

Tuatahi First Fibre Services Agreement

Operations Manual

Input Direct Fibre Access Service & PONFAS

Version 1.0.1

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Part 1 – Document Information

1 Introduction

- 1.1 This Operations Manual (**Manual**) is part of the WSA and sets out the operational processes and procedures for supply of the Input Direct Fibre Access Service (**iDFAS**) and PON Fibre Access Service (**PONFAS**), which includes both a Distribution Fibre and Feeder Fibre Service. These services will be jointly referred to as **Input Fibre Access Services** in this document.
- 1.2 This Manual should be read in conjunction with the other documents which make up the WSA, in particular the General Terms.
- 1.3 This Manual may be changed in accordance with the change mechanism set out in clause 24 of the General Terms.
- 1.4 The LFC will make the current version of this Manual available on the LFC website accessible by the Service Provider.
- 1.5 References to Service Level Terms are references to the Service Level Terms for Input Fibre Access Services.
- 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 General Terms. Otherwise, the definitions set out in the General Terms apply.

2 People and Contact Details

- 2.1 Immediately following the issue of the first Service Request for an Input Fibre Access Service by the Service Provider, the Service Provider 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 Fibre Access Service. (This 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 Fibre Access Service. For the LFC this will usually be the Provisioning Manager for the relevant Service Provider.
The LFC only provides Service Delivery Manager. (This must include the Service	This is the person responsible for service delivery of the Input Fibre Access Service to the Service Provider.

Contact and detail required	Purpose
Delivery Manager's email address, mobile and work telephone numbers.)	
The LFC only provides Provisioning Manager. (This must include the Provisioning Manager's email address, mobile and work telephone numbers.)	This is the person responsible for the provisioning of the Input Fibre Access Services to the Service Provider.
The LFC only provides email address for submission of Forecasts.	This is the email address to which the Service Provider must send Forecasts.
Service Provider only provides Provisioning and Forecasting Manager. (This must include the Provisioning and Forecasting Manager's email address, mobile and work telephone numbers.)	This is the Service Provider's counterpart to the LFC Provisioning Manager.
Service Provider only provides names and email addresses of one or two people to become OSS/BSS and OSS/BSS user administrator.	These people will manage the creating and disabling of Service Provider staff accounts to access the OSS/BSS and OSS/BSS websites.
Service Provider 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 Service Provider's eBills can be viewed and downloaded.
Service Provider only provides people who are authorised to download the Price List file.	These are the people who will be set up with access to the LFCs secure web portal where the Price List file can be viewed and downloaded.
Service Provider only provides Service Requests confirmation email address.	This is the email address to which the LFC will send confirmation of Service Requests in cases where the Service Provider has submitted a provisioning request via email.
The LFC only provides fault reporting contact details. (This must include a fault reporting service number.)	These are the contact details the Service Provider must use for the reporting of faults in instances where the LFC has advised that OSS/BSS is unavailable under clause 11.5 below.
The LFC only provides business continuity email address.	This is the email address to send forms to under clause 7.19 to 7.22
The LFC only provides billing team email address.	This is the email address to which the Service Provider will send billing queries under clause 19.7.

Contact and detail required	Purpose
Service Provider 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.
Service Provider only provides contact for faults. (This 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.
Service Provider only provides Contact for Service Level and other performance reports generated by the LFC. (This 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 Service Provider 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 Service Provider'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 Service Provider or the LFC need to undertake; and
- 3.1.5 The Service Provider'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 Service Provider and the LFC must:

- 3.2.1 Apply the technical manual or user guide under the terms of the WSA in good faith;
- 3.2.2 Interpret the technical manual or user guide consistently with the terms of the 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 Service Provider via the LFC website as soon as practicable after the issue of the first Service Request for an Input Fibre Access Service by the Service Provider or following an earlier request from the Service Provider. 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 Fibre Access Services.
- 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 General Terms, subject to clause 4.3.
- 4.3** In some parts this Manual provides that any dispute in relation to a particular issue will be of a technical, operational or implementation nature, which requires significant investigation of factual matters. The most efficient mechanism for resolving these issues is escalation in accordance with Appendix B, but neither party is precluded from issuing a dispute notice under clause 20.2 of the General Terms at any time.

5 Prerequisites

- 5.1** In addition to the commercial prerequisites set out in clause 2.2 in the General Terms, the Service Provider must satisfy the following operational prerequisites in relation to the Input Fibre Access Services:
- 5.1.1 Execution of the WSA;
 - 5.1.2 Set up of the OSS/BSS so Service Requests can be placed;
 - 5.1.3 Service Provider staff trained in use of OSS/BSS to place and track Service Requests and faults;
 - 5.1.4 Build of first co-location Footprint;
 - 5.1.5 Build of first Tie Cable; and
 - 5.1.6 Place a forecast of expected demand.
- 5.2** The Service Provider and the LFC may enter into a non-disclosure agreement covering discussions prior to the Service Provider placing a Service Request for the Input Fibre Access Services (but neither the LFC nor the Service Provider will be under any obligation to do so).
- 5.3** The Service Provider Operational Readiness Process in Part 10 will be followed for the set up of a new Service Provider involving (as required) the establishment of commercial relationships, co-location, OSS/BSS interfaces and interconnection links.

- 5.4** The Service Provider must ensure that the prerequisites specified in this clause are complied with on an ongoing basis (including where applicable, in respect of each Input Fibre Access Service) while that Service Provider continues to receive the Input Fibre Access Service..

Part 2 – Forecasting

6 Service Provider Forecasting

Introduction

- 6.1** Forecasting is required from the Service Providers to ensure that the LFC has the resources in terms of network capacity, technicians, and materials to efficiently meet the volume of Service Requests within the agreed Service Levels set out in the Service Level Terms for Input Fibre Access Services. This takes the form of a rolling monthly volume forecast by each Service Provider, provided through the completion and submission to the LFC of Forecasting Reports in accordance with clause 11 of the General Terms and as further described in this clause 6.
- 6.2** The Service Provider must use all reasonable endeavours to provide the LFC with accurate forecasts.
- 6.3** The Service Provider's forecasts are Confidential Information for the purposes of clause 15 of the General Terms.
- 6.4** In this clause 6:

Forecast Coverage Area means a Candidate Area;

Forecast Service Request means a future Service Request that the Service Provider is forecasting it will make in the Service Request Month, as reported in a Forecasting Report;

Forecasting Report has the meaning given in clause 11.1 of the General Terms;

Month [x] means the calendar month that is x calendar months before a Service Request Month; and

Service Request Month means the calendar month in which a Forecast Service Request is forecast to become a Service Request.

Forecasting Reports

- 6.5** Within the period of 10 Business Days following the last day of each calendar month, the Service Provider will submit to the LFC a Forecasting Report for the period commencing on the first day of the following month in the manner and form prescribed by the LFC from time to time (a sample is attached as Appendix C), provided that any changes to the manner and form are no more onerous for the Service Provider (acting reasonably) than existed prior to such change.
- 6.6** Each Forecasting Report is to set out the Service Provider's forecast for the volume of orders for Input Fibre Access Services for each month of the period of 6 consecutive months in which the forecast provided by reference to each applicable Forecast Coverage Area. The Service Provider is also required to provide a forecasts for months 7 to 12. This is optional and will be treated as indicative by the LFC.

- 6.7** If the Service Provider is aware that volume is not likely to be evenly distributed within a Forecast Coverage Area over a Service Request Month (for example due to Bulk ServiceRequests), it should ensure that the Forecasting Report for that Service Request Month itemises Forecast Service Requests on a per week or per Business Day basis (as applicable and to the extent required to reflect the forecast variation in distribution of volume).
- 6.8** If a Forecasting Report does not specify a weekly or daily Forecast Service Request volume for any Forecast Coverage Area, Forecast Service Requests for that Forecast Coverage Area will be deemed to be evenly spread across the applicable Service Request Month.
- 6.9** The LFC may make a reasonable request that the Service Provider provide additional information to the LFC in support of a Forecasting Report already provided. Following receipt of such a request, the Service Provider will prepare the requested information with reasonable care and provide it within a reasonable period.

Bulk Service Request Forecasts

- 6.10** A Bulk Service Request is either:
- 6.10.1 A bulk transfer which is the transfer, in a coordinated manner with project management oversight, of multiple End Users onto services based on the Direct Fibre Access Service supplied to the Service Provider; or
 - 6.10.2 A bulk New Connection which is the connection, in a coordinated manner with project management oversight, of multiple new Connection Service Orders for single or multiple End Users.
- 6.11** As Bulk Service Requests are carried out in accordance with an agreed plan negotiated with the Service Provider they are treated as Service Provider negotiated terms with respect to the applicable dates requested and agreed for provisioning Service Levels set out in the Service Level Terms.
- 6.12** Forecasts for Bulk Service Requests must be included in the Forecasting Report and may also be provided separately as a Bulk Service Request Forecast. For any proposed Bulk Service Request the Service Provider must notify (via its forecasts) the LFC of a Bulk Service Request at least three months before the date on which the Service Provider proposes the Bulk Service Request to commence, to enable the actual date(s) for delivery to be mutually agreed with between the LFC and Service Provider.

Part 3 – Pre-Qualification and Provisioning

7 The OSS/BSS System

- 7.1 OSS/BSS allows the Service Provider to log on to a secure site for the placing and monitoring of Service Requests and Service Orders with the LFC.
- 7.2 Subject to the provisions below relating to business continuity, all Service Requests for the Input Fibre Access Service must be placed using OSS/BSS. Except as expressly provided elsewhere in this Manual, any Service Requests that the Service Provider attempts to place by other means (for example, by email or by fax) will be invalid and maybe disregarded by the LFC. The LFC will use all reasonable endeavours to notify the Service Provider if such invalid Service Requests have been received.
- 7.3 OSS/BSS allows the Service Provider to:
- 7.3.1 Submit and track the status of Service Requests; and
 - 7.3.2 Update existing Service Requests (up to the time they are accepted and become Service Orders).
- 7.4 Service Providers requesting project management of Bulk Service Request as described in clause 6.10, must contact their LFC Service Delivery Manager to agree the date of the scheduled work. Project management of multiple coordinated Service Orders will be charged in accordance with the Price List.

B2B

- 7.5 The Service Provider can choose to directly integrate its systems with OSS/BSS via the OSS/BSS Business to Business Web Services Interface (B2B). If the Service Provider 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

- 7.6 The LFC will provide reasonable initial set up training on OSS/BSS as part of the operational readiness process detailed in Part 10.

Access to OSS/BSS

- 7.7 The Service Provider 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 Service Provider staff accounts to access OSS/BSS.
- 7.8 On request from the Service Provider, the LFC will reset, disable, or alter the user administrator accounts.
- 7.9 Subject to clause 7.10 the LFC may restrict or prohibit access to OSS/BSS if any of the Service Provider's staff or systems:

- 7.9.1 Perform malicious or unintentional actions that damage or may potentially damage OSS/BSS;
- 7.9.2 Use OSS/BSS in an unauthorised manner or in such a way that causes or may cause material performance issues; or
- 7.9.3 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.

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

Additional Functionality or Enhancements to OSS/BSS

- 7.11 The LFC will not be responsible for any costs associated with integration of the Service Provider's own systems to the OSS/BSS 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, RSPs 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. RSPs will be given 90 days' written notice of any change that will prevent their use of the next release version.
- 7.12 The Service Provider 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).
- 7.13 The Service Provider 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 (refer to Appendix G for contact details).

As at the date of this Operations Manual, these documents are available at:
www.tuatahifibre.co.nz.

OSS/BSS Costs

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

- 7.16** The Service Provider must only use OSS/BSS for purposes authorised by the LFC.
- 7.17** The LFC will use all reasonable endeavours to ensure that OSS/BSS is available to Service Providers 24 hours a day, 7 days a week.
- 7.18** 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

- 7.19** If the LFC advises the Service Provider that OSS/BSS is unavailable, the Service Provider may submit provisioning requests by emailing the relevant form to the LFC as outlined below.
- 7.20** The LFC will make the following business continuity forms available to the Service Provider:
- 7.20.1 Pre-qualification (manual);
- 7.20.2 Input Fibre Access Service;
- Transfer form;
 - New Connection form; and
 - relinquishment form.
- 7.21** All business continuity forms submitted in accordance with this clause should come from a generic mailbox. This mailbox must include the Service Provider's name in the email subject line as below:

[Input Fibre Access Form Name] - [Service Provider Name] - [Service Provider reference number]

- 7.22** Once completed, business continuity forms must be sent to the business continuity email address advised by the LFC in accordance with Appendix G.

8 Pre-qualification

Pre-qualification

- 8.1** Pre-qualification is a service that enables the Service Provider to:
- 8.1.1 Confirm if the given address is within the area of geographical coverage of the applicable Input Fibre Access Service; and
- 8.1.2 Determine when the applicable Input Fibre Access Service will be available in the future for areas outside of the current coverage.
- 8.1.3 Determine information about cabinet (i.e. FFP) for the PONFAS – Feeder Fibre Service.

8.2 There are two types of pre-qualification:

8.2.1 Automated Pre-qualification (addresses or FSLs); and

8.2.2 Special Manual Pre-qualification investigation (addresses).

8.3 Automated Pre-qualification will be provided through OSS/BSS. In addition to this, the B2B interface will provide pre-qualification functionality. Pre-qualification Service Requests will be processed as set out below

Information Supplied – Automated Pre-qualification

8.4 The Service Provider will supply the item to be pre-qualified. That item may either be an existing service address or an existing FSL identifier.

8.5 For an existing address to be pre-qualified, the LFC will need to identify an individual FSL at the specified address. If the LFC is unable to automatically identify an address location, a Special Manual Pre-qualification will be required for the given address.

Information Returned – Automated Pre-qualification

8.6 The information returned by OSS/BSS may include:

8.6.1 Where an address is provided, the FSL;

8.6.2 The Premises are available to be connected;

8.6.3 Details for the PONFAS Feeder Fibre and cabinet (e.g. FFP);

8.6.4 The FSL or the address is not found;

8.6.5 The FSL provided is an invalid format;

8.6.6 Search could not be done, platform is not available;

8.6.7 Central Office identifier;

8.6.8 The type of Premises e.g. MDU or Single Dwelling Unit;

8.6.9 If the requested address is within the Candidate Area but service is not available, the date it is expected to be available;

8.6.10 Whether further investigation is required to determine if the Input Fibre Access Service can be provided. If the Service Provider chooses to request such further investigation this can be done using the Special Manual Pre-qualification Investigation process described in clause 8.7;

Special Manual Pre-qualification Investigation

8.7 A Special Manual Pre-qualification Investigation is carried out in circumstances where the Service Provider wishes to obtain information about a new address or where a Service Provider wishes to carry out further investigation after an Automated Pre-qualification Service Request.

- 8.8** For a Special Manual Pre-qualification Investigation the Service Provider must submit the item to be pre-qualified via OSS/BSS or by email as outlined in clauses 7.19 to 7.22. If it is a new address, all address elements must be provided (street name, number etc).
- 8.9** The information returned will include:
- 8.9.1 Central Office identifier;
 - 8.9.2 The type of Premises e.g. MDU or Single Dwelling Unit;
 - 8.9.3 The optical budget for an Input Direct Fibre Access Service if asked for (actual optical budget if there is existing fibre to address or estimated optical budget if there is no existing fibre to address);
 - 8.9.4 List of Input Fibre Access Services available at the End User Premises for the address or FSL submitted, and notes on whether there is a limitation on the throughput available to the End User due to the infrastructure available; and/or
 - 8.9.5 Whether the Input Fibre Access Service can be provided.
- 8.10** For each pre-qualification Service Request that is received by the LFC, the LFC will provide the Service Provider with acknowledgement of receipt of the Service Request.
- 8.11** Charges for pre-qualification are set out in the Price List.
- Initial delivery**
- 8.12** Initially the LFC may not have inventory systems that will enable automation of the pre-qualification process and the LFC will therefore provide the geographic availability information in a more manual form.
- 8.13** The LFC will provide the Service Provider with geographic availability and roll out information in the form of spreadsheets, databases, and geo-mapping shape files, containing Premises' addresses.
- 8.14** These initial information sources will be updated on a monthly basis until an automated process is available.
- Site Investigation**
- 8.15** A site investigation is carried out in circumstances where the Service Provider wishes to obtain information about an address, or the auto pre-qualification gave a negative response for a connection.
- 8.16** For site investigation the Service Provider must submit the item to be investigated via OSS/BSS or by email as outlined in clauses 7.19 to 7.22. If it is a new address, all address elements must be provided (street name, number etc).
- 8.17** The information returned will be, where possible, responses to requests made by the Service Provider.
- 8.18** If the Service Provider wants to proceed with an order, it needs to apply through the OSS/BSS system for the connection and reference back to the pre-qualification number.

- 8.19 For each site investigation Service Request that is received by the LFC, the LFC will provide the Service Provider with acknowledgement of receipt of the Service Request.
- 8.20 Charges for site investigation are set out in the Price List.

9 Service Requests Processing

Service Request types

- 9.1 The following types of Service Requests may be submitted using the relevant web form in OSS/BSS or B2B Gateway:
- 9.1.1 Pre-qualification / site investigation;
 - 9.1.2 New Connection;
 - 9.1.3 Intact Connection;
 - 9.1.4 Handover Connection;
 - 9.1.5 Move Address;
 - 9.1.6 Modify Service Order;
 - 9.1.7 Diversity;
 - 9.1.8 Transfer; and
 - 9.1.9 Relinquishment.
- 9.2 These Service Requests will be processed as outlined below.
- 9.2.1 For each Service Request that is submitted either via OSS/BSS or by email as outlined in clause 7.19 to 7.22, the Service Provider must complete all of the fields on the relevant form that are marked as mandatory.
 - 9.2.2 The LFC will acknowledge receipt of each Service Request.

Business Hours

- 9.3 Service Requests will only be processed by the LFC during Business Hours except where explicitly required by the Service Level Terms.
- 9.4 All Service Requests entered into OSS/BSS by Service Providers 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.

Service Request Validation

- 9.5 A Service Request will be deemed invalid and may be rejected by the LFC if:
- 9.5.1 It is not submitted in accordance with this Manual; or

- 9.5.2 One or more of the rejection reasons (a list of which will be available on the LFC website) apply; or
 - 9.5.3 The Service Provider does not have capability at the required Handover Point to access and interconnect with the Input Fibre Access Service (by co locating their equipment at the Central Office).
- 9.6** The LFC will perform a validation check of each Service Request that it receives. That validation check will determine whether the Service Request complies with the requirements of clause 9.5.
- 9.7** If a Service Request is rejected, the LFC will advise the Service Provider of that rejection and provide the Service Provider with the applicable rejection reason.
- 9.8** The LFC will waive immaterial irregularities and process Service Requests where the intention is unambiguous. Examples of such irregularities include:
- 9.8.1 Use of different conjunctions (e.g. '&' instead of 'and');
 - 9.8.2 Improper application or omission of apostrophes;
 - 9.8.3 Variations in letter case;
 - 9.8.4 Use of initials instead of first names, or vice versa; and
 - 9.8.5 Names where letters have been accidentally transposed but the meaning is still clear (e.g. Dominoin = Dominion).

Service Start Date

- 9.9** If a Service Request is accepted and becomes a Service Order, the LFC will either:
- 9.9.1 Advise the Service Provider of an expected Service Start Date, (where applicable for the type of Service Order involved);
 - 9.9.2 Confirm with the Service Provider the expected Service Start Date is the date they have requested; or
 - 9.9.3 Where there are infrastructure capacity constraints, advise the Service Provider the Service Order is a 'waiter' and provide an approximate Service Start Date. When infrastructure becomes available the Service Provider will be advised of an expected Service Start Date. The existence of an infrastructure constraint does not represent an extension of the lead-time Service Levels as set out in the Service Level Terms.
- 9.10** If the Service Start Date agreed between the LFC and the Service Provider in clause 9.9 is outside the standard lead-time applicable to the type of Service Order involved, this does not constitute a failure to meet the standard lead-time Service Levels. Completion of the Service Request by the LFC on the Service Start Date agreed between the LFC and the Service Provider will not constitute a failure to meet the Service Level for meeting the expected Service Start Date in the Service Level Terms.
- 9.11** The LFC will use all reasonable endeavours to meet the notified expected Service Start Date as provided in clause 9.9.

- 9.12** Where the LFC becomes aware that it will be unable to meet the expected Service Start Date notified under clause 9.9, the LFC will advise the Service Provider 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.

Updating Service Requests and Service Orders

- 9.13** A Service Request or Service Order may be cancelled at any time before the Service Start Date. For a new connection, where a Service Request is cancelled within 3 Business Days before the Service Start Date for Residential Connections and within 5 Business Days before the Service Start Date for Business Connections, the LFC may charge the Service Provider, in accordance with the charges set out in the Price List, for costs it has incurred in processing the Service Request.

- 9.14** The Service Provider may change an existing Service Request or Service Order that has been submitted using OSS/BSS provided that changes to an existing Service Request or Service Order by a Service Provider can only be made within 3 Business Days of the Service Start Date for Residential Connections and 5 Business Days of the Service Start

Date for Business Connections if the LFC has given its consent in writing to the change, that consent not to be unreasonably withheld. The LFC may charge a Service Provider, in accordance with the charges set out in the Price List, for costs it has incurred to date in processing the Service Request or Service Order (including any truck roll)

- 9.15** If the Service Provider changes an existing Service Request or Service Order, under clause 9.14:

9.15.1 The LFC will notify the Service Provider of a revised expected Service Start Date (where applicable to the type of Service Order involved); and

9.15.2 All of the relevant Service Levels for that Service Order, as defined in the Service Level Terms, will be restarted and measured as from the revised Service Start Date.

Completion of a Service Order

- 9.16** The LFC will provide the Service Provider with confirmation that provisioning of a Service Order has been completed which may be before a Service Order has been completed if additional commercial work is being carried out. This confirmation will include the FSL.

- 9.17** Service Order confirmations submitted to the Service Provider outside of Business Hours will be deemed to have been received by the Service Provider at the beginning of the first Business Hour of the following Business Day.

Testing

- 9.18** At the completion of an Input Fibre Access Service installation the LFC will carry out testing as described in the PONFAS or Input Direct Fibre Access Service Descriptions.

Charges

- 9.19** Charges for all the transactions, processes and services referred to in this section are set out in the Price List. Charges may only be made for valid Service Orders following the validation provided for in clause 9.6.

Authorisation for Transfer Service Requests

- 9.20** Transfer Service Requests where an End User is transferring from one Service Provider (or Service Providers as the case may be) to another Service Provider are subject to clauses 9.2 and 9.23.
- 9.21** Service Providers must obtain Customer Authorisation to these transfers, in accordance with the terms of the Customer Transfer Code, before the relevant Service Request is submitted.
- 9.22** The LFC is entitled to rely on the Transfer Service Request as evidence that a valid Customer Authorisation has been obtained in accordance with the Customer Transfer Code. The LFC is not liable in the event that authorisation is found to be invalid or not in accordance with the Customer Transfer Code.

Submitting Bulk Service Requests

- 9.23** Bulk Service Requests enable a Service Provider to transfer or connect large volumes of End Users to the Input Fibre Access Services in a co-ordinated manner.
- 9.24** Service Providers should contact their LFC Service Delivery Manager to discuss the requirements and timeframes of any Bulk Service Requests before placing a Bulk Service Request.
- 9.25** Once a Bulk Service Request has been placed, the LFC and the Service Provider will agree on a plan that describes how the Bulk Service Requests will be managed and carried out (including details of the dates on which the relevant batches of individual transfers will take place and, where appropriate, the resources to be used).

Relinquishment Requests

- 9.26** Each Input Fibre Access Service is subject to a Minimum Service Term. A Service Provider that terminates or relinquishes an Input Fibre Access Service prior to the expiry of the Minimum Service Term may be required by the LFC to pay an early termination charge in accordance with the Price List.

Part 4 – Problem Management

10 OSS/BSS

- 10.1** The LFC will in the future have a web-based and B2B gateway fault management system as part of the OSS/BSS described in section 7 above. If the web-based or B2B system is unavailable refer to Appendix G (LFC Contact Details) for the appropriate contact person or contact information. In addition to processing Service Requests and Service Orders the OSS/BSS allows Service Providers to:
- 10.1.1 Create a new trouble ticket;
 - 10.1.2 Retrieve a trouble ticket; and
 - 10.1.3 Update a trouble ticket.
- 10.2** OSS/BSS allows the Service Provider to log on to a secure site for reporting and monitoring faults with the LFC.

11 Faults

- 11.1** The LFC is only responsible for faults that are within the LFC's responsibilities, as set out in clause 6 of the 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 Service Provider the "no fault found fee" as set out in the Price List. Where the LFC is responsible for the fault, a "no fault found" fee will not be charged.
- 11.2** It is the Service Provider'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).
- 11.3** The requirements for this initial fault diagnosis are set out in clause 6.2 of the General Terms.
- Reporting Faults to the LFC**
- 11.4** Subject to clause 11.5 the Service Provider must use OSS/BSS for reporting all faults regarding the Input Fibre Access Service. If the Service Provider uses any other method to report a fault, the Service Levels as defined in the Service Level Terms will not apply to that fault.
- 11.5** Where OSS/BSS is unavailable, the Service Provider must submit fault reports to the LFC by referring to Appendix G (LFC Contact Details) for the appropriate contact person or contact information. The LFC must use all reasonable endeavours to advise Service Providers immediately upon becoming aware that the OSS/BSS is unavailable.
- 11.6** Once the Service Provider has provided initial fault diagnosis, complied with clause 6 of the General Terms and determined that it requires the LFC's assistance to resolve the fault, the following information is required when reporting a fault:
- 11.6.1 Contact name and phone number of the Service Provider staff member logging the fault;
 - 11.6.2 Contact name, phone number, and alternate phone number of the End User experiencing the fault (where reasonably required);
 - 11.6.3 Service identifier (e.g. Product Instance ID, FSL) for the service that is experiencing the fault (where appropriate);

- 11.6.4 Fault type and description;
- 11.6.5 Time the fault occurred;
- 11.6.6 Address and contact details for the site of the fault (where appropriate);
- 11.6.7 Confirmation that the initial fault diagnosis has been completed; and
- 11.6.8 Any other relevant information reasonably required.

11.7 If any of the above information in clauses 11.6.1 and 11.6.8 is not provided, the Service Levels will not apply.

Hours of Operation

11.8 Faults can be logged 24 hours a day, seven days a week.

11.9 If a fault is logged outside of Business hours, it is possible the LFC will only start working on the fault as from 7.00am the following day. Extended fault restoration hours apply for enhanced service levels and emergency faults.

11.10 When a fault report is received, the LFC will advise the Service Provider, acknowledging receipt of the fault report.

Fault Tracking

11.11 All faults will be logged in OSS/BSS and the Service Provider 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.

11.12 The LFC will use all reasonable endeavours to meet the notified expected fault restoration time as provided in clause 34.11.

11.13 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 Service Provider 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.

11.14 The Service Provider 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.

11.15 If the LFC identifies the need to send a faults contractor, the LFC will update OSS/BSS.

11.16 The Service Provider's helpdesk is responsible for coordinating site access and any required outage window with the End User.

Fault Closure

11.17 Once the fault has been resolved, the LFC will notify the Service Provider 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.

Planned Outages

11.18 The LFC may suspend supply of the Input Fibre Access Service for the purpose of conducting works, routine maintenance, remedial work, upgrades to the LFC's Network, and planned migrations from a temporary POI to a permanent POI (**Planned Outage**).

11.19 The LFC will use all reasonable endeavours to:

- 11.19.1 Conduct any Planned Outage between the hours of 11.00pm to 6.00am inclusive, where the LFC believes that is practical (acting reasonably);

- 11.19.2 Advise the Service Provider in advance of any Planned Outage; and
- 11.19.3 Provide the following information:
- A brief explanation of the reason for the Planned Outage;
 - The intended date, time and duration of the Planned Outage;
 - A description of the Central Office and POI Co-location Service (or the relevant part of it) which will be affected by the Planned Outage; and
 - The name and contact details of the LFC's representative(s) who gave the advice.

Unplanned Outages

- 11.20** The LFC may suspend supply of the Input Fibre Access Service:
- 11.20.1 Due to any unplanned unavailability of the LFC's Network or the Input Fibre Access Services; or
- 11.20.2 In order to provide or safeguard service to the emergency or other essential services,
- (referred to as an Unplanned Outage).
- 11.21** The LFC will use all reasonable endeavours to:
- 11.21.1 Give the Service Provider as much advice as possible of the existence of any Unplanned Outage;
- 11.21.2 Advise the Service Provider as soon as reasonably practical after the LFC becomes aware of any Unplanned Outage; and
- 11.21.3 Answer any reasonable questions from the Service Provider about the extent and duration of any Unplanned Outage.
- 11.22** If the Service Provider becomes aware of any Unplanned Outage before it receives advice from the LFC under clause 11.21, the Service Provider will make reasonable efforts to notify the LFC as soon as reasonably practical.

Emergency Faults

- 11.23** Emergency and Core Network faults reported to the LFC outside of Fault Restoration Hours will be treated on a case by case basis.
- 11.24** 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 Core Network faults, or Emergency faults relating to:
- 11.24.1 Medical emergencies;
- 11.24.2 Where the End User provides an essential community service (e.g. police or a doctor's residence); or
- 11.24.3 Where there is a mass outage that impacts on 200 or more End Users.
- 11.25** The escalation protocol is provided in Appendix B.

Part 5 - Installation

12 Installation Services

12.1 Input Fibre Access Services include a Standard Install as set out below (in each case to the extent that the relevant provisioning works are not already complete for the relevant Service Order). ¹ The LFC will provide Non-Standard Installs for Input Fibre Access Services to Single Dwelling Units and Non-Standard Installs for the Fibre Lead-in to MDUs as Ancillary Services.

Provisioning at Single Dwelling Unit End User's Premises

12.2 A Standard Install for the Input Fibre Access Service to a Single Dwelling Unit includes:

- 12.2.1 a Fibre Lead-in from the Fibre Access Point to an ETP at the closest convenient point on the End User Premises, as agreed with End User, as detailed in clauses 12.13 to 12.17 below; and
- 12.2.2 an extension of the Fibre Lead-in² from the ETP (there will not necessarily be a break in the Fibre Lead-in at the ETP) to:
 - (a) a suitable mounted SC/APC³ connector at a secure location inside the End User's Premises; or
 - (b) if there is an OFDF beyond the ETP, a splice or LCA connector on the OFDF; and
- 12.2.3 installing the ITP at the location specified by the End User; and
- 12.2.4 establishing connectivity between the FFP and the ITP for the PONFAS Distribution Fibre Service, and between the CO and the ITP for the iDFAS; and
- 12.2.5 conducting an insertion loss test and confirming results are within the link loss budget (as set out in the ITU G.984 services specification); and
- 12.2.6 when requested by an End User, an OTDR test.

Provisioning at MDU End User's Premises

12.3 A Standard Install for the Input Fibre Access Services to an End User that is within a MDU (i.e. an End User Tenancy) includes:

- 12.3.1 a Fibre Lead-in from the Fibre Access Point to the OFDF or equivalent at the closest convenient point within the MDU, as agreed with the MDU owner or their agent, as detailed in clauses 12.13 to 12.17 and 12.19 to 12.27; and
- 12.3.2 where the fibre cabling in a MDU to the End User Tenancy is not already in place at the time of installation of the Input Fibre Access Service, fibre cabling within the MDU to extend the Fibre-Lead-in from the OFDF or equivalent to the End User Tenancy; and
- 12.3.3 either:

¹ Standard Install parameters may differ between LFCs.

² Standard Install distance is unlimited for residential connections and limited to 10m radius for all other connection types.

³ SC/APC – Standard Connector / Angle Polished Connector to IEC 61754-4.

- (a) a further extension of the Fibre Lead-in⁴ from the ETP at the End User Tenancy (there will not necessarily be a break in the Fibre Lead-in at the ETP) to:
 - (a) a suitable mounted SC/APC connector at a secure location; or
 - (b) if there is an OFDF beyond the ETP, a splice or LCA connector on the OFDF, within the End User Tenancy; or
- (b) if there is not an ETP at the End User Tenancy as contemplated by clause 12.3.3(a), a further extension of the Fibre Lead-in⁵ from the boundary of the End User Tenancy to:
 - (a) a suitable mounted SC/APC connector at a secure location; or
 - (b) if there is an OFDF beyond the boundary, a splice or LCA connector on the OFDF, within the End User Tenancy; and
- 12.3.4 installing the ITP at the location specified by the End User; and
- 12.3.5 establishing connectivity between the FFP and the ITP for the PONFAS Distribution Fibre Service, and between the CO and the ITP for the iDFAS; and
- 12.3.6 conducting an insertion loss test and confirming results are within the link loss budget (as set out in the ITU G.984 services specification); and
- 12.3.7 when requested by an End User, an OTDR test.

12.4 The extended LFC Network fibre within the MDU is the Fibre Lead-in to an End User Tenancy, whether currently in use or not. The Fibre Lead-in is only available for use by the LFC.

Provisioning at LFC Central Office - Tie Cable

12.5 The LFC will connect the single fibre from the LCA connector where it is terminated at the LFC's relevant Central Office MOFDF via a Tie Cable from the MOFDF to the Service Provider's Footprint within the LFC's relevant Central Office which has been installed as part of the Central Office & POI Co-location Service or Input Central Office & POI Co-location Service.

Single Dwelling Unit Termination Point (Input Direct Fibre Access and PONFAS Distribution Fibre Services)

12.6 For a Single Dwelling Unit, the termination point for the purposes of the Connection at the End User's Premises, and the network demarcation point between the LFC Network and the Premises wiring, is the ITP within the End User Premises.

MDU Termination Point (Input Direct Fibre Access and PONFAS Distribution Fibre Services)

⁴ Standard Install distance is unlimited for residential connections and limited to 10m radius for all other connection types.

⁵ Standard Install distance is unlimited for residential connections and limited to 10m radius for all other connection types.

- 12.7 For MDUs, the termination point for the purposes of the Connection at the End User's Tenancy, and the network demarcation point, is the ITP within the End User Tenancy.

FFP Termination Points (PONFAS Feeder Fibre and Distribution Fibre Services)

- 12.8 For the PONFAS Feeder Fibre Service, the termination point for the purposes of the Connection is the Service Demarcation Point described in clause 6.1 of the PONFAS Service Description.
- 12.9 For the PONFAS Distribution Fibre Service, the termination point for the purposes of the Connection is the Service Demarcation Point described in clause 5.3 of the PONFAS Service Description.

LFC Central Office Termination Point – Termination on Service Provider Footprint (Input Direct Fibre Access and PONFAS Feeder Fibre Services)

- 12.10 The Service Provider will establish a Footprint pursuant to the Central Office and POI Co-location Service or Input Central Office and POI Co-location Service in the LFC's relevant Central Office and connect (via the Tie Cable described in clause 12.5 within this Operations Manual from the MOFDF) the single fibre provided pursuant to the Input Fibre Access Service to the Service Provider's Footprint. Accordingly, at the LFC's relevant Central Office, the termination point for the purposes of the Connection, and the network demarcation point between the LFC Network and the Service Provider's equipment (as defined in the Central Office and POI Co-location or Input Central Office and POI Co-location Service Description), is usually the LCA connector or splice on the end of the Tie Cable that terminates on the OFDF within the Service Provider's Footprint space.

Alternative Termination Points

- 12.11 The LFC and the Service Provider may agree on a different termination point as part of a Non-Standard Install. A Non Standard Install for an Input Fibre Access Service within a Multi Dwelling Unit will not include termination in a building common area or other facility made available by the owner to service the Multi Dwelling Unit, where a Fibre Lead-in has not been extended from the OFDF to the inside of an End User Tenancy.

Testing

- 12.12 At the completion of an Input Fibre Access Service installation the LFC will carry out testing as described in the PONFAS or Input Direct Fibre Access Service Descriptions.

Additional Services

- 12.13 If the Service Provider requires additional services such as:

- 12.13.1 A Non-Standard Install which includes (where required):
- (a) an extension of the Fibre Lead-in over the maximum distances specified in clauses 12.16 (in relation to UFB1 Candidate Areas) or 12.17 (in relation to UFB2 and UFB2+ Candidate Areas);
 - (b) installation of Fibre-Lead-in diversity at an End User's Premises (from the FAP to the ETP or OFDF as applicable);
- 12.13.2 provision of diversity to End User's Premises other than those listed in clause 15.2 of this Operations Manual (when the second or subsequent instance of the Input Fibre Access Service is purchased);
- 12.13.3 Premises wiring services; or

12.13.4 installation and testing of Service Provider equipment (as defined in the Central Office and POI Co-location or Input Central Office and POI Co-location Service Descriptions) and services,

then the LFC may elect to provide such additional services on request subject to terms to be agreed between the LFC and the Service Provider. The services in clause 12.13.1 and 12.13.2 are available on terms as set out in this Agreement.

Standard and Non-Standard Installations (UFB1 Candidate Areas)

12.14 The Standard Install Fibre Lead-in for a Premises will be limited to:

12.14.1 100m of approved conduit or open trench (already in place at the time of installation); or

12.14.2 a double span of aerial drop lead on existing poles from the Fibre Access Point (this will include road crossings and is available only in areas where there is overhead deployment); or

12.14.3 30m of buried lead-in (available only in areas where there is underground deployment).

Provisioning at a MDU (all LFC Candidate Areas)

12.15 The LFC Standard Install applies to the installation of all EUSI for all Connections to End Users in MDUs.

12.16 The LFC must Connect End Users in each MDU in accordance with the Service Levels.

12.17 The LFC must terminate the lead-in fibre(s) outside or inside a MDU at a location that makes sense to the LFC and the owner(s) of that MDU or their authorised representatives. If inside a MDU, this will generally be a communications room or an OFDF.

12.18 A FTTB install to an End User located within a MDU (i.e. an End User Tenancy) includes:

12.18.1 the extension of the Fibre Lead-in from an ETP, common ETP or OFDF (as applicable) to the Service Demarcation Point within the End User Tenancy, except that:

(a) the Direct Fibre Access Service Demarcation Point shall be the splice or SC/APC connector within the End User Tenancy that connects with the MDU Communal Infrastructure; and

(b) the LFC will install an OFDF with multiple physical ports which will be located in a central location within the MDU and where each End User Connection will be delivered by the LFC through existing building cabling (e.g. single mode fibre).

12.19 The central location for the installation of the OFDF shall be agreed with the MDU owner, or their authorised agent, who will provide a location that is suitable for the LFC Equipment that is to be installed.

12.20 Subject to clauses 12.2 and 12.3 in the General Terms, the LFC will be responsible for obtaining and maintaining the consents on terms reasonably required by the LFC to access and utilise the MDU central location and existing infrastructure.

Services beyond the Service Demarcation Point at the End User Premises or End User Tenancy

12.21 For all Candidate Areas the LFC will not provide any services beyond the Service Demarcation Point.

Re-instatement

12.22 Re-instatement for any form of EUSI is to be on a like-for-like basis; for example, a concrete surface must be replaced with a concrete surface, an asphalt surface with an asphalt surface, and a grass surface with a grass surface. However, an exact match is not required (for example, a coloured surface may be patched with an uncoloured surface) and full-width replacement is not required (but always consistent with the duty to act in accordance with Best Industry Practise).

Position of End User Specific Infrastructure (EUSI)

12.23 For a ROW or a Retirement and Business Complex, sufficient Communal Infrastructure and End User-Specific Infrastructure must be positioned:

12.23.1 in respect of a ROW, at the entrance of the ROW to Connect all End Users whose Premises are accessed by that ROW, including sufficient capacity for growth of Premises down that ROW (if applicable); or

12.23.2 in respect of a Retirement and Business Complex, at the entrance of the Retirement and Business Complex to Connect all End Users located within the Retirement and Business Complex including sufficient capacity for growth of End Users in that Retirement and Business Complex (if applicable).

12.24 As End Users are Connected, the EUSI must be installed down the ROW or to End Users in the buildings within Retirement and Business Complexes as part of the Connection.

Best Industry Practice

12.25 Best Industry Practise applies when Connecting an End User, ensuring that the End User-Specific Infrastructure and associated Connections are to a high standard. This would, for example, limit the use of surface mounting within a Premises to situations where alternatives are not possible.

End User No-Show Minimisation

12.26 The Service Provider must ensure that it has systems and processes in place for the purpose of minimising the occurrence of End User No-Shows and to discouraging the cancellation of appointments by the End User (or the Service Provider on behalf of the End User) at short notice.

Part 6 – Multi Dwelling Unit (MDU) On-Boarding Process

13 Multi Dwelling Unit On Boarding

- 13.1** The roll out of the fibre network by the LFC will provide sufficient cable to the FAP to meet the requirements of MDU located End Users, however the LFC is unlikely to provision backbone fibre cabling of a new or existing MDU unless an order is received from an End User or it is approached by the building owner, developer or their agent.
- 13.2** For a Single Dwelling Unit, the Service Provider will obtain any End User consent necessary for the LFC to access End User Premises to install, maintain or remove LFC services, including any associated equipment, using either a template provided by the LFC or a Service Provider template approved by the LFC for this purpose.
- 13.3** For a MDU where the Service Provider has an agreement (whether conditional or unconditional) with an End User to take Services, the Service Provider will provide the LFC with contact information for the MDU building owner or body corporate (as applicable).
- 13.4** The LFC will, within two Business Days of receiving the building contact information for the MDU (described in clause 13.3 above), make a written request of the building owner or body corporate (as applicable) for the required permission to install, maintain or remove LFC services at those premises, including installation of any MDU backbone cabling that might be required. The LFC may choose to issue the letter as a preliminary notice in accordance with section 155F of the Telecommunications Act 2001.
- 13.5** The Service Provider may choose to provide the LFC with contact information for the MDU building owner or body corporate (as applicable) before they have an End User request, in which case the LFC may choose to seek permission from MDU building owner or body corporate (as applicable) at that time, but is not required to do so.
- 13.6** The Service Provider may choose to seek permission from the MDU building owner or body corporate (as applicable) on the LFC's behalf, using either a template provided by the LFC or a Service Provider template approved by the LFC for this purpose, but is not required to do so.
- 13.7** The LFC will be unable to supply Services to the End User premises within the MDU until all permissions are obtained and installation of any MDU backbone cabling that might be required is complete. Installation of any MDU backbone cabling that might be required (including testing of cabling against fibre specification in Appendix E) must be completed by the LFC within the relevant Service Levels set out in the Service Level Terms.

Service Requests for MDU with no or inadequate LFC Cable

- 13.8** If a Service Request is received from a Service Provider before suitable backbone cable is in place and there is no such backbone cabling proposed in the immediate future:
- 13.8.1 permission from the MDU building owner or body corporate (as applicable) may require the execution of a commercial agreement with the Service Provider, MDU building owner, body corporate developer or their agent to cable the building, which may in turn require the LFC to provide a detailed design of proposed building cabling including riser and floor access for approval. If such an agreement is necessary, for the purposes of the installation Service Levels set out in the Service Level Terms the relevant Service Level time period for installation will not commence until the LFC has received the necessary

executed commercial agreement, together with all other necessary permissions and consents required by Law;

13.8.2 extended lead times may apply as set out in the Service Level Terms; and

13.8.3 the LFC and the Service Provider may otherwise agree to extended lead-times to allow full backbone cabling of the MDU to be undertaken.

Part 7 – Tie Cable Installation

14 Tie Cable Installation

Introduction

- 14.1** To use an Input Fibre Access Service in conjunction with equipment co-located in their Footprint in the Central Office, a Service Provider will need to have a Tie Cable between the OFDF and their Footprint.

Tie Cable

- 14.2** An internal Fibre Tie Cable from the Central Office OFDF to the Service Provider Footprint is provided under the Central Office and POI Co-location Service and Input Central Office and POI Co-location Service;
- 14.3** The LFC will supply all Tie Cables.
- 14.4** The Tie Cable Service installation charges set out in the Price List will apply.
- 14.5** The Tie Cable Service is described in the Central Office and POI Co-location Service Description, the Input Central Office and POI Co-location Service Description, the Input Central Office and POI Co-location Service Operations Manual and the Central Office and POI Co-location Service Operations Manual.

Part 8 – Fibre Diversity

15 Diversity via additional service instances.

Overview

- 15.1** Input Fibre Access Services provide a single fibre between the LFC Central Office and the End User's Premises. Diversity (a second or subsequent instance of an Input Fibre Access Service between the Fibre Access Point and the Central Office) may be available to End Users as a separate instance of the Input Fibre Access Service. Service Level Terms do not apply to the provision of diversity products and each instance is treated as an individual Connection for the purpose of availability Service Levels.
- 15.2** Diversity will be available to Priority Users taking the Input Direct Fibre Access Service on request for Premises located in major health-care facilities, secondary or tertiary education centres, central business districts, industrial parks, business parks and strip malls.
- 15.3** 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.
- 15.4** Where available, the diverse optical paths will be in separate fibre cable sheaths, have separate ODF termination shelves, and if requested, be in separate cable routes. The diverse cable routes will be a minimum of the width of a street apart, and should not share any manholes or access points. Separate entries into the Central Office will be used where available.
- 15.5** Service Providers can also request diverse access to End User Premises or access to diverse Central Offices as part of a Non-Standard Install; however this will not be available in all cases.
- 15.6** Where practical the LFC will also provide diversity for PONFAS as an additional service.
- 15.7** 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.

Ordering of diverse Input Fibre Access Services

- 15.8** To order a diverse Input Fibre Access Service the Service Provider must include the following information with the Service Request:
- 15.8.1 Indicate that it is a request for a diverse circuit;
 - 15.8.2 Which Input Fibre Access Service it is diverse to; and
 - 15.8.3 The level of diversity required.
- 15.9** The LFC will advise the installation cost of the diversity request.

Levels of Diversity

- 15.10** There are 4 main levels of diversity:
- 15.10.1 Single Central Office redundancy with separate diverse fibre;

- 15.10.2 Single Central Office redundancy with separate diverse fibre and diverse access to End User Premises;
- 15.10.3 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
- 15.10.4 Dual Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate Central Office.

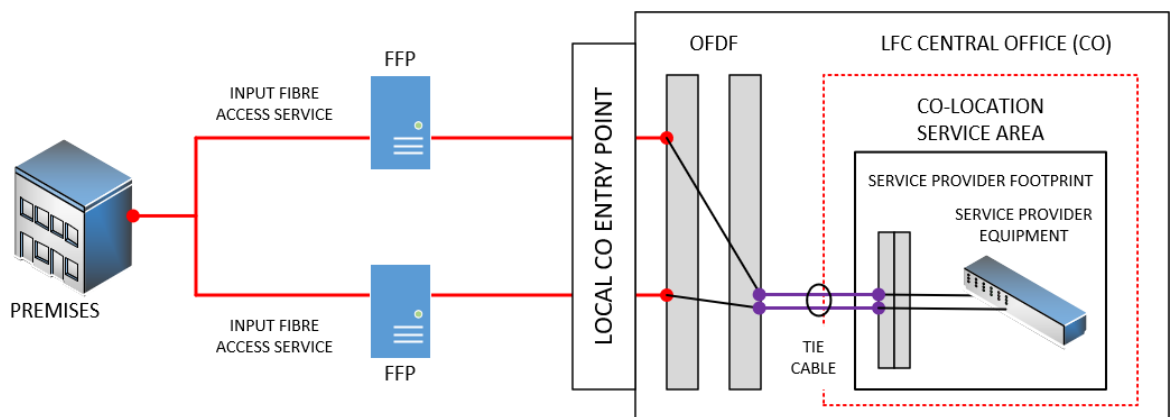
Single Central Office redundancy with separate diverse fibre

15.11 Single Central Office redundancies with separate diverse fibre requires 2 fibres from the End User Premises to a single Central Office. This option has the following characteristics:

- 15.11.1 The diverse fibres will converge at the common FAP;
- 15.11.2 Each Input Fibre Access Service will be priced at the rate in the Price List; and
- 15.11.3 Each Input Fibre Access Service will be subject to the Service Levels set out in the Service Level Terms. Enhanced Service Levels may be offered and charged for at the rate in the Price List.

15.12 Where available, the diverse optical paths will be in separate fibre cable sheaths, have separate OFDF termination shelves, and if requested, be in separate cable routes.

15.13 The diagram below shows single Central Office redundancy with diverse route.



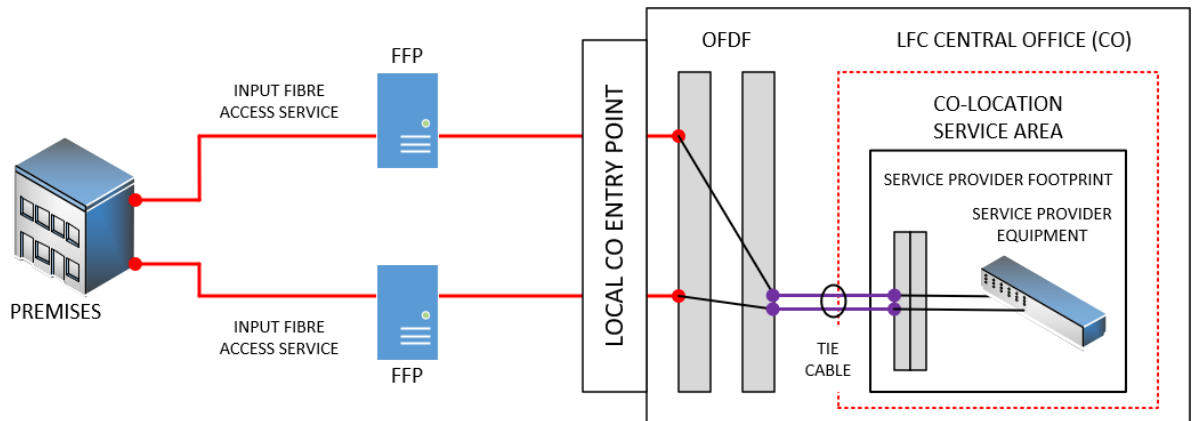
Single Central Office redundancy with separate diverse fibre and diverse access to End User Premises

15.14 Single Central Office redundancy with separate diverse fibre and diverse access to End User Premises requires 2 fibres from the End User Premises to a single Central Office and a second lead-in to End User Premises. This option has the following characteristics:

- 15.14.1 Each diverse fibre will have its own lead-in from a separate FAP to the ETP, OFDF or equivalent;
- 15.14.2 Each Input Fibre Access Service will be priced at the rate in the Price List; and
- 15.14.3 Each Input Fibre Access service will have assured Service Levels. Enhanced Service Levels may be offered and charged for at the rate in the Price List.

15.15 Where available, the diverse optical paths will be in separate fibre cable sheaths, have separate MOFDF termination shelves, and if requested, be in separate cable routes.

15.16 The diagram below shows single Central Office redundancy with diverse route and diverse access to End User Premises.



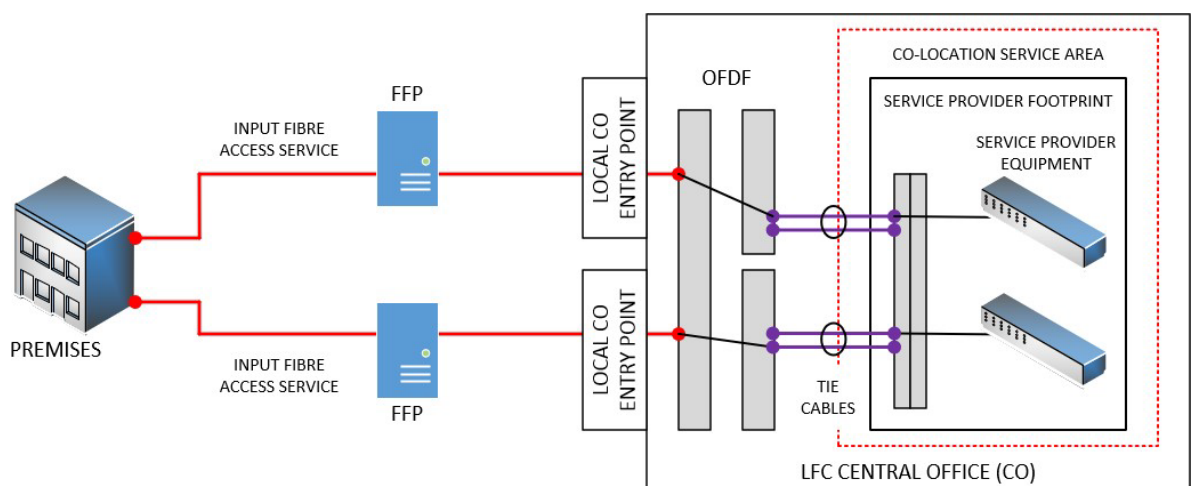
Single Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate OFDF at a single Central Office

15.17 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 requires 2 fibres from the End User Premises to a single Central Office with a separate manhole and OFDF at the Central Office and a second lead-in to the End User Premises. This option has the following characteristics:

- 15.17.1 Each diverse fibre will have its own lead-in from a separate FAP to the ETP, OFDF or equivalent;
- 15.17.2 Each diverse fibre will have its own manhole and entrance to a separate OFDF at the Central Office;
- 15.17.3 Each Input Fibre Access Service will be priced at the rate in the Price List; and
- 15.17.4 Each fibre access service will have assured Service Levels. Enhanced Service Level Terms may be offered and charged for at the rate in the Price List.

15.18 Where available, the diverse optical paths will be in separate fibre cable sheaths, have separate MOFDF termination shelves, and if requested, be in separate cable routes.

15.19 The diagram below shows single Central Office redundancy with diverse route, diverse access to End User Premises and diverse access to a separate OFDF at a Central Office.



Dual Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate Central Office.

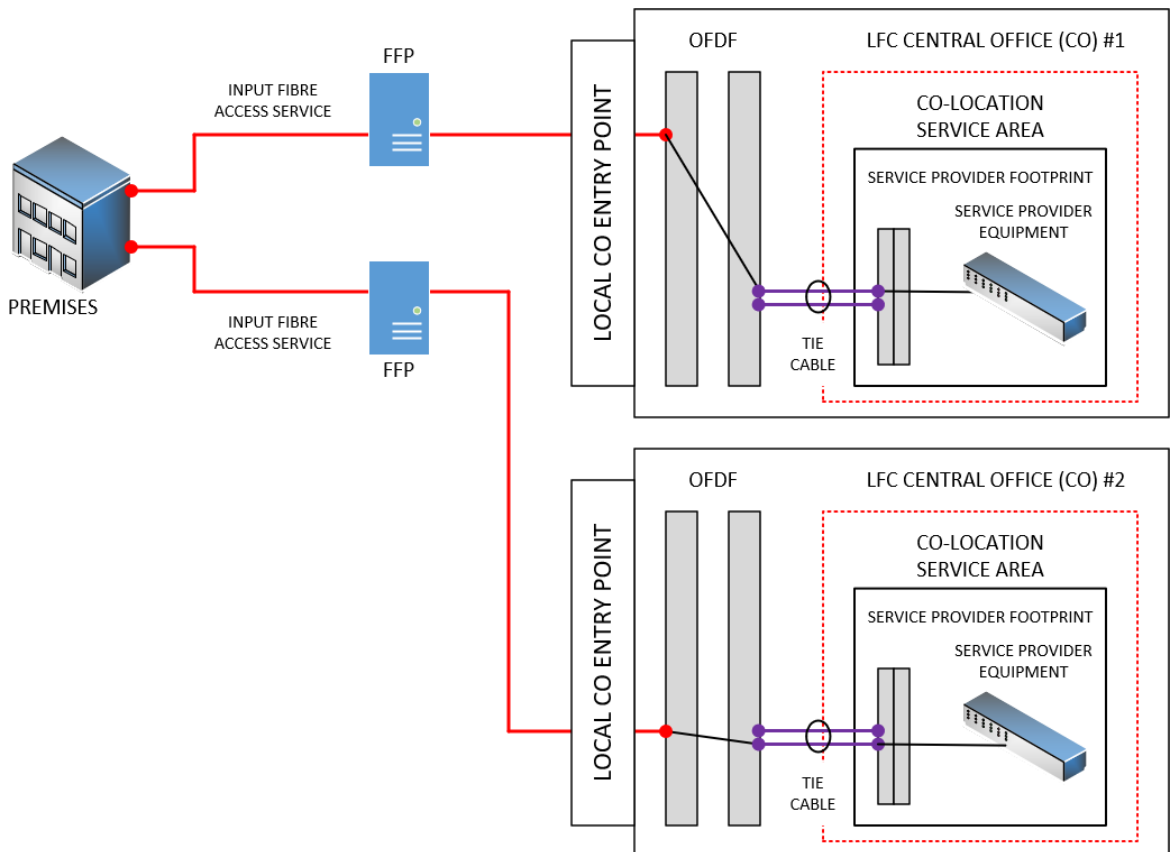
15.20 Dual Central Office redundancy with separate diverse fibre, diverse access to End User Premises and diverse access to a separate Central Office requires 2 fibres from the End

User Premises, comprising one fibre to one Central Office and a second fibre to a separate Central Office, and a second lead-in to End User Premises. This option has the following characteristics:

- 15.20.1 Not available in locations with only one Central Office;
- 15.20.2 Each diverse fibre will have its own lead-in from a separate FAP to the ETP, OFDF or equivalent;
- 15.20.3 Each diverse fibre will have its own Central Office;
- 15.20.4 Each Input Fibre Access Service will be priced at the rate in the Price List; and
- 15.20.5 Each fibre access service will have assured Service Levels. Enhanced Service Level Terms may be offered and charged for at the rate in the Price List.

15.21 Where available, the diverse optical paths will be in fully separate fibre cable sheaths, and if requested, be in fully separate cable routes.

15.22 The diagram below shows dual Central Office redundancy with diverse route, diverse access to End User Premises and diverse access to a separate Central Office.



Part 9 - Billing

16 Billing

Invoicing

- 16.1** The LFC will invoice the Service Provider for all charges on the basis specified in the 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 Service Provider. A hard copy paper invoice will be available to Service Providers at the price set out in the Price List.
- 16.2** The eBill must include the following information:
- 16.2.1 FSL;
 - 16.2.2 Fault or Service Order identifier;
 - 16.2.3 Any Core Service Rebates; and
 - 16.2.4 Type of fee.
- 16.3** The LFC will send an electronic bill.
- 16.4** The Service Provider 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.
- 16.5** The LFC will provide the eBill and the printed GST summary to the Service Provider free of charge.
- 16.6** The LFC will maintain one or more separate Service Provider accounts for services provided to the Service Provider. The LFC may alter the account structure as it considers appropriate.

Billing Enquiries

- 16.7** If the Service Provider 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 Service Provider 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.
- 16.8** The email must include the following information:
- 16.8.1 A header reading 'Billing Query'; and
 - 16.8.2 A completed Billing Enquiry Form.
- 16.9** 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.
- 16.10** Additional billing information, over and above that reasonably required to assist Service Providers in interpreting invoices, will be charged in accordance with the Price List. The Service Provider may require the LFC to provide a quote for any such request for further information.
- 16.11** The process set out in this clause is an informal enquiry process that does not limit the General Terms. If the Service Provider wishes to claim an Invoice Error in an invoice, it must follow the procedure set out in clause 7 of the General Terms.

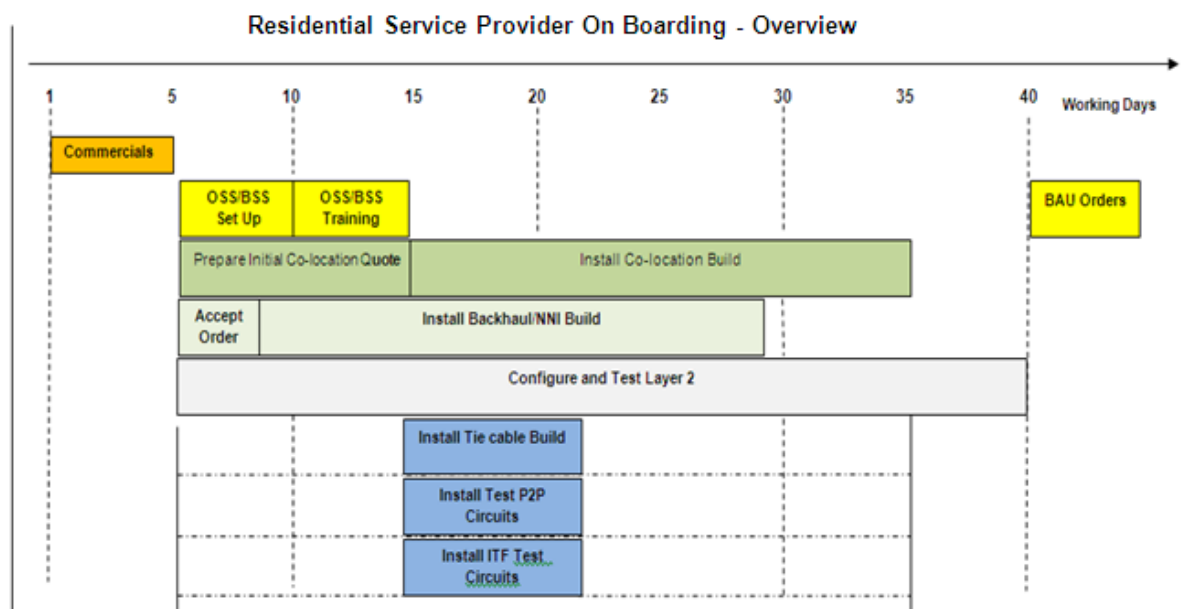
Part 10 – Operational Readiness Programme

17 Service Provider on Boarding

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

- 17.1.1 The establishment of commercial relationships;
- 17.1.2 Set up of OSS/BSS interfaces;
- 17.1.3 Build of Footprints;
- 17.1.4 Training as per clauses 17.9 to 17.11; and
- 17.1.5 The testing and commissioning of processes, products and interfaces.

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



Commercials

- 17.3 The Service Provider needs to sign a WSA and meet the requirements of the General Terms before they can take the Input Fibre Access Service.
- 17.4 The Service Provider must provide all information required in a timely manner as any delay will extend the service level time. This information includes details of insurance, credit guarantee and contact information for the WSA.

OSS/BSS

- 17.5 OSS/BSS is required to enable the Service Provider to place and track Service Requests and Service Orders for Direct Access Fibre Service, to report faults and to obtain other operational information. Default module functionality will not be available in the OSS/BSS at the time the LFC commences providing services, but will be introduced at a later point in time.

- 17.6 The Service Provider needs to have the B2B/SSP system in place and staff available for training.
- 17.7 Set up of the OSS/BSS requires the LFC to allocate passwords and test interfaces including processing trial Service Requests.
- 17.8 The LFC will provide training to the Service Provider staff which includes:
 - 17.8.1 Explanation of guides, products, processes, procedures and tools;
 - 17.8.2 Submission of test Service Requests;
 - 17.8.3 Handling exceptions; and
 - 17.8.4 Q&A.
- 17.9 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:
 - 17.9.1 Overview of forecasting templates;
 - 17.9.2 Overview of forms for Service Requests;
 - 17.9.3 Basic details of OSS/BSS (including demonstration of the system);
 - 17.9.4 Overview of billing and accounts; and
 - 17.9.5 Q&A.
- 17.10 The Service Provider will ensure that a reasonable number of staff (up to a maximum number of 10 per session) attend any training provided.
- 17.11 Any additional training required by the Service Provider beyond reasonable initial set-up training (up to 50 hours) will be charged for by the LFC in accordance with the Price List.

Co-location

- 17.12 If a Service Provider requires co-location space, they can place initial Service Requests with all required information when signing the WSA or they can wait until the OSS/BSS is in place and their staff are trained in its use.
- 17.13 The LFC will provide quotes for Co-location Build, once these are accepted the Co-location Build will commence subject to the provision of any materials or information required from Service Provider. On acceptance of the Co-location Build the Footprints will be handed over to the Service Provider.

Tie Cables

- 17.14 If a Service Provider requires Tie Cables for their co-location space, they can place initial Service Requests with all required information when signing the WSA or they can wait until the OSS/BSS is in place and their staff are trained in its use.
- 17.15 The LFC will provide quotes for Tie Cable build, once these are accepted build will commence subject to the provision of any materials or information required from Service Provider. On completion of the build the Tie Cables will be handed over to the Service Provider.

Testing

- 17.16 If a Service Provider requires test circuits, they can place initial Service Requests with all required information when signing the WSA or they can wait until the OSS/BSS is in place and the Service Provider's staff are trained in its use. The LFC will provide test circuits for the Service Provider and if required trial fault and relinquish them.

Integrated Test Facility

- 17.17** As an alternative to test circuits to their premises the Service Provider can request access to the Integrated Test Facility.
- 17.18** Operational requirements for the Integrated Test Facility are not included in this Manual and will be discussed with Service Providers on a case by case basis.

BAU

- 17.19** Once on boarding and testing is successfully completed the Service Provider can place Service Requests for Input Fibre Access Services.

Part 11 – Other

18 Requirements for End User Site Visits by the LFC

- 18.1** Fault and provisioning related site visits by the LFC to the End User Premises will be arranged by appointment under OSS/BSS. The LFC will not be required to consult the Service Provider or any End User when work at a site does not require entry to Premises or contact with an End User, but must notify Service Provider if an outage will result from work. Where entry to a Premises or contact with an End User is required then the Service Provider will make arrangements for the site visit with the End User and the relevant LFC representative. The LFC or its representatives may contact End Users if required to facilitate the LFC's or its representatives' attendance at the End User's Premises for appointments arranged through the Service Provider.
- 18.2** The LFC representatives will carry the LFC identification and wear appropriate clothing.
- 18.3** The LFC representative will use all reasonable endeavours to start all visits to an End User's Premises at the scheduled time.
- 18.4** When interacting with any End User, the LFC representatives will always act in a professional and courteous manner and they will not use that interaction for sales and marketing purposes.
- 18.5** At the completion of all site visits, the relevant LFC representative will record the details in appropriate systems.
- 18.6** When, for any reason outside the LFC's control, but excluding Force Majeure events, it is unable to complete a visit at the scheduled time (e.g. because an End User is unavailable), the LFC will charge the Service Provider an abortive End User site visit charge in accordance with the Price List.

19 Premises Lead-in Fibre Installation

- 19.1** The limits of the Standard Installation are described in Part 5 of this Operations Manual. Additional work required to provide a Connection may be carried out at the same time. Additional charges (if any) will be as set out in the Price List and agreed with the Service Provider before the additional work is carried out.
- 19.2** The installation of conduits and lead-in pipes at each End User's Premises will be in accordance with the LFC's works practises and the premises wiring code. Any existing conduits or Lead-in pipes that are reused must also conform to the same standards.

20 Marketing Support and Roll out Plans

- 20.1** Raising awareness about the LFC's enhanced network and the benefits of fibre to End Users will be an essential step in the transition process so that End Users are motivated to change to fibre based access services and the LFC achieves the uptake rates they are targeting.

- 20.2** Assisting in the increasing awareness of the LFC network will be deployment information in the form of maps and address lists provided by the LFC to the Service Providers to enable them to plan their marketing.
- 20.3** To augment the broader awareness and marketing initiatives, the LFC will have a sales channel, which will:
- 20.3.1 Own the Service Provider relationship;
 - 20.3.2 Develop an intimate understanding of their Service Provider's requirements;
 - 20.3.3 Champion Service Provider requirements within the LFC to ensure Service Provider issues are understood and services are fit-for- purpose;
 - 20.3.4 Ensure Service Provider understand the LFC offerings and can drive fibre uptake on a retail basis; and
 - 20.3.5 Identify gaps/opportunities in the NZ market and short to medium term fibre growth areas.
- 20.4** This team will be supported by the service delivery teams who manage the more operational aspects of the Service Provider relationship.

APPENDIX A – Glossary

IF A DEFINITION APPEARS IN THE TABLE BELOW THEN THAT PREVAILS, OTHERWISE SEE OPERATIONS MANUAL FOR INPUT FIBRE ACCESS SERVICES – 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 Wholesale 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 OFDF to the Service Provider Footprint provided on request to a Service Provider who has taken an Input Fibre Access Service and a co-location footprint.

APPENDIX B – Escalation Protocol

NOT USED; PLEASE CONTACT YOUR SERVICE DELIVERY MANAGER OR ACCOUNT MANAGER IF YOU REQUIRE A COPY OF TUATAHI FIRST FIBRE'S ESCALATION PROTOCOL

APPENDIX C – Forecasting Spreadsheet

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

APPENDIX D - Diagram

SEE APPENDIX A OF THE PONFAS SERVICE DESCRIPTION AND INPUT DIRECT FIBRE ACCESS SERVICE DESCRIPTION.

APPENDIX E – Optical Fibre Specification

SEE APPENDIX B OF THE PONFAS SERVICE DESCRIPTION AND INPUT DIRECT FIBRE ACCESS SERVICE DESCRIPTION.

APPENDIX F – Candidate POI & Central Offices

NOT USED; PLEASE REFER TO TFF WEBSITE – www.tuatahifibre.co.nz

APPENDIX G - LFC Contact Details

Tuatahi First Fibre Contact Details

<p>TFF General Enquiries</p> <p>Email: servicedesk@tuatahifibre.co.nz</p> <p>Phone: 0800 833 622; option 1</p>	<p>Enquiries relating to provisioning requests placed with the TFF Service Desk.</p>
<p>TFF Network Management Centre (NMC)</p> <p>Email: faults@tuatahifibre.co.nz</p> <p>Phone: 0800 833 622; option 3</p>	<p>Enquiries about faults or network events</p>
<p>TFF Finance Team</p> <p>Email: accounts@tuatahifibre.co.nz</p>	<p>Enquiries about accounts or billing.</p>