- 28.2 The Access Seeker's Input Services Service Request must specify its DC power load, fuse/breaker ratings and a line diagram of the proposed wiring.
- 28.3 All power connections to the DC power system of a Central Office at the fuse end must be undertaken by the LFC (mistakes during the connection procedure can cause power loss to other telecommunications network equipment (including the LFC's Network) which may be connected to the same power distribution cabinet). The Access Seeker is responsible for connection at the Footprint end.
- 28.4 The fuse/circuit breaker rating will be used to indicate power use. Power usage will be assessed as 0.67 of the nominal fuse or circuit breaker rating for single feeds or 0.335 of the nominal rating for dual feed applications.
- 28.5 Cabling must be fused or protected by circuit breakers appropriate to each cable. The maximum feed supplied by the LFC to the Access Seeker per Footprint will use a maximum distribution circuit breaker of 63 amps, with usage fees charged in the steps detailed in the Input Services Price List. An approximate 3:1 fuse discrimination ratio must be maintained between series fuses or circuit breakers. This ensures that, when a fault occurs, only one device will blow cutting supply to the minimum amount of other equipment.
- 28.6 Separate power feeds from outside the Central Office and the installation of batteries are prohibited.

28.7 A maximum of two power feeds, one from the 'A' side and 'B' side power supplies will be provided to each Footprint.

28.8 A 230V single phase ac power supply is available adjacent to the Footprint for temporary use while installing or maintaining equipment. This power source must not be used to power equipment located within the Footprint. The Access Seeker may install their own inverter to generate a 230 V ac power source within their Footprint.

29. Overhead racking

29.1 The LFC will supply overhead ladder racking to match the cabinet or rack layout.

29.2 The LFC will run incoming cabling (including fibre, earth conductor, paired cable, coax cable and Tie Cables between the Access Seeker Equipment and the MOFDF) on the overhead ladder racking to match the Footprint layout.

30. Equipment mounting/seismic bracing

30.1 The Access Seeker Equipment must meet the requirements set out in paragraph 1.1.10 of Appendix B of the Service Description for the Input Central Office and POI Co-location Service and in any other LFC seismic standards and requirements as published by the LFC on www.ultrafast.co.nz or otherwise advised by the LFC to the Access Seeker from time to time, to protect the LFC and other Access Seekers from damage or interruption associated with seismic events.

30.2 The LFC will supply seismic infrastructure equivalent in function to that provided for existing LFC equipment.

30.3 The Access Seeker must specify the estimated total weight of each cabinet and rack as part of its Preliminary Input Services Service Requests so that the LFC can check floor strength. The LFC's typical floor loading capacity is up to a maximum of 4KPa (approximately 500 kg/m²).

31. Earthing

31.1 The Access Seeker must comply with the earthing requirements set out in the LFC's earthing standards and requirements as published by the LFC on www.ultrafast.co.nz or otherwise advised by the LFC to the Service provider from time to time.

31.2 The LFC will install a 95 or 120 mm² green earth cable to an earth bar at the end of each row for the connection of Access Seeker Equipment.

31.3 The Access Seeker's racks and cabinets must be isolated from the building. Isolation must be tested and verified to be 5 Mohm at 100 Volts before connecting to the earth grid.

31.4 Every cabinet or rack must be joined to the earth grid cable by a 6 mm² green cable.

31.5 Joints of 2 or 4 cabinet or rack cables must be made every 1,200 mm using a crimp tee or line tap connector.

31.6 All earthing schemes at a Central Office must be approved by the LFC.

31.7 All connections to existing earthing systems (including connections from cabinets, racks and signal cabling) must be to the earth bar. The LFC will approve cable sizes and quantities.

31.8 Cable screens must be earthed at the LFC end only, not at the Access Seeker's end.

32. Environmental and power alarm monitoring

- 32.1 Environmental, power and plant failure alarms are monitored by the Building Owner's NOC.
- 32.2 The environmental alarm point settings are set out above. Some Central Offices also have plant failure alarms which indicate when particular plant components have failed.
- 32.3 The Building Owner's NOC will dispatch their representatives to Central Offices that have generated alarms and notify the LFC who shall in turn notify the Access Seekers.

PART 8 - PROBLEM MANAGEMENT

33. OSS/BSS

- 33.1 The LFC will in the future have a web-based and B2B gateway fault management system as part of the OSS/BSS described in clause 7 above. If the web page or B2B is unavailable please refer to Appendix G (LFC Contact Details) for the appropriate contact person and contact information. In addition to processing Input Services Service Requests the OSS/BSS allows Access Seekers to:
- 33.1.1 create a trouble ticket;
 - 33.1.2 retrieve a trouble ticket; and
 - 33.1.3 update a trouble ticket.
- 33.2 The LFC OSS/BSS will allow the Access Seeker to log on to a secure site for reporting and monitoring faults with the LFC.

34. Faults

- 34.1 The LFC is only responsible for faults set out in clause 6 of the Input Services WSA General Terms. If the LFC investigates and no fault is found or no fault for which the LFC is responsible is found, the LFC will charge the Access Seeker the "no fault found fee" as set out in the Input Services Price List. Where the LFC is responsible for the fault, a "no fault found" fee will not be charged.
- 34.2 It is the Access Seeker's responsibility to provide initial fault diagnosis on all faults reported to it by its End Users. (Refer to training documentation supplied by the LFC with their initial training rollout).
- 34.3 The requirements for this initial fault diagnosis are set out in clause 6 of the Input Services WSA General Terms.

Reporting Faults to the LFC

- 34.4 Subject to clause 34.5 the Access Seeker must use OSS/BSS for reporting all faults regarding the Input Central Office and POI Co-location Service. If the Access Seeker uses any other method to report a fault, the Service Levels in the Service Level Terms will not apply to that fault.
- 34.5 Where OSS/BSS is unavailable, the Access Seeker must submit fault reports to the LFC by referring to Appendix G (LFC Contact Details) for the appropriate contact person and contact information. The LFC must use all reasonable endeavours to advise Access Seekers immediately upon becoming aware that the OSS/BSS is unavailable.
- 34.6 Once the Access Seeker has provided initial fault diagnosis, complied with clause 6 of the Input Services WSA General Terms and determined that it requires the LFC's assistance to resolve the fault, the following information is required when reporting a fault:
- 34.6.1 confirmation that the initial fault diagnosis has been completed;
 - 34.6.2 contact name and phone number of the Access Seeker staff member logging the fault;
 - 34.6.3 fault type and description;
 - 34.6.4 time the fault occurred;
 - 34.6.5 address and contact details for the site of the fault (where reasonably required); and
 - 34.6.6 any other relevant information reasonably required.

- 34.7 If any of the above information (excluding the information referred to in clauses 34.6.1 and 34.6.6) is not provided, the Service Levels in the Service Level Terms will not apply.

Hours of Operation

- 34.8 Faults can be logged 24 hours a day, seven days a week.
- 34.9 Faults that are the LFC's responsibility will be fixed by the LFC representatives during Fault Restoration Hours. If a fault is logged outside of Business hours, it is possible the LFC will only start working on the fault at 7.00am the following day. Extended fault restoration hours apply for enhanced service levels and emergency faults.
- 34.10 When a fault report is received, the LFC will advise the Access Seeker, acknowledging receipt of the fault report.

Fault Tracking

- 34.11 All faults will be logged in OSS/BSS and the Access Seeker will be given a fault reference number and an expected fault restoration time. The expected fault restoration time will be provided in accordance with the LFC's fault prioritisation systems.
- 34.12 The LFC will use reasonable endeavours to meet the notified expected fault restoration time as provided in clause 34.11.
- 34.13 Where the LFC has allocated an expected fault restoration time to a fault and it subsequently becomes apparent that the fault restoration time cannot be met, the LFC will advise the Access Seeker of a revised fault restoration time. In that situation the Service Levels in the Service Level Terms will continue to apply to the originally notified expected restoration time, rather than the revised fault restoration time.
- 34.14 The Access Seeker will be able to check the progress of a fault via OSS/BSS. The fault reference number is to be used in all communications regarding the fault.
- 34.15 If the LFC identifies the need to send a faults contractor, the LFC will update OSS/BSS.
- 34.16 The Access Seeker's helpdesk is responsible for coordinating site access and any required outage window with the End User.

Fault Closure

- 34.17 Once the fault has been resolved, the LFC will notify the Access Seeker via OSS/BSS (or other means) that the fault has been resolved, confirm the reference number and, where possible, provide the cause of the fault and any actions taken to reach resolution.

Emergency Faults

- 34.18 Emergency faults reported to the LFC outside of the hours of operation set out in clause 34.9 will be treated on a case by case basis.
- 34.19 In the first instance, the LFC will propose a temporary solution. However, in the absence of a viable temporary solution, the LFC may schedule a callout to respond to faults relating to:
- 34.19.1 medical emergencies;
 - 34.19.2 where the End User provides an essential community service (e.g. police or a doctor's residence); or

34.19.3 where there is a mass outage that impacts on 200 or more End Users.

34.20 The escalation protocol is provided in Appendix B.

PART 9 – FIBRE DIVERSITY

35. Diversity via additional instances of access services

Overview

- 35.1 The Input Direct Fibre Access Service and PON Fibre Access Services, which includes both a Distribution Fibre and Feeder Fibre Service (**Input Fibre Access Services**), provide a single fibre access into the LFC Central Office. Diversity (a second or subsequent access to the Central Office) may be available to End Users as separate instances of the relevant Input Fibre Access Service.
- 35.2 Diversity will be available to businesses (excluding home offices), schools, hospitals and health service providers.
- 35.3 Diversity is designed as a value added service for customers who require high reliability connectivity for critical business applications. Diversity begins with the design during the network build process, with a targeted architecture approach based on the type of area covered, and at the highest level will include on-going management to ensure core network paths remain diverse.
- 35.4 Access Seekers can also request diverse access to non-Priority User Premises or access to diverse Central Offices as part of a Non-Standard Install however this will not be available in all cases.
- 35.5 Where practical the LFC will also provide diversity for PONFAS as an additional service.
- 35.6 There may be practical limitations to providing full physical diversity to some sites. The provision of a separate entry to a LFC Central Office will have unique site specific engineering considerations and may attract additional costs.

Levels of Diversity

- 35.7 There are 4 main levels of diversity:
 - 35.7.1 single Central Office redundancy with separate diverse fibre;
 - 35.7.2 single Central Office redundancy with separate diverse fibre and diverse access to End User Premises;
 - 35.7.3 single Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate OFDF at a single Central Office; and
 - 35.7.4 dual Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate Central Office.
- 35.8 To provide the diversity described in clause 35.7.3 the LFC will have to provide a second entry point to the Central Office; if this is not available then the LFC will have to build the additional access point at time of order at the cost set out in the Input Services Price List. The Network cables will also be terminated on a separate OFDF.

PART 10 – OUTAGES & WORKING ON LFC NETWORK

36. LFC

- 36.1 Work may be required on the LFC's Network which may affect the Input Central Office and POI Co-location Service supplied to the Access Seeker. This section summarises the LFC's responsibilities in respect of Planned Outages and Unplanned Outages.
- 36.2 Where practical, the LFC will use all reasonable endeavours to give the Access Seeker reasonable advice of outages which are likely to adversely affect the Input Central Office and POI Co-location Service.

Planned Outages

- 36.3 The LFC may suspend supply of the Input Central Office and POI Co-location Service for the purpose of conducting works, routine maintenance, remedial work, upgrades to the LFC's Network, or planned migrations from a temporary POI to a permanent POI (**Planned Outage**).
- 36.4 The LFC may migrate the Access Seeker and its End Users from the temporary POI to a permanent POI (each a **Migration**) as part of Planned Outages. To the extent that Downtime is directly caused by a Migration, that Downtime will be excluded from the calculation of Layer 1 and Layer 2 availability - maximum downtime service levels for the Access Seeker and the relevant End Users, provided that this exclusion will only apply to Downtime occurring over a maximum of 5 individual Business Days (and only between the hours of 11.00pm and 6.00am).
- 36.5 The LFC will use all reasonable endeavours to:
- 36.5.1 conduct any Planned Outage between the hours of 11.00 pm to 6.00 am inclusive, where the LFC believes that is practical (acting reasonably);
 - 36.5.2 advise the Access Seeker in advance of any Planned Outage. The Access Seeker in turn will inform the End User or reseller. If the Access Seeker fails to inform the affected End Users or reseller, the LFC may inform the End Users or reseller directly in the future; and
 - 36.5.3 provide the following information:
 - (i) a brief explanation of the reason for the Planned Outage;
 - (ii) the intended date, time and duration of the Planned Outage;
 - (iii) a description of the Input Central Office and POI Co-location Service (or the relevant part of it) which will be affected by the Planned Outage; and
 - (iv) the name and contact details of the LFC's representative(s) who gave the advice.

Unplanned Outages

- 36.6 The LFC may suspend supply of the Input Central Office and POI Co-location Service:
- 36.6.1 due to any unplanned unavailability of the LFC's Network or the Input Central Office and POI Co-location Service; or
 - 36.6.2 in order to provide or safeguard service to the emergency or other essential services, (referred to as an **Unplanned Outage**).

- 36.7 The LFC will use all reasonable endeavours to:
- 36.7.1 give the Access Seeker as much advice as possible of the existence of any Unplanned Outage;
 - 36.7.2 advise the Access Seeker as soon as reasonably practical after the LFC becomes aware of any Unplanned Outage; and
 - 36.7.3 answer any reasonable questions from the Access Seeker about the extent and duration of any Unplanned Outage.
- 36.8 If the Access Seeker becomes aware of any Unplanned Outage before it receives advice from the LFC under clause 36.7, the Access Seeker will make reasonable efforts to notify the LFC as soon as reasonably practical.

37. Access Seeker

- 37.1 This section identifies the different requirements the Access Seeker must meet to undertake work at the LFC Sites - in particular in and around a Central Office.
- 37.2 The Access Seeker will need to undertake work on the LFC Site in order to install, operate and maintain the Access Seeker Equipment. To undertake this work, the Access Seeker will need:
- 37.2.1 Access (through either accreditation and security clearance or an LFC escort);
 - 37.2.2 The LFC's permission to undertake the work (a Permit to Work); and
 - 37.2.3 To meet all of the LFC's work standards (as specified in this Manual).
- 37.3 These requirements are dealt with in detail in Parts 11 and 12.

Work outside of a Footprint

- 37.4 All work on an LFC Site outside of the Access Seeker's Footprint must be undertaken by a LFC representative on behalf of the Access Seeker.
- 37.5 An Input Services Service Request for the LFC to undertake work must be made using OSS/BSS or email as appropriate.

Escorted access

- 37.6 A representative of the Access Seeker will require escorted access (i.e. to be accompanied by an LFC representative) where:
- 37.6.1 the Access Seeker representative is not both accredited and the holder of a valid security access card; or
 - 37.6.2 the Access Seeker representative requires access to parts of the Central Office not included in the Access Seeker's unescorted right of access under clause 37.7.
- 37.7 An Access Seeker will not require escorted access from the LFC for a representative who does not hold a valid security access card and is not accredited, where an emergency affecting the Access Seeker's Footprint requires access for a period of less than one day provided, the Access Seeker has requested escorted access from the LFC as soon as the Access Seeker becomes aware that such access is required and the LFC informs the Access Seeker that the LFC is unable to provide an escort, but is willing to allow the Access Seeker to provide the escort. The LFC must not unreasonably withhold its consent provided:

37.7.1 the Access Seeker ensures that the representative is escorted by a second representative who holds a valid security access card and is accredited; and

37.7.2 the Access Seeker is responsible and liable for the actions of the unaccredited representative.

37.8 An Input Services Service Request for the LFC to supply an escort must be made using OSS/BSS or email as appropriate.

38. Permit to Work

38.1 This section explains the LFC's Permit to Work procedure. A Permit to Work will be required for most work within the Central Office beyond the day to day operation of the Access Seeker Equipment within the Access Seeker's Footprint. The purpose of the Permit to Work procedure is so that the LFC has prior notice of all significant activity on the LFC Sites and can respond appropriately in the event of an outage.

38.2 The LFC's Permit to Work team is part of the LFC NMC (or **LFC NOC**). The LFC NOC is responsible for ensuring that all work on the LFC Sites is visible so that risks to the LFC's Network can be controlled and mitigated.

Permit to Work procedure

38.3 The Permit to Work procedure is intended to minimise disruption by timing and enforcing standard work practices. It provides:

38.3.1 a real time view for the LFC NOC of all planned work which poses a threat or service loss to the LFC's Network;

38.3.2 contention checking to identify and eliminate conflict at the LFC Sites;

38.3.3 a check of work timing against specified requirements; and

38.3.4 an interface with the network events notification procedure to provide End Users with notifications of planned work.

Permit to Work applications

38.4 Permit to Work applications are made online through the LFC website www.ultrafast.co.nz. See Appendix G (Ultrafast Fibre control centre) for a manual permit required.

38.5 A Permit to Work is required when:

38.5.1 the Access Seeker carries out any Access Seeker Build at a Central Office (including the installation of and any subsequent work on the Access Seeker Equipment);

38.5.2 work creates a risk or loss of service to the LFC's Network (or a risk or loss of service to any equipment which supports the LFC's Network such as building services); and

38.5.3 work is undertaken to the LFC's Network or building services infrastructure. (A Permit to Work is not required for the installation of and changes to cards in the Access Seeker Equipment.)

38.6 An after-hours Permit to Work is defined as one required after 5.00 pm and where the work is to take place before 8.00 am the next day. The LFC NOC is responsible for processing and approving after-hours Permits to Work. Contact the LFC NOC. See Appendix G for contact details.

- 38.7 In the event of a service impacting fault, permission may be given to commence work without a Permit to Work. In this situation the Access Seeker should call the LFC NOC. See Appendix G for contact details.
- 38.8 The LFC will respond to a Permit to Work application within a reasonable period (which will be no longer than 4 Business Hours), and will not unreasonably decline an application.

39. Work Procedures

- 39.1 The following rules apply for managing Access Seeker work on LFC Sites:
- 39.1.1 all work must comply with the appropriate generally accepted best practice industry standards including any relevant LFC standards;
 - 39.1.2 all work must comply with the relevant Permit to Work; and
 - 39.1.3 the Access Seeker must comply with the requirements of all relevant laws (including all consents and permits etc) prior to and during any work.
- 39.2 The LFC document "*Protecting the LFC Network*" (**PLFCN**) will describe the requirements for work plan development. To ensure all work procedures are robust and that all work proceeds with a structured risk management plan:
- 39.2.1 the Access Seeker must develop a work plan that is fully compliant to the PLFCN process before work starts;
 - 39.2.2 the work plan must be approved by the LFC, acting reasonably;
 - 39.2.3 the work plan must be available on site at all times during any work and must be used by the Access Seeker's accredited representatives; and
 - 39.2.4 all work must comply with the Permit to Work procedure.
- 39.3 The LFC's PLFCN procedure requires a work plan for any work to be undertaken on a LFC Site. The work plan must address the following points:
- 39.3.1 the scope and purpose of the work;
 - 39.3.2 the location of the work (building, floor and area);
 - 39.3.3 the contact details of the LFC's and the Access Seeker's representatives;
 - 39.3.4 the name and contact details of the person responsible for carrying out the work;
 - 39.3.5 the duration of work (including dates if known);
 - 39.3.6 a copy of the approved Permit to Work;
 - 39.3.7 the number of people required; their trades and accreditation requirements;
 - 39.3.8 the name and services provided by any sub-contractor or third party;
 - 39.3.9 the risks and hazards identified;
 - 39.3.10 any parts of the LFC's Network requiring isolation (and for how long);
 - 39.3.11 the control and isolation points identified;
 - 39.3.12 any storage requirements;

- 39.3.13 a dust management plan;
- 39.3.14 a waste management plan;
- 39.3.15 any work that produces spark or flame (hot work); and
- 39.3.16 the tools and protective equipment required (e.g. power tools less than 1kW; power tools greater than 1kW; isolating transformers; vacuum cleaners; gas operated equipment; non-combustible fire blankets; anti-static dust sheets; fire extinguishers and sand bags).
- 39.3.17 any variation in the power demand required

Health and safety

- 39.4 All work must comply with the appropriate health and safety guidelines. The Access Seeker must make itself aware of, and comply with, all emergency and evacuation plans that apply to each Central Office.

Working on the LFC sites

- 39.5 Where a secure LFC Site employs a security guard, the Access Seeker must report to the security guard upon accessing and leaving.
- 39.6 Access on public holidays can be arranged by phoning the LFC NOC. (See Appendix G for contact details).
- 39.7 Any LFC supplied identification must be worn in accordance with the access card rules (see clause 42). Each accredited representative of the Access Seeker must also wear his or her own identification issued by the Access Seeker when entering a Central Office. The identification must show the wearer's name, photo and the Access Seeker's name.
- 39.8 Cellular phones must be turned off in sign-posted areas and within 1 metre of telecommunications equipment.
- 39.9 The Access Seeker is responsible for the removal of rubbish, and for cleaning and maintaining its equipment and the area around it.

Electric tools and appliances

- 39.10 Use of portable electrical equipment with a power rating of less than 1 kW is permitted in the vicinity of all telecommunications equipment. An isolating transformer must be used with 230V equipment that is not clearly labelled as double insulated.
- 39.11 Electrical equipment with a power rating greater than 1 kW must not be used within 1 metre of any telecommunications equipment. 230V equipment over 1 kW must not be plugged into an outlet on any telecommunications equipment frame, cabinet or rack. Only the outlets on a building's wall may be used. An isolating transformer must be used if the equipment is not insulated – residual current devices (RCDs) do not provide the necessary earth isolation.
- 39.12 Where it is proposed to use electrical equipment with a power rating greater than 2 kW, the approval of an LFC site manager must first be obtained. Any conditions for use attached to the approval must be strictly adhered to.

Static electricity

- 39.13 As telecommunications equipment is very sensitive to static electricity, extreme care must be taken when working in Central Offices. Anti-static wrist straps and floor mats must be used at all times.

PART 11 – SECURITY AND ACCREDITATION

40. Security

- 40.1 To access any secure LFC Site (which includes all Central Offices) a representative of the Access Seeker must have both accreditation and security clearance. Accreditation involves training and familiarisation with the LFC's procedures and work standards. A security clearance check may be required or performed by the LFC before access is granted to an accredited person.
- 40.2 In addition, representatives of the Access Seeker that undertake work on an LFC Site must have appropriate work type accreditation/professional qualifications.

41. Accreditation

- 41.1 This section outlines the procedure for becoming accredited to access and work on LFC Sites.
- 41.2 The LFC document "Protecting the LFC Network" (**PLFCN**) describes the requirements for accreditation in detail, which include:
 - 41.2.1 all persons engaged in any work on Central Offices or other infrastructure comprising the LFC's Network must successfully complete the site accreditation training and examination before access to any secure LFC Site will be granted;
 - 41.2.2 site accreditation must be maintained by annual refresher courses; and
 - 41.2.3 training records must be kept and made available to the LFC upon request.
- 41.3 All work that requires industry licensing or specific technical accreditation (e.g. electrical work and data cabling) must meet the appropriate standard and be done by someone with the appropriate qualifications. On completion, all work must be certified by the person undertaking it as complying with all relevant standards.
- 41.4 The LFC will undertake PLFCN accreditation training at three monthly intervals in Hamilton (subject to demand). The LFC will provide to the Access Seeker a training schedule detailing times and venues and trainer contact details.
- 41.5 The training will comprise the following:
 - 41.5.1 instruction using audio visual aids on safe working practices in network sites;
 - 41.5.2 an open book test; and
 - 41.5.3 a record of attendance.
- 41.6 The LFC will, at its discretion (to be exercised reasonably), accredit representatives of the Access Seeker based on each representative's participation and performance in the PLFCN accreditation training.
- 41.7 To maintain accreditation, accredited representatives must attend a refresher PLFCN training course every year.

42. Security clearance

- 42.1 Accredited representatives of the Access Seeker must apply for access to be granted to any relevant LFC Sites. Access is granted by the LFC issuing the representative with an access card.
- 42.2 The LFC may specify conditions on any person's right of access at the time it issues an access card. Such conditions may be amended subsequently at the LFC's discretion (to be exercised

reasonably).

- 42.3 Access to an LFC Site is controlled by swipe or proximity cards and PIN entry. The LFC utilises access control systems to control access to most medium and large buildings the LFC owns or occupies.
- 42.4 Access will be limited to areas that are essential for an accredited representative of the Access Seeker to complete his or her work (i.e. access to and from the Service Area).
- 42.5 Unauthorised interference with any part of the security entry system by a representative of the Access Seeker will result in access for that representative being removed permanently.

Card application

- 42.6 Applications for access cards are required in the following circumstances:
 - 42.6.1 for all new, replacement and expired cards; and
 - 42.6.2 for any amendments to the scope of access required.
- 42.7 Applications must be accompanied by evidence of accreditation (and, if relevant, annual refresher courses). Further, the accredited representative of the Access Seeker must:
 - 42.7.1 complete the "Access Control Card Application Form";
 - 42.7.2 provide a passport sized colour photo of the applicant with the applicant's name written on the back. (This image will be stored electronically for future use by the LFC Operations Centre); and
 - 42.7.3 submit the form and photo to the LFC to be processed. Approved cards will be provided to the address specified in the application form.

Security clearance

- 42.8 The LFC may require the Access Seeker to provide a security check in relation to any accredited representative of the Access Seeker who applies for an access card. The LFC may reject any application based on a security check at its absolute discretion.
- 42.9 The LFC may also conduct its own security check.

Access Cards

- 42.10 The LFC will provide an access card to every successful applicant under clause 42.1. The LFC may charge for each access card in accordance with the Input Services Price List.
- 42.11 The LFC may charge the Access Seeker in accordance with the Input Services Price List for any security callout required as a result of the acts or omissions of any accredited representative of the Access Seeker.

Card activation

- 42.12 A new access card must be activated before it can be used. This may be done by contacting the LFC's NOC Operations Centre in the manner provided in the "Access Control Card Application Form".
- 42.13 Any card that is not used within three months of issue may be deactivated and removed from the system. Any card not used at all for six months will be deactivated and removed from the system.

- 42.14 Lost or damaged cards must be reported to an LFC representative as soon as practicable.
- 42.15 The Access Seeker is responsible for returning any access card to the LFC immediately upon it no longer being required.
- 42.16 The LFC may audit and monitor access card use. Breaches of the access card rules may result in withdrawal of access and/or permanent withdrawal of access to any secure the LFC Site.
- 42.17 At some LFC Sites closed circuit television may be installed to supervise general site security and to log events within particular areas of the LFC Site. Recorded images are monitored to improve general site security.

PART 12 – OPERATIONAL READINESS PROGRAMME

43. Access Seeker on Boarding

43.1 The Operational Readiness Programme is the programme of work to be undertaken jointly by the LFC and the Access Seeker as part of an on boarding process as the Access Seeker prepares for connection to the LFC Network, including;

43.1.1 the establishment of commercial relationships;

43.1.2 set up of OSS/BSS interfaces;

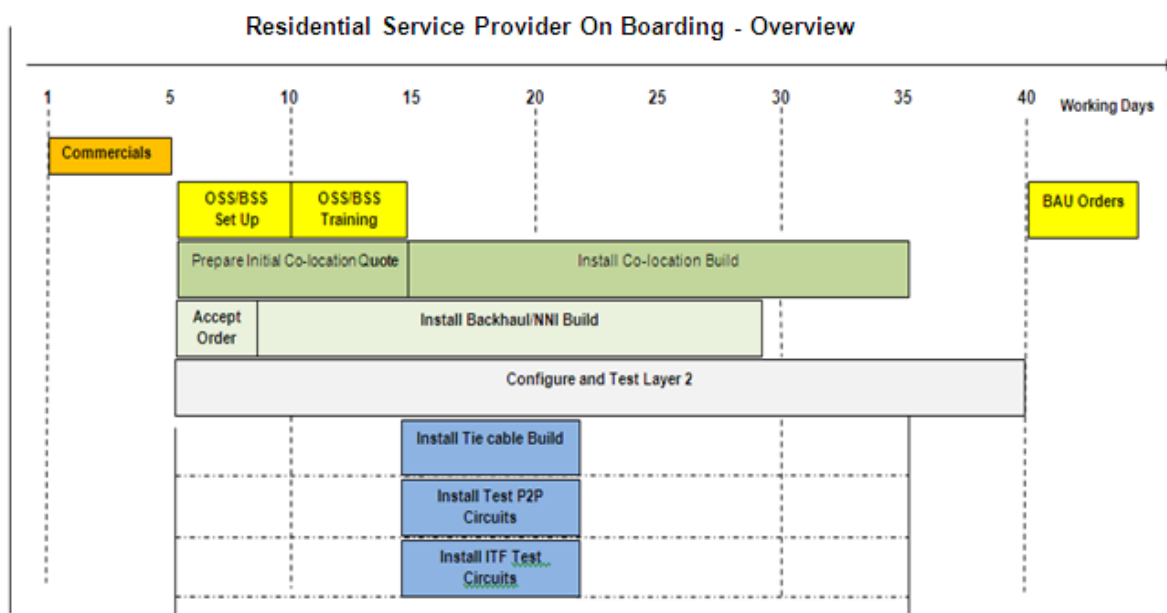
43.1.3 build of Footprints (if required);

43.1.4 build of UFB Handover Connections and associated circuits (if required);

43.1.5 training as per clauses 43.9 and 43.10; and

43.1.6 the testing and commissioning of processes, products and interfaces (including layer 2 interoperability).

43.2 Each task within the on-boarding plan has appropriate service levels, milestones, the LFC and Access Seeker requirements. The diagram below provides an overview of the plan.



Note: In the above table, the Access Seeker is the “Residential Service Provider”.

Commercials

43.3 The Access Seeker needs to sign an Input Services WSA and meet the requirements of the Input Services WSA General Terms before they can take the Input Central Office and POI Co-location Service.

43.4 The Access Seeker must provide all information required in a timely manner. Delays may mean that relevant Service Level timings are extended. This information includes details of insurance, credit guarantee and contact information for the Input Services WSA.

- 43.5 The LFC is required to check in a timely matter all supplied documentation for accuracy, obtain internal sign off, execute contract, set up of accounts and allocation of account management resource (AM/SDM).

OSS/BSS

- 43.6 OSS/BSS is required to enable the Access Seeker to place and track Input Services Service Requests for the Input Central Office and POI Co-location Service to report faults and to obtain other operational information. Initially the CO and POI service request will be done by Email. (See Appendix G)
- 43.7 The Access Seeker needs to have the B2B/SSP system in place and staff available for training in the use of those systems.
- 43.8 Set up of the OSS/BSS requires the LFC to allocate passwords and test interfaces including processing trial Input Services Service Requests.
- 43.9 The LFC will provide training to the Access Seeker staff which includes:
- 43.9.1 explanation of guides, products, processes, procedures and tools;
 - 43.9.2 submission of test Input Services Service Requests;
 - 43.9.3 handling exceptions; and
 - 43.9.4 Q&A.
- 43.10 The LFC will provide reasonable initial set up training consisting of a workshop held at a location determined by the LFC. The workshop will address:
- 43.10.1 overview of forecasting templates;
 - 43.10.2 overview of forms for Input Services Service Requests;
 - 43.10.3 basic details of OSS/BSS (including demonstration of the system);
 - 43.10.4 overview of billing and accounts; and
 - 43.10.5 Q&A.
- 43.11 The Access Seeker will ensure that a reasonable number of staff (up to a maximum number of 10 per session) attend any training provided by the LFC.
- 43.12 Any additional training required by the Access Seeker beyond reasonable initial set-up training (up to 50 hours) will be charged for by the LFC in accordance with the Input Services Price List.

Co-location

- 43.13 If an Access Seeker requires co-location space it can place initial Input Services Service Requests with all required information when signing the Input Services WSA or it can wait until the OSS/BSS or email ordering is in place and its staff are trained in its use.
- 43.14 The LFC will provide quotes for Co-location Build, once these are accepted, Co-location Build will commence subject to the provision of any materials or information required from the Access Seeker. On acceptance of the LFC Build the Footprints will be handed over to the Access Seeker.

Handover Connection or backhaul

- 43.15 If an Access Seeker requires a UFB Handover Connection Service or backhaul it can place manual Input Services Service Requests with all required information when signing the Input Services WSA or it can wait until the OSS/BSS is in place and the Access Seeker's staff are trained in its use. Request by email can be submitted at any time as long as it has the required information.
- 43.16 The LFC Build will commence subject to the provision of any materials or information required from Access Seeker. On completion of joint testing the links will be handed over to the Access Seeker.

Tie Cables

- 43.17 If an Access Seeker requires Tie Cables for its co-location space, it can place manual Input Services Service Requests with all required information when signing the Input Services WSA or it can wait until the OSS/BSS or email ordering is in place and the Access Seeker's staff are trained in its use.
- 43.18 The LFC will provide quotes for Tie Cable build, once these are accepted LFC Build will commence, subject to the provision of any materials or information required from Access Seeker. On completion of the LFC Build the Tie Cables will be handed over to the Access Seeker.

Testing

- 43.19 If an Access Seeker requires test circuits they can place manual Input Services Service Requests with all required information when signing the Input Services WSA or they can wait until the OSS/BSS is in place and the Access Seeker's staff are trained in its use. The LFC will provide test circuits for Access Seeker and if required, trial fault and relinquish them.
- 43.20 If a UFB Handover Connection Service has been requested, once it is installed and the Access Seeker has all its equipment installed and available for testing. The LFC will undertake a series of end to end layer 2 testing scenarios with the Access Seeker. The service level assumes all test milestones passed on first attempt with no remedial work required.

BAU

- 43.21 Once on boarding and testing is successfully completed the Access Seeker can commence placing Input Services Service Requests for the Input Central Office and POI Co-location Service.

APPENDIX A – GLOSSARY

**IF A DEFINITION APPEARS IN THE TABLE BELOW THEN THAT PREVAILS, OTHERWISE
SEE OPERATIONS MANUAL FOR CENTRAL OFFICE AND POI CO-LOCATION SERVICE –
APPENDIX A - GLOSSARY**

Term	Definition
Distribution Fibre	means the definition described in the PONFAS Service Description.
Feeder Fibre	means the definition described in the PONFAS Service Description.
Input Central Office and POI Co-location Service	means the service described in the Input Central Office and POI Co-location Service Description.
Input Direct Fibre Access Service	means the service described in the Input Direct Fibre Access Service Description.
Input Services	means the services described in the Service Descriptions for PON Fibre Access Service (PONFAS), Input Direct Fibre Access Service (iDFAS) and Input Central Office and POI Co-location Service.
Internal Termination Point or ITP	means the SC or LC connector that terminates the Input Direct Fibre Access or PONFAS Distribution Fibre Service inside the End User's Premises.
PON Fibre Access Service or PONFAS	means the service described in the PONFAS Service Description.
PONFAS Distribution Service	means the definition described in the PONFAS Service Description.
PONFAS Feeder Service	means the definition described in the PONFAS Service Description.
Splitter	means the definition described in the PONFAS Service Description.
Tie Cables	means an internal cable from the Central Office MOFDF to the Access Seeker Footprint provided on request to an Access Seeker who taken an Input Fibre Access Service and a co-location footprint.
Co-location Project Manager	means the persons nominated as such by each party in accordance with section 2, and who has the responsibilities set out in clause 2.2.

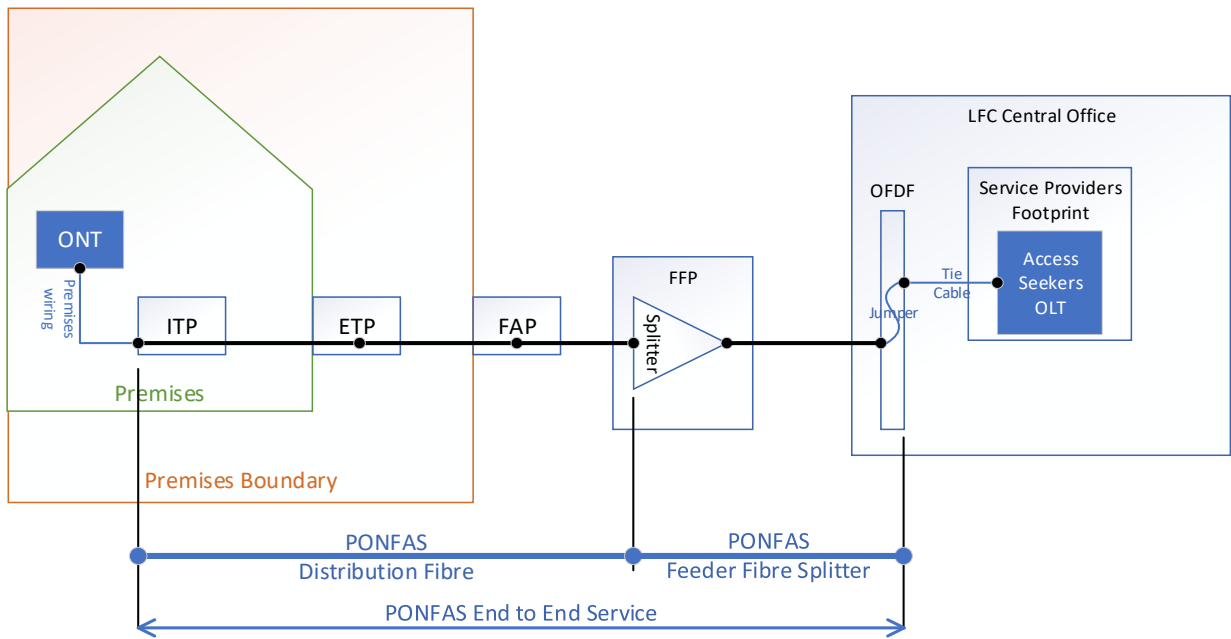
APPENDIX B - ESCALATION PROTOCOL

**NOT USED. PLEASE CONTACT YOUR SERVICE DELIVERY MANAGER
OR ACCOUNT MANAGER IF YOU REQUIRE A COPY OF
ULTRAFAST FIBRE'S ESCALATION PROTOCOL**

APPENDIX C - FORECASTING SPREADSHEET

NOT USED. PLEASE CONTACT YOUR ACCOUNT MANAGER IF YOU REQUIRE A COPY OF THE ULTRAFAST FIBRE FORECASTING SPREADSHEET

APPENDIX D - DIAGRAM



APPENDIX E - OPTICAL FIBRE SPECIFICATION

Technical Specification

Fibre	External fibre must comply with ITU-T specification G.652D. Internal building fibres may comply with ITU-T G.657A but cable must meet appropriate fire regulations i.e. be Flame-Retardant, Non Corrosive, Low Smoke, No Halogen (FRNC/LSNH).
Connector Type	Fibre terminations must be SC/APC type connectors (complying with the IEC 61754-4 standard) or alternatively LC/APC type connectors (complying with the IEC 61754-20 standard) as appropriate.

APPENDIX F - CANDIDATE POI AND CENTRAL OFFICES

**NOT USED. PLEASE REFER TO THE ULTRAFAST FIBRE WEBSITE –
WWW.ULTRAFAST.CO.NZ**

APPENDIX G - LFC CONTACT DETAILS

LFC General Enquiries including Provisioning and Business Continuity Email: servicedesk@ultrafast.co.nz Phone: 0800 833 622; option 1	Enquiries relating to provisioning requests placed with the LFC Service Desk
LFC NOC (also known as the LFC Network Management Centre (or LFC NMC)) Email: faults@ultrafast.co.nz Phone: 0800 833 622; option 3	Enquiries about faults or network events
LFC Finance Team Email: accounts@ultrafast.co.nz	Enquiries about accounts or billing.