



Northpower Fibre UFB Services Agreement

Passive Optical Network Fibre Access Services (Layer 1) Operations Manual for Passive Optical Network Fibre Access Services (PONFAS)

Reference Offer
January 2020 VERSION 1.0

TABLE OF CONTENTS

PART 1 – DOCUMENT INFORMATION 1

PART 2 – FORECASTING 6

PART 3 – PRE-QUALIFICATION AND PROVISIONING..... 10

PART 4 – PROBLEM MANAGEMENT..... 21

PART 5 – STANDARD PONFAS SERVICE INSTALL AND TERMINATION POINTS..... 28

PART 6 – CONSENTS PROCESS [UPDATE PENDING FOR LAND ACCESS LEGISLATION] 32

PART 7 – PONFAS FEEDER SERVICE HANDOVER AND TIE CABLE INSTALLATION 33

PART 8 – TEST FACILITIES..... 35

PART 10 – BILLING 36

PART 11 – OPERATIONAL READINESS PROGRAMME 37

PART 12 – MDU CONNECTION PROCESS 40

PART 13 – OTHER..... 41

APPENDIX A – GLOSSARY 43

APPENDIX B – ESCALATION PROTOCOL..... 51

APPENDIX C – FORECASTING SPREADSHEET 52

APPENDIX D – PONFAS DIAGRAM 53

APPENDIX E – PONFAS TECHNICAL SPECIFICATION 55

APPENDIX F – LFC Contact details..... 56

APPENDIX G -- Candidate areas..... 57

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 Passive Optical Network Fibre Access Service (PONFAS).
- 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 PONFAS 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 Prior to issue of the first Service Request for a PONFAS 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 2.3 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 may be specific to PONFAS services, or common across multiple services.
- 2.3 People and Contact Details

Contact and detail required	Purpose
Both parties provide principal point of contact for PONFAS Services. (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 PONFAS Service. For the LFC this will usually be the Account Manager for the relevant Service Provider.
The LFC only provides Service Delivery Manager. (This must include the Service Delivery Manager's email address, mobile and work telephone numbers.)	This is the person responsible for service delivery of the PONFAS Service to the Service Provider.
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 PONFAS Service 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 user administrators.	These people will manage the creating and disabling of Service Provider staff accounts to access the 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 LFC's secure web portal where the PONFAS 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.

Contact and detail required	Purpose
The LFC only provides Fault reporting contact details. (This must include an 0800 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 11.7 below.
The LFC only provides Business continuity email address.	This is the email address to send forms to under clauses 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
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 any 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 Performance 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:

- (i) uniform standards of best practice are set;
- (ii) the performance of the LFC Network can be maintained;
- (iii) the health and safety of the Service Provider's and the LFC's employees, contractors and other agents can be protected;
- (iv) systems are in place for the management of outages, faults and any work the Service Provider or the LFC need to undertake; and
- (v) 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:

- (i) apply the technical manual or user guide under the terms of the Agreement in good faith;

- (ii) interpret the technical manual or user guide consistently with the terms of the Agreement; and
 - (iii) comply with the technical and/or procedural detail the technical manual or user guide contains, to the extent it is relevant under the circumstances.
- 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 a PONFAS 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 PONFAS Services.
- 4.2 Any dispute, question or difference that arises between the parties should 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 **Error! Reference source not found.**
- 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 PONFAS Service:
- (i) execution of the WSA;
 - (ii) set up of the OSS/BSS so that Service Requests can be placed;
 - (iii) Service Provider staff are trained in the use of OSS/BSS to place and track Service Requests and faults;
 - (iv) build of first Co-location footprint, including installation and commissioning of Service Provider active network equipment suitable for the termination of PONFAS Feeder services within this footprint (if required); and
 - (v) 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 a PONFAS Service (but neither the LFC nor the Service Provider will be under any obligation to do so).
- 5.3 The Service Provider Operational Readiness Programme in Part 11 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 Prior to placing each individual Service Request with the LFC, the Service Provider must ensure the Technical Interface Specification set out in Appendix E is complied with.
- 5.5 The Service Provider must ensure that the prerequisites specified in this clause 5 are complied with on an on-going basis (including, where applicable, in respect of each PONFAS Service) while that Service Provider continues to receive the PONFAS 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 PONFAS 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.

Forecasting Reports

- 6.4 Within the period of 30 Business Days preceding Month End, but no less than 22 Business Days prior to Month End, the Service Provider 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 Service Provider's forecast for use of the PONFAS Service by reference to each applicable Candidate Area (each a Forecast Coverage Area). Months 1 to 6 are mandatory but the Service Provider may also provide forecasts for Months 7 to 12 which will be treated as indicative by the LFC.

In this section 6:

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;

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

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

Previous Forecast in relation to a Service Request Month, as applicable:

- The total number of Forecast Service Requests for that Service Request Month as set out in the last Forecasting Report submitted to the LFC prior to the Service Request Month; or
- Where clause 6.19 has been applied to the last Forecasting Report, the total number of Forecast Service Requests deemed to have been made for that Service Request Month in the last Forecasting Report submitted to the LFC prior to the Service Request Month in accordance with clause 6.19 Bulk Service Request Forecasts

Bulk Service Request Forecasts

6.6 A Bulk Service Request Forecasts

- (i) a Bulk Migration which is the migration, in a coordinated manner with project management oversight, of multiple End Users currently using a Layer 2 wholesale service onto services based on the PONFAS Service, where both original and final services are supplied to the same Service Provider; or
- (ii) a Bulk Transfer which is the transfer, in a coordinated manner with project management oversight, of multiple End Users on a Layer 2 wholesale or PONFAS service supplied to losing Service Provider(s) onto services based on the PONFAS Service supplied to a gaining Service Provider; or
- (iii) a Bulk New Connection which is the connection, in a coordinated manner with project management oversight, of multiple new connection Service Requests for a single or multiple End Users.

6.7 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 provisioning Service Levels set out in the Service Level Terms for PONFAS Services.

6.8 For any proposed Bulk Service Request the Service Provider must notify the LFC of a Bulk Service Request requirement at least three months before the date which the Service Provider proposes the Bulk Service Request to commence to enable the actual date to be mutually agreed with between the LFC and Service Provider.

6.9 Forecasts for Bulk Service Requests must be included in the Forecasting Report and may also be provided as a separate bulk transaction forecast.

Submissions of Forecasting Reports

6.10 The Service Provider will submit Forecasting Reports to the LFC:

- (i) In the manner advised by the LFC from time to time;
- (ii) Using the template prescribed by the LFC, which must be completed in full by the Service Provider (including the date that the Forecasting Report is submitted to the LFC); and
- (iii) By the date specified in paragraph **Error! Reference source not found.**

6.11 The LFC may make a reasonable request that the Service Provider provides 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.

Variations in forecast volumes distribution

6.12 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 for the purpose of determining Service Level performance.

- 6.13 If a 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 transaction requests), 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).
- 6.14 Where the Service Provider fails to submit the required Forecasts, the LFC will deem the forecast to equal the level of Service Orders from the previous month and the LFC will be obliged to meet the applicable Service Levels for that volume of orders.

Accuracy of forecasting

- 6.15 A Service Provider may forecast any level of Forecast Service Requests it considers appropriate to accurately reflect anticipated volume, subject to clause **Error! Reference source not found.9**. The intent of the following provisions is to progressively increase the accuracy of forecasts and to limit variations in the volume of Forecast Service Requests forecast during the 6 month period leading up to the Service Request Month. To assist with planning the LFC would prefer 12 month forecasts but the provisions in this Part 2 will only apply for the 6 month period referred to in clause **Error! Reference source not found.5**.
- 6.16 If in a Forecast Report, the Service Provider provides less than 30 Forecast Service Requests in a Forecast Coverage Area for PONFAS Services in any Service Request Month, then the requirements of clauses 6.17 and the consequences of clause 6.23 will not apply.
- 6.17 In a Forecast Report, the number of Forecast Service Requests for any Forecast Coverage Area in that Service Request Month will be:
- For each of Month 5 and Month 6:
 - If the Forecast Service Requests are greater than 120% of the Previous Forecast, deemed to be 120% of the Previous Forecast; and
 - If the Forecast Service Requests are less than 80% of the Previous Forecast, deemed to be 80% of the Previous Forecast;
 - For Month 4 and Month 3:
 - If the Forecast Service Requests are greater than 115% of the Previous Forecast, deemed to be 115% of the Previous Forecast; and
 - If the Forecast Service Requests are less than 85% of the Previous Forecast, deemed to be 85% of the Previous Forecast;
 - For each of Month 2:
 - If the Forecast Service Requests are greater than 110% of the Previous Forecast, deemed to be 110% of the Previous Forecast; and
 - If the Forecast Service Requests are less than 90% of the Previous Forecast, deemed to be 90% of the Previous Forecast;
 - For Month 1 (the month before the Service Request Month):
 - If the Forecast Service Requests are greater than 105% of the Previous

Forecast, deemed to be 105% of the Previous Forecast; and

If the Forecast Service Requests are less than 95% of the Previous Forecast, deemed to be 95% of the Previous Forecast.

- 6.18 The LFC will notify the Service Provider of each instance of the application of the deeming effects of paragraph 6.17, so that the Service Provider is aware of the deemed Forecast Service Requests (notwithstanding the Forecast Service Requests forecast by the Service Provider in the Forecasting Report).
- 6.19 The volume of Service Requests actually made in a Service Request Month should, for each Forecast Coverage Area, be no greater than 105% of the Previous Forecast (including having regard to any deeming under clause 6.19) for that Forecast Coverage Area for Month 1.
- 6.20 The volume of Service Requests actually made on a Business Day of a Service Request Month should, for each Forecast Coverage Area, be no greater than 130% of the Previous Forecast (including having regard to any deeming under clause 6.19), for that Forecast Coverage Area for that same Business Day of Month 1. If the Previous Forecast does not itemise Forecast Service Requests by day in accordance with paragraph 6.13, the 130% threshold will be calculated by dividing the total Forecast Service Requests for the Forecast Coverage Area by the number of Business Days in the Service Request Month and rounding to the nearest whole number.
- 6.21 If the volume of Service Requests for a Forecast Coverage Area actually made by the Service Provider exceeds the thresholds in 6.19 and/or 6.20 in the relevant Service Request Month or Business Day (as applicable), then the LFC will make reasonable endeavours to complete the Service Requests but the Service Levels will only apply to the volume of Service Requests that fall below the thresholds set in 6.19 and/or 6.20 (whether that threshold be calculated based on volumes as actually set out in the last Forecasting Report or deemed in accordance with clause 6.17).
- 6.22 If the Service Provider provides less than 30 Forecast Service Requests for PONFAS Services in a Forecast Coverage Area for any Service Request Month, then the consequences of clause 6.21 will not apply and the LFC will be required to meet the Service Levels.
- 6.23 If the volume of Service Requests for a Forecast Coverage Area actually made by the Service Provider in a Service Request Month (excluding any Service Requests cancelled or rejected at the end of the Service Request Month) is less than 75% of the Previous Forecast for that Forecast Coverage Area for that Service Request Month (including having regard to any deeming under clause 6.17), then if requested by the LFC, the Service Provider will pay to the LFC the sum of \$20 per Forecast Service Request in the Previous Forecast that did not become a Service Request in the Service Request Month up to the 75% threshold.
- 6.24 The LFC will notify and to the extent practicable, consult with, the Service Provider if it fails to meet a Service Level due to the volume of Service Requests actually made in a Service Request Month being greater than the thresholds set in paragraphs 6.19 and 6.20.
- 6.25 The LFC intends to implement a method of industry aggregated forecasting whereby no penalties or Service Level suspensions will occur for a Service Request Month if the aggregated effect of the combined Service Providers forecasts are within the 95% to 105% thresholds specified in paragraph 6.17.4. The LFC will work through the Product Forum to agree the detail of this provision. Until such time as this aggregated process is agreed then the forecasting process described in section 6 excluding this clause shall prevail.

PART 3 – PRE-QUALIFICATION AND PROVISIONING

7 The OSS/BSS System

Overview

- 7.1 OSS/BSS allows the Service Provider to log on to a secure site for the placing and monitoring of Service Requests, Fault Requests and Service Orders with the LFC.
- 7.2 Subject to the provisions below relating to business continuity all Service Requests for the PONFAS Service must be placed using OSS/BSS. Except as expressly provided elsewhere in this Manual, any Service Request that the Service Provider attempts to place by other means (for example, by email or by fax) will be invalid and may be 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:
 - (i) submit and track the status of Service Requests; and
 - (ii) update existing Service Requests (up to the time they are accepted and become Service Orders).
 - (iii) Submit and track the status of Faults
- 7.4 Service Providers requesting project management of Bulk Service Requests as described in clause 6.6, 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 at the rate in 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 Account Manager for documentation describing the development required to interact with B2B. A trial agreement must be signed before access to a test site, after which 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 Programme detailed in Part 11.

Access to OSS/BSS

- 7.7 The Service Provider will provide the LFC with the names of at least one person to be assigned as OSS/BSS user administrators, as per section 2.3. The Service Provider's OSS/BSS user administrator(s) 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 OSS/BSS 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:
- (i) perform malicious or unintentional actions that damage or may potentially damage OSS/BSS; or
 - (ii) use OSS/BSS in an unauthorised manner or in such a way that causes or may cause material performance issues; or
 - (iii) 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 system.

- 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 the integration of the Service Provider's own system 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. These documents are available on LFC's website.

OSS/ BSS Costs

- 7.14 The LFC will be solely responsible for the LFC's costs of designing and developing its 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, but always in accordance with the Service Level Terms.
- 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 the 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 forms available to the Service Provider for use for business continuity during any periods of OSS/BSS unavailability:
- (i) Pre-qualification/ Site Investigation form;
 - (ii) PONFAS:
 - o New Connection form;
 - o Modify form; and
 - o Relinquishment form.
- 7.21 All business continuity forms submitted in accordance with this clause should come from a generic Service Provider mailbox. This mailbox must include the Service Provider's name in the email subject line as below:
- [PONFAS 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 clause 9 where they will be processed on a reasonable endeavours basis.

8 Service Availability and Pre-qualification

PONFAS Service Availability

- 8.1 PONFAS Feeder services can be ordered for:
- (i) Fibre Flexibility Points that provide UFB services to UFB 1 Areas as of 1 January 2020; and
 - (ii) Fibre Flexibility Points that provide UFB services to UFB2 Areas as of 1 January 2026; and
 - (iii) new Fibre Flexibility Points introduced post 1 January 2020 for UFB1 Areas or post 1 January 2026 for UFB2 Areas;
- provided the Service Provider either has Co-location services in the local Central Office, or uses a linking service to Co-location in a remote Central Office or other location.
- 8.2 For the avoidance of doubt, PONFAS is not available:
- (i) to Non-Building Access Points (NBAPs);

- (ii) in other areas where LFC fibre is available outside UFB1 Areas and UFB2 Areas and their adjacent Greenfields.

Pre-qualification Overview

8.3 Pre-qualification is a service that enables the Service Provider to:

- (i) confirm if the given address is within the area of geographical coverage of the applicable PONFAS Service; and
- (ii) determine when the applicable PONFAS Service will be available in the future for areas outside of the current coverage.
- (iii) Provide a one off cost to build the Feeder and or Distribution PONFAS Network

8.4 Pre-qualification type:

- (i) Manual Pre-qualification Investigation /Site Investigation (address).

Manual Pre-qualification

8.5 For Manual Pre-qualification the Service Provider must submit the items 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.).

8.6 The information returned will include:

- (i) Central Office identifier;
- (ii) the type of Premises e.g. MDU or Single Dwelling Unit;
- (iii) whether the PONFAS Service can be provided at the End User Premises for the address or Service Identifier submitted.

8.7 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.

8.8 Charges for Pre-qualification are set out in the Price List.

Initial Delivery

8.9 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

8.10 A Site Investigation is carried out in conjunction with the Manual pre-qualification where the Service Provider wishes to obtain information about an address.

8.11 The information returned will be, where possible, responses to requests made by the Service Provider.

9 Service Requests Processing

9.1 The following types of PONFAS Distribution Service Requests may be submitted using the relevant web or B2B form in OSS/BSS:

- (i) Pre-qualification/ site investigation;
- (ii) PONFAS Distribution Service New Connection;
- (iii) PONFAS Distribution Service Relinquishment;
- (iv) PONFAS Feeder Service New Connection; and
- (v) PONFAS Feeder Service Relinquishment.
- (vi) Modify Service Order

9.2 These Service Requests will be processed as outlined below:

- (i) for each Service Request that is submitted either via OSS/BSS or by email as outlined in clauses 7.19 to 7.22, the Service Provider must complete all fields on the relevant form marked as mandatory.
- (ii) 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 PONFAS Distribution Service Request will be deemed invalid and may be rejected by the LFC if:

- (i) it is not submitted in accordance with this Manual; or
- (ii) one or more of the rejection reasons (a list of which will be changed from time to time in accordance with clause 24 of the General Terms and made available on the LFC website) apply; or
- (iii) the Service Provider does not have a PONFAS Feeder Service at the Fibre Flexibility Point associated with the End User Premises. The PONFAS Feeder Service is required for a Service Provider to access and interconnect with the applicable PONFAS Distribution Service.

9.6 A PONFAS Feeder Service Request will be deemed invalid and may be rejected by the LFC if:

- (i) it is not submitted in accordance with this Manual; or
- (ii) one or more of the rejection reasons (a list of which will be changed from time to time in accordance with clause 24 of the General Terms and made available on the LFC website) apply; or

- (iii) the Service Provider does not have capability at the required Handover Point to access and interconnect with the applicable PONFAS Feeder Service.
- 9.7 The LFC will perform a validation check of each Service Request that is received to determine whether the Service Request is compliant, or may be rejected in accordance with clause 9.5 or 9.6.
- 9.8 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.
- 9.9 The LFC will waive immaterial irregularities and process Service Requests where the intention is unambiguous. Examples of such irregularities include:
- (i) use of different conjunctions (e.g. '&' instead of 'and');
 - (ii) improper application or omission of apostrophes;
 - (iii) variations in letter case;
 - (iv) use of initials instead of first names, or vice versa; and
 - (v) names where letters have been accidentally transposed but the meaning is still clear (e.g. Dominoin = Dominion).

Notification of Service Configuration

- 9.10 If a Service Request is accepted and becomes a Service Order, the LFC will notify the Service Provider of the service ID and service configuration information of the new service on or before the point in the process when the Service Start Date is confirmed.

PONFAS Service Start Date

- 9.11 If a Service Request is accepted and becomes a Service Order, the LFC will either:
- (i) Advise the Service Provider of an expected Service Start Date, where applicable for the type of Service Order involved; or
 - (ii) Confirm with the Service Provider the expected Service Start Date is the date they have requested; or
 - (iii) 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.
- 9.12 The LFC will use all reasonable endeavours to meet the Scope Date (if one is required) and the expected Service Start Date as provided in clause 9.11.
- 9.13 Where the LFC becomes aware that it will be unable to meet the Scope Date (if one is required) or the expected Service Start Date notified under clause 9.11, the LFC will promptly advise the Service Provider of a revised Scope Date or expected Service Start Date and the relevant consequence for a reschedule set out in the Service Level Terms shall apply.

PONFAS Feeder Service Start Date

- 9.14 After a valid PONFAS Feeder New Connection Service Request is placed, the LFC will

confirm with the Service Provider, the expected Service Start Date within 72 hours of the Service Request acceptance date:

- 9.15 The LFC will use all reasonable endeavours to meet the expected Service Start Date.
- 9.16 Where the LFC becomes aware that it will be unable to meet the expected Service Start Date notified under clause 9.11, the LFC will promptly advise the Service Provider of a revised Service Start Date and the relevant consequence for a reschedule set out in the Service Level Terms shall apply.

Updating Service Requests and Service Orders

- 9.17 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.
- 9.18 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).
- 9.19 If the Service Provider changes an existing Service Request or Service Order under clause 9.18:
 - (i) The LFC will notify the Service Provider of a revised expected Service Start Date (where applicable to the type of Service Order involved); and
 - (ii) 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

- 9.20 The LFC will provide the Service Provider with confirmation that the PONFAS Service has been activated which may be before a Service Order has been completed if additional commercial work is being carried out to complete the Service Order.
- 9.21 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.
- 9.22 Service Order confirmations for PONFAS Distribution Services submitted to the Service Provider will contain at least the following information:
 - (i) Fibre Flexibility Point ID;
 - (ii) Service Identifier.
- 9.23 Service Order confirmations for PONFAS Feeder Services submitted to the Service Provider will contain at least the following information:

- (i) Local Central Office ID;
- (ii) Service Identifier.

Testing

- 9.24 At the completion of a PONFAS Feeder Service installation the LFC will perform an end-to-end test of the service from the Central Office to the Fibre Flexibility to ensure it is within specification.
- 9.25 At the completion of the first PONFAS Distribution Service installation for a PONFAS Feeder Service instance, the LFC will perform an end-to-end test of the service from the Central Office to the End User Premises or Service Provider Premises (as applicable) to ensure it is within specification.
- 9.26 At the completion of subsequent PONFAS Distribution Service installation for a PONFAS Feeder Service instance, the LFC will either verify optical connectivity, if the Service Provider has an active laser connected to the PONFAS Feeder Service, or use the Service Provider active network diagnostic tools to verify service is within specification.

Charges

- 9.27 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 Requests or Service Orders following the validation provided for in clause 9.7. Invoicing will commence in accordance with clause 7.3 of the General Terms.

Migration from Layer 2 services to PONFAS Distribution

- 9.28 A migration is where an End User is transferring from a Layer 2 wholesale-based broadband solution to a PONFAS-based broadband solution. The Layer 2 wholesale and PONFAS Distribution Services may be for the same or different Service Providers.
- 9.29 The Layer 2 wholesale and the PONFAS Distribution Services are independent services. A migration is managed as two transactions:
- (i) a PONFAS Distribution New Connection Service Request; and
 - (ii) a Layer 2 wholesale Relinquishment Service Request. Note that this request will leave the Northpower Fibre ONT intact;
- 9.30 If there is no spare orange fibres available at a location, then the PONFAS Distribution New Connection will be rejected. Service Providers can request additional fibre to be installed, as per 9.33 below.

PONFAS Distribution Capacity Management

- 9.31 The LFC provisions two fibres to End User premises:
- (i) A blue fibre, which is reserved for Layer 2 wholesale services; and
 - (ii) An orange fibre, which is available for additional Layer 2 wholesale services or PONFAS Distribution services;

9.32 A PONFAS Distribution Service can be allocated the orange fibre if:

- (i) It is not allocated to any service;

9.33 If the orange fibre is not available for allocation then the LFC may install additional fibre based on the LFC's 'additional fibre' policy. This policy may change over time and will be published on the LFC website, including any associated charges.

PONFAS Feeder Capacity Management

9.34 PONFAS Distribution New Connection Service Requests will automatically allocate the first available splitter port on the first available PONFAS Feeder in the Fibre Flexibility Point associated to the End User Premises;

9.35 If there is no spare splitter port available in the Fibre Flexibility Point then the PONFAS Distribution Service Request will be rejected as no resource is available;

9.36 Service Providers need to keep track of how many PONFAS Distribution Services are associated with a Fibre Flexibility Point, and how many PONFAS Feeder splitter ports are occupied or available;

9.37 A PONFAS Feeder splitter port is allocated when a PONFAS Distribution Service Request is accepted, not when it is connected. A new PONFAS Distribution Service Request will be rejected if all ports on the available splitters are already allocated, even if some splitter ports have not yet been physically connected.

9.38 There may be a delay, as detailed in the PONFAS Service Level Terms, between PONFAS Distribution services being relinquished and the associated PONFAS splitter port being available to be reallocated to a new PONFAS Distribution Service.

PONFAS Feeder Grooming

9.39 PONFAS Feeder Grooming is where a Service Provider wants to change associations between PONFAS Distribution Services and PONFAS Feeder Services, or between PONFAS Feeder Services and linking services. Examples of where this might be needed are:

- (i) load balancing heavy users between different Passive Optical Networks to prevent Passive Optical Network congestion;
- (ii) Fibre Flexibility Point rehome, where the PONFAS Feeder Service association to local Central Office will change; and
- (iii) Fibre Flexibility Point infill, where the PONFAS Distribution Service association to PONFAS Feeder Service may change.

9.40 PONFAS Feeder Grooming will be managed as a time and materials project:

- (i) Service Providers will submit a generic request outlining their requirements;
- (ii) the LFC will provide a statement of work outlining the cost and time to complete the requirements;
- (iii) following acceptance of the statement of work by the Service Provider, the LFC will implement the changes as per the agreed cost and time.

Fibre Flexibility Point Rehome

- 9.41 A Fibre Flexibility Point Rehome is where a Fibre Flexibility Point's association to a local Central Office is changed, i.e. the Fibre Flexibility Point is associated to a different Central Office. This is normally triggered where population growth and Premises infill has resulted in too many End User Premises associated with a Central Office to meet the LFC's resiliency requirements.
- 9.42 All PONFAS Feeder Services in the Fibre Flexibility Point will be associated to the new Central Office. The Service Provider will need to ensure that they can continue providing service from the new Central Office, either via equipment located within the Central Office, or using linking services such as ICABS or DFAS to a remote site.
- 9.43 A Fibre Flexibility Point Rehome could also result in a change to the optical characteristics of affected services, although this will remain within the PONFAS Distribution Service and PONFAS Feeder Service optical budget specifications.
- 9.44 The LFC will notify affected Service Providers of a PONFAS Feeder Rehome, as per the PONFAS Service Level Terms.
- 9.45 The Service Provider will submit a PONFAS Feeder Grooming request to advise how they want their PONFAS Feeder Service to change following the Fibre Flexibility Point Rehome.

Fibre Flexibility Point Infill

- 9.46 A Fibre Flexibility Point Infill is where Premises infill results in the number of Premises associated with a Fibre Flexibility Point exceeding the capacity of that Fibre Flexibility Point. This will result in the Fibre Flexibility being split. This typically will result in a new Fibre Flexibility Point being created, and Premises associated with the, two original Fibre Flexibility Points being split between the three Fibre Flexibility Points.
- 9.47 The LFC will notify Service Providers with PONFAS Feeder Services in the affected Fibre Flexibility Points of the changes, including:
- (i) all Premises associated with the original Fibre Flexibility Points, and their new Fibre Flexibility Point association;
 - (ii) a list of all PONFAS Distribution Services belonging to the Service Provider, including inflight orders, that will be re-associated to a different Fibre Flexibility Point;
- 9.48 Fibre Flexibility Point Infill will result in the number of Premises associated with each Fibre Flexibility Point changing significantly.
- 9.49 Following this notification, a Service Provider may choose to:
- (i) request one or more PONFAS Feeder Service(s) to be installed in the new Fibre Flexibility Point as part of the build of the new Fibre Flexibility Point and submit a PONFAS Feeder Grooming request to connect the PONFAS Distribution Services associated with the new Fibre Flexibility Point to the new PONFAS Feeder Service; or
 - (ii) relinquish the PONFAS Distribution Services associated with either the existing or the new Fibre Flexibility Point;
- 9.50 If the Service Provider does not request a PONFAS Feeder Service to be installed in the new Fibre Flexibility Point, then all PONFAS Distribution Services for Premises that will be

associated to the new Fibre Flexibility Point will be automatically relinquished. The Service Provider will need to manage the End User experience under these circumstances. For example:

- (i) Notify the End User that their broadband service is being removed; or
- (ii) Arrange for an alternate broadband service for the End User.

Submitting Bulk Service Requests

- 9.51 Bulk Service Requests enable a Service Provider to migrate, transfer or connect large volumes of End Users to the PONFAS Service in a co-ordinated manner.
- 9.52 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.
- 9.53 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

- 9.54 Each PONFAS Service may be subject to a Minimum Service Term. A Service Provider that terminates or relinquishes a PONFAS Service prior to the expiry of the Minimum Service Term may be required by the LFC to pay early termination charges in accordance with the Price List.

PART 4 – PROBLEM MANAGEMENT

10 OSS/BSS

- 10.1 The LFC has a fault management system as part of the OSS/BSS described in clause 10. In addition to processing Service Requests and Service Orders the OSS/BSS allows Service Providers to:
- (i) create a new trouble ticket;
 - (ii) retrieve a trouble ticket; and
 - (iii) 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 in a PONFAS Service or the LFC Network, as set out in clause 6 of the General Terms (LFC Fault). If the LFC investigates and no LFC Fault is affecting the PONFAS Service, the LFC may charge the Service Provider the “No fault found” Ancillary Charge as set out in the Price List. Where a fault is found which is an LFC Fault, a “No fault found” Ancillary Charge 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, as set out in clause 6.2 of the General Terms.

PONFAS Diagnostic Tools

- 11.3 PONFAS Diagnostic Tools are based on diagnostic analytics capability provided by the active equipment connected to the point-to-multipoint fibre and therefore must be provided by the Service Provider
- 11.4 Until the Service Provider has provided the LFC with diagnostic tools that will, in the LFC's opinion (acting reasonably), enable the LFC to confirm that a fault in relation to any PONFAS Service is an LFC Fault, the following process will be followed:
- (i) on receiving a fault report from an End User reported Fault in a PONFAS Service, the Service Provider will undertake diagnostics prior to submitting the fault to the LFC, including the results of their diagnostics;
 - (ii) if the LFC determines from the results of the diagnostics that the fault is an LFC Fault the LFC will take appropriate corrective action (which may involve a truck roll). If it is subsequently found not to be an LFC fault, the LFC will advise the Service Provider of this, close the fault and charge a “No fault found” Ancillary Charge in accordance with the Price List; or
 - (iii) if the LFC determines the fault is not an LFC Fault the LFC will advise the Service Provider of this and close the fault without charging a “No fault found” Ancillary Charge in accordance with the Price List. The Service Provider can request the LFC roll a truck if it believes the fault is an LFC Fault but, if it is subsequently found not to be an LFC fault, the LFC will advise the Service Provider of this, close the fault and charge a “No fault found” Ancillary Charge in accordance with the Price List.

- 11.5 Prior to the Service Provider providing the LFC with diagnostic tools that will, in the LFC's opinion (acting reasonably), enable the LFC to confirm that a fault in relation to any PONFAS Service is an LFC Fault the Service Provider will provide initial training for the LFC's staff for use of such diagnostic tools at no charge.

Reporting Faults to the LFC

- 11.6 Subject to clause 11.7 the Service Provider must use OSS/BSS for reporting all faults regarding the PONFAS 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.
- 11.7 Where the OSS/BSS is unavailable, the Service Provider must submit fault reports to the LFC by calling the 0800 fault reporting service number provided by the LFC, and a sequence number or other manual identifier will be provided by the LFC in accordance with its business continuity process. The LFC must use all reasonable endeavours to advise Service Providers immediately upon becoming aware that the OSS/BSS is unavailable, including how it will manage fault reports lodged prior to the OSS/BSS becoming unavailable which are unresolved.
- 11.8 Once the Service Provider has provided initial fault diagnosis, in compliance with clause 6.2 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:
- (i) contact details of the Service Provider logging the fault;
 - (ii) contact name, phone number, and alternate phone number (if available) of the End User experiencing the fault (where reasonably required);
 - (iii) End User's Service Identifier for service that is experiencing the fault (where appropriate);
 - (iv) fault type and description as can be best reasonably ascertained by the Service Provider;
 - (v) time the fault occurred or became known to the Service Provider;
 - (vi) address and contact details for the site of the fault (where appropriate);
 - (vii) confirmation that the initial fault diagnosis has been completed;
 - (viii) For PONFAS Feeder Service faults, the following information:
 - a) In the case of no communications:
 - PONFAS Feeder Service receive optical levels, as reported by the OLT;
 - PONFAS Feeder Service transmit optical levels, as reported by the OLT;;
 - ONT receive optical levels for all impacted ONT's
 - Last known ONT transmit optical levels for all impacted ONT's
 - PONFAS Feeder Service average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service;
 - ONT average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service;

- Is this impacting all provisioned PONFAS Distribution Services on the PONFAS Feeder Service - True/False?
 - Impacted PONFAS Distribution Services (service ID), if only some are impacted; and
 - Outage window, if only some PONFAS Distribution Services are impacted.
- b) In the case of intermittent Communications
- PONFAS Feeder Service receive optical levels, as reported by the OLT;
 - PONFAS Feeder Service transmit optical levels, as reported by the OLT;;
 - ONT receive optical levels for all impacted ONT's
 - Last known ONT transmit optical levels for all impacted ONT's
 - PONFAS Feeder Service receive optical level;
 - ONT average receive optical level across PONFAS Distribution Services connected to the PONFAS Feeder Service;
 - Is this impacting all provisioned customers on the PONFAS Feeder Service - True/False;
 - Impacted PONFAS Distribution Services (service ID), if only some are impacted; and
 - Is the outage window required to work on this service - True/False? If true then provide outage window.
- (ix) For PONFAS Distribution Service faults, the following information:
- a) In the case of no communications:
- Alarm state of ONT
 - PONFAS Feeder Service receive optical levels, as reported by the OLT;
 - PONFAS Feeder Service transmit optical levels, as reported by the OLT;;
 - ONT receive optical level;
 - Last known ONT transmit optical level;
 - PONFAS Feeder Service average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service; and
 - ONT average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service
- b) In the case of intermittent communications
- Alarm state of ONT
 - PONFAS Feeder Service receive optical levels, as reported by the OLT;
 - PONFAS Feeder Service transmit optical levels, as reported by the OLT;;
 - ONT receive optical level;

- ONT transmit optical level;
 - PONFAS Feeder Service average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service;
 - ONT average receive optical level across all PONFAS Distribution Services connected to the PONFAS Feeder Service;
 - BEC rate per hour up and down; and
 - Are there BEC on another ONT on the same PONFAS Feeder Service Yes/No? If Yes, then fault should be raised against the associated PONFAS Feeder Service;
- (x) any other relevant information reasonably required, including, in the absence of Service Provider PONFAS diagnostic tools that are accessible to the LFC, a phone number or contact for the LFC technician to request real-time access to diagnostic information.

11.9 If any of the above information in clauses 11.8(i) to 11.8(vi) is not provided to the extent necessary for the LFC to proceed to investigate the fault, the Service Levels will not apply until such time as the Service Provider has provided the required information.

11.10 The LFC is responsible for the repair of faults between the service demarcation points, including faulty termination at the MOFDF.

Updating Reported Faults

11.11 A fault report may be cancelled or changed, at any time before the fault report is closed. In respect of any such cancellation or change:

- (i) for a fault report that is cancelled or changed before a technician has been dispatched, the LFC will not charge the Service Provider; and
- (ii) for a fault report that is cancelled, or is changed (to the extent that a change prevents the dispatched technician from completing the fault investigation or repair task at the scheduled time originally advised to the Service Provider), once the technician has been dispatched, the LFC may charge the Service Provider the “No Fault Found” charge (item 9.5 of Appendix 3 of the Price List).

11.12 If the Service Provider changes an existing fault report under clause 11.11:

- (i) the LFC will notify the Service Provider of a revised expected Fault restoration time if the nature of the change requires the fault repair work to be rescheduled (change to access conditions, nature of fault, etc.); and
- (ii) if rescheduled in accordance with 11.11(i), the calculation of relevant Restoration and Availability Service Levels for that fault restoration, as defined in the Service Level Terms, may take into account delay time due to this rescheduling.

11.13 If the LFC reschedules a fault without being requested to do so by the Service Provider or End User, then the calculation of relevant Availability Service Levels for that Fault restoration, as defined in the Service Level Terms, will continue to be measured from the original time of the fault report to the actual fault restoration time

Hours of Operation

- 11.14 Faults can be logged 24 hours a day, seven days a week.
- 11.15 If a fault is logged outside of Business Hours, it is possible the LFC will only start working on the fault as from 8.00am the following day. Extended Fault Restoration Hours apply for enhanced service levels and emergency faults.
- 11.16 When a fault report is received, the LFC will advise the Service Provider, acknowledging receipt of the fault report.

Fault Tracking

- 11.17 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.
- 11.18 The LFC will use all reasonable endeavours to meet the notified expected fault restoration time as provided in clause 11.17.
- 11.19 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 expected Fault restoration time. In that situation the "Meet notified expected restoration time" Service Level in the Service Level Terms will continue to apply to the originally notified expected restoration time.
- 11.20 Where the Service Provider requests a specific Fault response time and the LFC accepts that time (e.g. because access must be provided to a remote site or an outage scheduled):
- (i) the applicable period for the Restoration Service Levels in the Service Level Terms will not include any extension of time that arises as a result of the LFC delaying its fault response due to a specific Fault Response Time request from the Service Provider that is accepted by the LFC; and
 - (ii) the "Meet notified expected restoration time" Service Level in the Service Level Terms will apply to the specific Fault Response Time requested by the Service Provider and accepted by the LFC.
- 11.21 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.
- 11.22 If the LFC identifies the need to send a faults contractor, the LFC will update OSS/BSS.
- 11.23 The Service Provider's consents to the LFC coordinating site access and any required outage window with the End User, unless the Service Provider advises the LFC that the Service Provider wishes to do so.

Fault Closure

- 11.24 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

- 11.25 The LFC may suspend supply of the PONFAS Service for the purpose of conducting

works, routine maintenance, remedial work or upgrades to the LFC's Network (Planned Outage).

11.26 The LFC will use all reasonable endeavours to:

- (i) conduct any Planned Outage between the hours of 11.00pm to 6.00am inclusive, where the LFC believes that is practical (acting reasonably);
- (ii) advise the Service Provider in advance of any Planned Outage with at least five Business Days' notice with the advice provided via the network events portal; and
- (iii) provide the following information:
 - a) a brief explanation of the reason for the Planned Outage;
 - b) the intended date, time and duration of the Planned Outage;
 - c) a description and Product Instance IDs of the impacted PONFAS Service(s) (or the relevant part) which will be affected by the Planned Outage; and
 - d) the name and contact details of the LFC's representative(s) who gave the advice.

11.27 The duration of any Planned Outage will be deemed to be Downtime for the calculation of relevant aggregate Availability Service Levels, as defined in the Service Level Terms.

Unplanned Outages

11.28 The LFC may suspend supply of the PONFAS Service:

- (i) due to any unplanned unavailability of the LFC's Network or the PONFAS Service; or
- (ii) in order to provide or safeguard service to the emergency or other essential services,

11.29 The LFC will use all reasonable endeavours to:

- (i) give the Service Provider as much advice as possible of the existence of any Unplanned Outage;
- (ii) advise the Service Provider as soon as reasonably practical after the LFC becomes aware of any Unplanned Outage with the advice provided via the LFC Web page;
- (iii) a description and Product Instance IDs of the impacted PONFAS Service(s) (or the relevant part) affected by the Unplanned Outage; and
- (iv) answer any reasonable questions from the Service Provider about the extent and duration of any Unplanned Outage.

11.30 The duration of any Unplanned Outage will be deemed to be Downtime for the calculation of relevant Availability Service Levels, as defined in the Service Level Terms.

11.31 If the Service Provider becomes aware of any Unplanned Outage before it receives advice from the LFC under clause 11.299, the Service Provider will make reasonable efforts to notify the LFC as soon as reasonably practical.

Emergency Faults

11.32 Emergency faults include, but are not limited to:

- (i) medical emergencies;
- (ii) where the End User provides an essential community service (e.g. police or a doctor's residence); or
- (iii) where there is a mass outage that impacts on 200 or more End Users.

11.33 Emergency faults reported to the LFC outside of Business Hours will be treated on a case-by-case basis, which may include proposing a temporary solution.

11.34 The Escalation Protocol is provided in Appendix B.

PART 5 – STANDARD PONFAS SERVICE INSTALL AND TERMINATION POINTS

12 PONFAS Feeder Service

12.1 The PONFAS Feeder Service includes a Splitter in an FFP connected to a designated Central Office. It comprises the following components:

- (i) installation of the Splitter at the FFP;
- (ii) allocation of the Feeder fibre between the FFP and the relevant Central Office, which could be extended with ICABs to another Central Office within the same candidate area;
- (iii) connection of the Feeder fibre to the splitter;
- (iv) connection of the Feeder fibre to the MOFDF in the Central Office;
- (v) connection of the Feeder fibre to the tie cables associated with the Service Provider Co-location space.

It excludes:

- (vi) Co-location at the local or remote Central Office, which is a separate service;
- (vii) OLT installation and commissioning;
- (viii) Central Office patching of the OLT port to the OFDF using tie cables, which is a separate service;
- (ix) connection of the PONFAS Distribution Service to the Splitter.

12.2 The PONFAS Feeder Service effectively opens up a geographical coverage area, as defined by the FFP, to be available for a Service Provider to order PONFAS Distribution Services.

12.3 A Service Provider can request multiple PONFAS Feeder Services to be connected to an FFP, but Splitter ports for subsequent PONFAS Feeder Services will only be allocated once previous PONFAS Feeder Services are fully occupied.

13 PONFAS Distribution Service

13.1 The PONFAS Distribution Service connects an end customer Premises within the FFP Coverage Area to the Splitter associated with and installed with the PONFAS Feeder Service. It comprises the following components:

- (i) allocation of the Distribution fibre and associated PONFAS Feeder Service Splitter port;
- (ii) connection of the Distribution fibre to the relevant Splitter;
- (iii) installation of the Distribution fibre from the End User Premises to the FFP, including lead-in and ETP if applicable;
- (iv) Premises wiring from the ETP to the ITP, including installation of the ITP if applicable;

- 13.2 The PONFAS Feeder Service is a prerequisite for the PONFAS Distribution Service, i.e. there must be a Splitter in the associated FFP for PONFAS Distribution Services to be requested.
- 13.3 There is only one FFP associated with a Premises. This association could change over time due to FFP rehoming or infill.

14 PONFAS Distribution Services - Installation

- 14.1 The PONFAS Distribution Service includes installation as set out below (in each case to the extent that the relevant provisioning works are not already complete for the relevant Service Order).

Standard Installation

Fibre Lead-in

- 14.2 The Fibre Lead-in Standard Installation applies to installations in:
- (i) Single Dwelling Units; and
 - (ii) Multi Dwelling Units with no more than three residential tenanted storeys;
- 14.3 The Fibre Lead-in Standard Installation for Residential Premises includes a Fibre Lead-in from the Fibre Access Point to an ETP, common ETP or OFDF as applicable, at the closest convenient (to the End User) point on the Premises, as agreed with the End User, up to a maximum distance of 200 metres per Premises. The Fibre Lead-in will comprise one or a combination of the following methods:
- (i) in an LFC-approved conduit or open trench (already in place at the time of installation); or
 - (ii) A double span of aerial drop lead on existing poles from Fibre access point (this will include road crossing and is available only in areas where there is overhead deployment); or
 - (iii) where the Premises does not have an LFC approved conduit or open trench already in place or are not capable of overhead deployment, one or a combination of the following:
 - a) surface-mounted conduit (installation on either vertical or horizontal surface) or any other low impact method (such as shallow bury); or
 - b) slot trenching; or
 - c) buried lead-in (other than slot trenching).

Business Fibre Lead-in

- 14.4 For Business Premises, the Fibre Lead-in Standard Installation includes a Fibre Lead-in from the Fibre Access Point to an ETP, common ETP or OFDF as applicable, at the closest convenient (to the End User) point on the Premises, as agreed with the End User, up to the maximum distances per Premises below, comprising one or a combination of the following methods:

- (i) 100 metres in an LFC approved conduit or open trench (already in place at the time of installation); or
- (ii) A double span of aerial drop lead on existing poles from Fibre access point (this will include road crossing and is available only in areas where there is overhead deployment); or
- (iii) where the Premises do not have an LFC-approved conduit or open trench already in place or are not capable of overhead deployment, one or a combination of the following:
 - a) 30m of buried lead-in (available only in areas where there is underground deployment)

General Fibre Lead-in Installations

- 14.5 Where existing infrastructure allows for installation in accordance with clauses 14.2 to 14.4, those installation methods will be used. In all other cases the installation method will be agreed with the End User for a Premises or in the case of an MDU the MDU owner(s) or their agent.
- 14.6 For Standard Installations, the FAP in a private road or right of way is deemed to be located at the boundary between the private road or right of way and the adjoining public road. The 200m limit will be applied on a cumulative basis. For example, three Premises sharing a right of way would have up to 600m of Fibre Lead-in in total included in the Standard Installation distance limit.

Multi Dwelling Unit Common Infrastructure (Standard)

- 14.7 The Standard Installation of a PONFAS Service in an MDU includes the MDU Common Infrastructure to all Multi Dwelling Units with no more than three residential tenanted storeys;
- 14.8 The LFC Network fibre within the MDU (the Fibre Lead-in, the MDU Common Infrastructure (if any), and the fibre to an End User Tenancy), whether currently in use or not, is only available for use by the LFC.

Non-standard installations

Fibre lead-in (Non-Standard)

- 14.9 The Non-Standard Installation applies to the extent that any Fibre Lead-in is in excess of any of the lengths or where an installation method is not one of the methods included as part of a Standard Installation. This means there will be incremental charges for installations that are outside the criteria specified for Standard Installations.
- 14.10 The Fibre Lead-in in gated communities which are not MDUs is a Non-Standard Installation.

Multi Dwelling Unit Common Infrastructure (Non-Standard)

- 14.11 The installation of MDU Common Infrastructure (in MDUs which exceed three residential tenanted storeys) is a Non-Standard Installation. The LFC will contribute \$1,000 per End User Tenancy to the costs of the MDU Common Infrastructure in these MDUs.

Beyond the ETP

14.12 All installations include an extension of the Fibre Lead-in from the ETP (there will not necessarily be a break in the Fibre Lead-in at the ETP) or OFDF as applicable to:

- (i) a suitable mounted SC/APC connector on an ITP at a secure location inside the Premises, End User Tenancy; or
- (ii) if there is an OFDF beyond the ETP, a splice, SCA or LCA connector on the OFDF within the Premises, End User Tenancy;

Reinstatement

14.13 For all installations the LFC will reinstate all surfaces on a like-for-like basis (i.e. the LFC will use concrete where concrete has been used, grass where grass has been used and asphalt where asphalt has been used. The LFC does not guarantee that it will be able to identically match surface finish (e.g. colour, texture or pattern) and reinstatement will be limited to the areas where the works have been carried out by the LFC). Reinstatement at an End User's premises is to be completed to the standard that was agreed to at the scope appointment and that was accepted in writing by the End User. If reinstatement is not completed on the same day of the build/installation then the LFC shall complete the reinstatement by an agreed commitment date (which shall be no later than 30 days after the day of the completed build/installation).

Termination Points

Single Dwelling Unit Termination Point

14.14 For a Single Dwelling Unit, the termination point of the Layer 1 component of the PONFAS Distribution Service for the purposes of the connection at the Premises, and the network demarcation point between the LFC Network and the Premises wiring is, as applicable, either:

- (i) the SC/APC connector on the end of the Fibre Premises wiring at the ITP; or
- (ii) a splice, SCA or LCA connector on the OFDF,

MDU Termination Point

14.15 For MDUs, the termination point of the Layer 1 component of the PONFAS Distribution Service for the purposes of the connection at the End User Tenancy, and the network demarcation point is as applicable, either:

- (i) the SC/APC connector on the end of the Fibre Lead-in at the ITP; or
- (ii) a splice or LCA connector on the OFDF,
within the End User Tenancy.

Alternative Termination Points

14.16 The LFC and the Service Provider may agree on a different termination point as part of a Non-Standard Installation. A Non Standard Installation for a PONFAS Distribution Service within an MDU 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.

PART 6 – CONSENTS PROCESS [UPDATE PENDING FOR LAND ACCESS LEGISLATION]

15 Consents for a Single Dwelling Unit (SDU) and an End User Tenancy (MDU Tenancy) in an MDU

- 15.1 Consents for installing a PONFAS Distribution Service in a Single Dwelling Unit (SDU) and an End User Tenancy (MDU Tenancy) in an MDU are identical to those processes described in the Bitstream Operations Manual.

PART 7 – PONFAS FEEDER SERVICE HANDOVER AND TIE CABLE INSTALLATION

16 PONFAS Feeder Service Handover

Overview

16.1 The PONFAS Feeder Service hands over at the MOFDF in the local Central Office associated with the FFP. There is one and only one local Central Office associated with an FFP. A list of FFPs and associated local Central Offices is available on the LFC website.

Connection Options

16.2 When the Service Provider places a PONFAS Feeder Service Request, the LFC will supply and install a PONFAS Feeder Service as a termination on the MOFDF. The Service Provider will also need to request an additional service to get the traffic to its network and/or equipment. The additional services available from the LFC to extend the PONFAS Feeder Service from the termination at the MOFDF are:

- (i) a Tie Cable to the Service Provider Footprint located within the Central Office described in clause 17.2(i) provided under the Central Office and POI Co-location Service;
- (ii) a Tie Cable to another Service Provider's Footprint located within the Central Office described in clause 17.2(ii) provided under the Central Office and POI Co-location Service;
- (iii) a Tie Cable between the Service Provider or third party network outside and adjacent to the Central Office manhole and the MOFDF described in clause 17.2(iii) provided under the Central Office and POI Co-location Service;
- (iv) a Direct Fibre Access Service between the Central Office MOFDF and the Service Provider POI within the Central Office Coverage Area provided under the Direct Fibre Access Service;

16.3 The LFC responsibilities:

- (i) the LFC will terminate the PONFAS Feeder Service on the MOFDF (including its splice or connection to the options in clause 16.2 above); and
- (ii) the LFC is responsible for the repair and/or replacement of faults in the PONFAS Feeder Service and faulty termination at the MOFDF.

17 Tie Cable Installation

Introduction

17.1 To use a PONFAS Feeder Service in conjunction with equipment co-located in their Footprint in the Central Office or elsewhere a Service Provider will need to have a Tie Cable between the Central Office MOFDF and their equipment. To provide services over the PONFAS Feeder Service the Service Provider may also need to have a Tie Cable between the Central Office MOFDF and their Footprint.

Types of Tie Cables

17.2 There are three types of Tie Cable available for Service Providers who take the PONFAS Services:

- (i) an internal Tie Cable from the Central Office MOFDF to the Service Provider footprint;
- (ii) an internal Tie Cable from one Service Provider Footprint to another Service Provider Footprint provided under the UFB Co-location Service (the footprints can be same or different Service Providers or a third party backhaul provider); or
- (iii) an external Tie Cable from the Central Office MOFDF to a third party network manhole outside and adjacent to the Central Office manhole.

These Tie Cables can be used to connect PONFAS Services or backhaul to the Footprint and are provided under the Central Office and POI Co-location Service.

17.3 A Service Provider may supply its own Tie Cables or the Service Provider may ask the LFC to supply Tie Cables. In either case the Tie Cables must meet the specification set out in the LFC's Cable Specification document.

17.4 The Tie Cable Service installation charges set out in the Price List will apply.

17.5 The Tie Cable Service is described further in the Central Office and POI Co-location Service Description and the Central Office and POI Co-location Service Operations Manual.

17.6 For the avoidance of doubt only the LFC contractors may undertake work on the Central Office MOFDF or anywhere else in Central Office outside of Service Provider's Footprint.

PART 8 – TEST FACILITIES

18 Test Facility

Overview

- 18.1 The LFC recommends Service Providers use their internal integrated test environment to develop and test their active network equipment prior to deployment in the LFC network
- 18.2 The LFC can host Service Provider equipment to be tested using standard Co-location services.
- 18.3 Note that LFC's non-production environment, Co-Innovation Laboratory and Innovation Laboratory are designed for development of Layer 2 solutions and are not suitable for Service Provider equipment testing.

PART 10 – BILLING

19 Billing

Invoicing

- 19.1 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 (eBill). eBill will replace the provision of a paper invoice, however a printed GST summary will still be provided to the Service Provider. A hard copy paper invoice will be available to Service Providers at the price set out in the PONFAS Price List.
- 19.2 The eBill must include the following information:
- (i) FSL Identifier;
 - (ii) Fault or Service Order identifier;
 - (iii) any Core Service Rebates; and
 - (iv) type of fee.
- 19.3 The LFC will send an electronic bill.
- 19.4 The Service Provider will provide the LFC with the list of people who 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 Service Provider free of charge.
- 19.6 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

- 19.7 If the Service Provider wishes to raise a billing enquiry, it may do so by emailing the LFC billing team in the first instance at the billing email address supplied by the LFC.
- 19.8 The email must include the following information:
- (i) a header reading 'Billing Query'; and
 - (ii) 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 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.
- 19.11 The process set out in clause 19.7 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 11 – OPERATIONAL READINESS PROGRAMME

20 Service Provider Onboarding

20.1 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;

- (i) the establishment of commercial relationships;
- (ii) set up of OSS/BSS interfaces;
- (iii) build of Footprints (if required);
- (iv) training as per clauses 20.12 and 20.134 and
- (v) the testing and commissioning of processes.

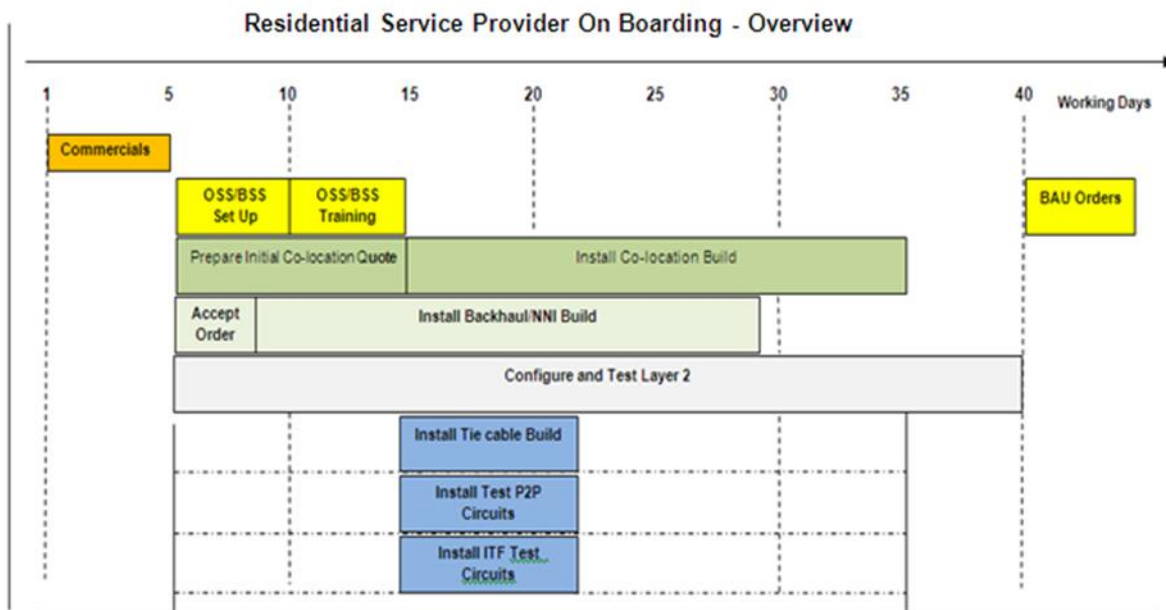
Each task within the on-boarding plan has appropriate service levels, milestones, the LFC and Service Provider requirements. The diagram below provides an overview of the plan.

20.2 The items in paragraphs 20.1(i) to 20.1(iii) of the on boarding process are specific to onboarding of the Service Provider to enable consumption of PONFAS services, e.g. execution of commercial agreements and staff training, and the Service Levels set out in this Part 11, subject to:

- (i) delay in the provision of materials or information to be supplied by the Service Provider, required to complete the item;
- (ii) acts or omissions of Service Providers that prevent the LFC from completing item e.g. making staff available for training; and
- (iii) any period of extension agreed between the Service Provider and an End User or between the LFC and the Service Provider.

20.3 The items in paragraphs 20.1(i) to 20.1(v) of the onboarding process, that involve provision of UFB services e.g. Handover Connection or Co-location Footprint, will be subject to the Service Levels in the appropriate Service Level Terms, including any service level extensions in those terms.

20.4 The diagram below provides an overview of the plan with indicative timings.



20.5 Timings will vary significantly based on scale and ONT installation requirements.

Commercials

20.6 The Service Provider will be required to sign a WSA and meet the requirements of the General Terms before they can take the PONFAS Services.

20.7 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

20.8 The LFC's OSS/BSS is required to enable the Service Provider to place and track Service Requests and Service Orders for PONFAS Services, to report faults and to obtain other operational information.

20.9 The Service Provider needs to have the OSS/BSS system in place and staff available for training.

20.10 Set up of the OSS/BSS requires the LFC to allocate passwords and test interfaces including processing trial Service Requests.

20.11 The LFC will provide training to the Service Provider staff which includes:

- (i) explanation of guides, products, processes, procedures and tools;
- (ii) submission of test Service Requests;
- (iii) handling exceptions; and
- (iv) Q&A.

20.12 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:

- (i) overview of forecasting templates;
- (ii) overview of forms for Service Requests;
- (iii) basic details of OSS/BSS (including demonstration of the system);
- (iv) overview of billing and accounts; and
- (v) Q&A.

20.13 The Service Provider will ensure that a reasonable number of staff (up to a maximum number of 10 per session) attend any training provided.

20.14 Any additional training required by the Service Provider beyond reasonable initial set up training (up to 50 hours) may be charged for by the LFC in accordance with the Price List.

Co-location

20.15 If a Service Provider requires Co-location space, the Service Provider may place an initial Service Request with all required information once the OSS/BSS access is in place and their staff are trained in its use.

20.16 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.

20.17 The provision of a Co-location footprint and any associated ancillary services will be subject to the Service Levels in the Central Office and POI Co-location Service Level Terms.

Tie Cables

20.18 If a Service Provider requires Tie Cables for their Co-location space, the Service Provider may place initial Service Requests with all required information once the OSS/BSS is in place and their staff are trained in its use.

20.19 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.

20.20 The provision of any Tie Cable will be subject to the Service Level in the Central Office and POI Co-location Service Level Terms.

BAU

20.21 Once on boarding and testing is successfully complete the Service Provider can place Service Requests for PONFAS Services.

PART 12 – MDU CONNECTION PROCESS

21 MDU PONFAS connection process

- 21.1 Smaller MDUs, where the serving FFP is outside the MDU physical footprint, will follow the MDU connection process as outlined in the Bitstream Operations Manual;
- 21.2 Larger MDUs that require an FFP inside the MDU physical footprint must have the MDU Common infrastructure installed, as per the MDU connection process outlined in the Bitstream Operations Manual, before a PONFAS Feeder Service can be ordered for that location.
- 21.3 Where the LFC has completed an MDU Common Infrastructure build, then any orders for PONFAS Distribution Services in that MDU will follow the order and consent process as an SDU Order.
- 21.4 An MDU Common Infrastructure build will provide sufficient fibre capacity to deliver two fibres, a 'blue' and an 'orange' fibre, to each End User tenancy within the MDU with some spare capacity on a case-by-case basis. If the orange fibre is not available for allocation then the LFC may install additional fibre based on the LFC 'additional fibre' policy.

PART 13 – OTHER

22 Requirements for End User Site Visits by the LFC

- 22.1 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.
- 22.2 For a provisioning related site visit the LFC or its representative will contact End Users to facilitate the LFCs or its representative's attendance at the End User Premises for appointments arranged through the Service Provider. The LFC or its representative will contact the End User on the supplied number 24 hours before the appointment to confirm both their availability and, if applicable, that the ONT or required CPE has arrived. Additionally the LFC technician will contact the End User on the supplied number before 9am on the morning of the appointment to confirm arrival time. If the LFC technician is unable to contact the End User (using the contract details provided by the Service Provider) to confirm the End User's availability then the LFC may reschedule the appointment to a later date at which the End User's availability can be confirmed.
- 22.3 For a fault related site visit the LFC or its representative will contact End Users if required to facilitate the LFC's or its representative's attendance at the End User Premises for appointments arranged through the Service Provider. The LFC technician will contact the End User on the supplied number as they leave the previous task to confirm arrival time.
- 22.4 The LFC representatives will carry LFC identification and wear appropriate clothing.
- 22.5 The LFC representative will use all reasonable endeavours to start all visits to an End User's site at the scheduled time.
- 22.6 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.
- 22.7 At the completion of all site visits, the LFC representative will record the relevant details in appropriate systems.
- 22.8 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.

23 Premises Wiring, ONT and Approved CPE Installation.

- 23.1 When monitored alarms and/or other line grabbing devices (e.g. medic alarms or some broadcast digital services) are installed at an End User Premises or Service Provider Premises (as applicable) and the Service Provider takes the PONFAS Services, the

Service Provider should advise its End User of the need to ensure that the necessary arrangements are made to ensure the services continue to operate, or alternatively the End User should be advised alternative arrangements are required to retain existing functionality.

- 23.2 Service Provider is responsible for selecting, supplying and maintaining their equipment.
- 23.3 If a fault is found to be caused by non-compliant wiring or equipment which is not part of the PONFAS Service or otherwise within the LFC's responsibility, then the Service Provider will be liable for the "No fault found" Ancillary Charge as set out in the Price List. Service Providers may choose to advise its End User of the need to ensure that the installation of Premises wiring at the End User Premises or Service Provider Premises (as applicable) is correct and in accordance with the TCF premises wiring code.

24 Premises Lead-in Fibre Installation

- 24.1 The limits of the Standard Installation are described in this Manual. Additional work required to provide a Connection may be carried out at the same time for an additional charge and that work will not be subject to the Service Levels.
- 24.2 The installation of conduits and lead-in pipes at each End User Premises or Service Provider's Premises (as applicable) will be in accordance with the LFC work practises and the TCF Premises wiring code. Any existing conduits or Lead-in pipes that are reused must also conform to the same standards.

25 Lawful Intercept

Introduction

- 25.1 Under the Telecommunications (Interception Capability) Act 2004 (TICA)¹ a network operator must ensure that every public telecommunications network that the operator owns, controls, or operates, and every telecommunications service that the operator provides in New Zealand, has an interception capability. What is required in terms of interception capability is also set out in the TICA, along with the nature of the obligation to assist the Police, SIS or GCSB (Surveillance Agencies) when a warrant is served to intercept in a particular matter or there is otherwise lawful authority to do so.
- 25.2 Service Providers should contact the Surveillance Agencies in order to discuss their obligations to provide interception capability under the TICA. The LFC can put you in contact with the appropriate contact person for the Surveillance Agencies.

Additional Interception Capability Assistance

- 25.3 The LFC may be able to assist Service Providers in meeting their specific obligations under the TICA on a commercial consulting basis (i.e. for a fee).

¹ The relevant defined terms are set out in the TICA

APPENDIX A – GLOSSARY

Term	Definition
Aged Tenancy Order	Means either an MDU connection where the LFC has installed a Residential or Business Connection to a tenancy in an MDU and has only obtained consent for connection of that tenancy and provision of Services to that tenancy.
Availability Period	means the shorter of: (a) the period of the previous 12 months; and (b) the period of months since the LFC last failed to meet the relevant Service Level.
Automated Pre-qualification	means the automated delivery of information on the availability of services at a given address via the OSS/BSS.
B2B	means the OSS/BSS Business to Business Web Services Interface that allows Service Providers to integrate their front end systems with the LFC's ordering and service management systems.
BAU	means business as usual – the ongoing, every day operation of business, processes and systems.
Bitstream Services	means the Layer 2 wholesale services described in the Service Descriptions for Bitstream 2, Bitstream 3, Bitstream 3a, Bitstream 4, ATA Voice, Multicast and UFB Handover Connection.
Best Industry Practice	means the exercise of the skill, diligence, prudence, foresight and judgement, as determined by reference to good national and international practice generally applied in fibre access projects OECD countries, which would be expected from a highly skilled and experienced person under the same or similar circumstances to those applicable under the UFB Services.
Bulk Service Request	means a transfer or new connection of a large volume of service instances as more particularly described in the relevant Operations Manual.
Build Cost	means the cost for the LFC to build the Co-location Footprint requested.
Build Time	means the time for the LFC to build the Co-location Footprint requested measured from the time the Quote is accepted.
Business	means any undertaking that is carried on, whether for gain or reward or otherwise.
Business Connection	means a Connection requested by a Service Provider in relation to an End User that is a Business.
Candidate Area	means the geographical area indicated as such on the candidate area map available at www.northpoerfibre.co.nz .
Central Office	means the building which terminates local access fibres and may house both LFC and Service Provider equipment required for providing services over the access fibre network.
Central Office and POI Co-location Service	means a service that provides co-location facilities for a Service Provider's equipment, and access to a Handover Point, at the LFCs Central Office solely for the purposes of providing access to, and interconnection with, the LFC Network as described in the Central Office and POI Co-location Service description.
Central Office ID	means a unique alphanumeric identifier assigned by the LFC to a Central Office.
Central Office Entry Point	means the congregation point for all ducts and cables that enter a Central Office that is nominated by the LFC as the Central Office entry point, usually a manhole.
Co-location Build	means the build work required by the LFC to provide the Co-location footprint requested by the Service Provider.

Term	Definition
Communal Infrastructure	<p>means any fibre network infrastructure in the Coverage Area which is deployed independently of any End-User Specific Infrastructure and which is not located on Premises, including any of the following within the Coverage Area:</p> <ul style="list-style-type: none"> (a) Interconnection Points; (b) Central Offices; (c) cabinets and/or fibre cross connection points; (d) intra-Coverage Area backhaul fibre connecting the interconnection points, Central Offices and cabinets; (e) distribution fibre running along each street, past Premises; (f) feeder fibre running from Central Offices to cabinets or fibre cross connection points; (g) associated ducts and other fixed civil infrastructure required to deploy fibre; and (h) passive optical equipment installed in the LFC cabinet and/or a Central Office.
Connection	<p>means:</p> <ul style="list-style-type: none"> (a) the cable joining the Fibre Access Point to the External Termination Point of a Premises, with such cable to be either from the pit on the adjoining boundary of two properties where the Fibre Access Point is located in underground deployment, or from the pole nearby to a number of premises in aerial deployment; and (b) all other infrastructure (excluding Communal Infrastructure) necessary to enable the provision of the Wholesale Services (including layer 1 and layer 2 services) to the relevant End User, <p>and “Connected” will be construed accordingly.</p>
Coverage Area	<p>means, as the context requires, either:</p> <ul style="list-style-type: none"> (a) the area comprising all Candidate Areas or (b) the geographic area serviced by a given Handover Point;
CPE	<p>means Customer Premises Equipment. This is equipment, including an ONT, used by the End User or provided by the Service Provider at the End User site to use or interface with the PONFAS service.</p>
Customer Authorisation	<p>means a valid authorisation for a Transfer Service Requests by a customer or a customer’s duly appointed agent that meets the requirements of the Customer Transfer Code.</p>
Customer Transfer Code	<p>means the Code for the Transfer of Telecommunications Services approved by the Commission on 12 October 2006 and/or endorsed by the TCF on 3 November 2006, as applicable, and any equivalent replacement Code or Codes.</p>
Direct Fibre Access	<p>means the service described in the Direct Fibre Access Service Description.</p>
Deemed Acceptance Time	<p>means the time which is four Business Hours after the Receipt Time of a valid Service Request. To avoid doubt, a Service Request may still be rejected notwithstanding a deemed acceptance.</p>
Downtime	<p>means the length of time that an End User is without service, measured from the time that a fault is detected, either by an End User fault report or by an LFC Network surveillance system, to the time the fault is resolved and the service is restored. Downtime excludes service interruptions as a result of End User, Reseller or Service Provider actions, and ONT outages due to power failure.</p>
eBill	<p>means invoices provided in an electronic format.</p>
EIR	<p>Excess Information Rate. This is the amount of un-guaranteed throughput – frames submitted within this throughput will be considered discard eligible by the network.</p>
EAS	<p>Means Ethernet aggregation switch.</p>
End User Tenancy	<p>means the occupancy of an End User (for example, an apartment, townhouse, office or shop) in an MDU to which the Service Provider requests the LFC to provide a Service. To avoid doubt, this does not include common areas within an MDU.</p>

Term	Definition
End User-Specific Infrastructure	<p>means the infrastructure in the Coverage Area separate from, and connecting with, the Communal Infrastructure and the Layer 1 Communal Infrastructure to provide service to End User connections, including the following:</p> <ul style="list-style-type: none"> (a) fibre from a Premises to the Communal Infrastructure already in place outside the boundary of a Premises; (b) any electronic and/or optical equipment the LFC may be required to install on Premises; (c) associated ducts and other fixed civil infrastructure required to deploy the End User-specific fibre assets; (d) any capitalised investment directly associated with each marginal End User (for example, the value of any software licences that might be supplied to the LFC on a “per End User” basis); and (e) any active electronic equipment installed in a Premises required to provide the layer 2 Wholesale Services.
ETP	<p>means a suitable fibre termination facility located as an attachment to an external structure located at the End-User Premises or Service Provider Premises. It is not mandatory for the fibre to be broken and terminated at that point, although it will serve as an access point for breaking and testing should the need arise.</p>
FFP	<p>Fibre Flexibility Point. An Exchange, roadside cabinet, enclosure or underground pit where the PONFAS Feeder Service from the Central Office is connected or patched to the PONFAS Distribution Service that connects to the End User Premises or Service Provider Premises (as applicable). In the case of PONFAS services it also houses the Splitters.</p>
FFP Coverage Area	<p>means the geographic area containing the Premises that can be connected to a specific FFP.</p>
Fibre Access Point or FAP	<p>A point on the End User Premises or Service Provider Premises (as applicable) boundary where the Fibre Lead-in connects to the distribution network, either from the pit on the adjoining boundary of two properties where the Fibre Access Point is located in underground deployment, or from the pole nearby to a number of Premises in aerial deployment to provisioning.</p>
Fibre Flexibility Point Infill	<p>means where a new FFP is built within the existing fibre footprint as a result of Premises growth. This usually involves dividing Premises associated with two existing FFPs being divided amongst the two existing FFPs and the new FFP.</p>
Fibre Flexibility Point Rehome	<p>means where an FFP’s association to a local Central Office is changed. This usually occurs where population growth has resulting in too many End User Premises associated to a Central Office to meet the LFC’s resiliency requirements</p>
Fibre Lead-in	<p>The fibre from the Fibre Access Point to a jack inside the End User Premises or Service Provider Premises (as applicable) or OFDF.</p>
Fibre Customer Transfer Code	<p>means the TCF Non-Regulated Customer Transfer Code for Fibre Services as amended or replaced from time to time.</p>
First MDU Order	<p>means the first properly completed order from a Service Provider received by the LFC for a Residential or Business Connection in relation to each MDU.</p>
First MDU Connection Date	<p>has the meaning given to that term in clause 1.2 (c) (iii) of Appendix 1 to the Service Level Terms;</p>
Footprint	<p>means a space at any Northpower Fibre Central Office that is allocated to the Service Provider for the installation of its equipment but excludes any space occupied by the Service Provider’s Tie Cables.</p>
Forecast	<p>means any or all (as the context requires) of the Forecasts required to be provided by the Service Provider in any Operations Manual.</p>
Forecast Service Requests	<p>means a forecast Service Requests, as reported in a Forecasting Report.</p>

Term	Definition
Forecasting Template	means the template provided by the LFC either as: (a) Excel spreadsheet with a separate worksheet for each Forecast type, an example of which is attached as Appendix C; or (b) a web based template for each Forecast type.
FSL	Means fibre service location number
General Terms	Means the document entitled "General Terms" signed by the LFC and the Service Provider. The General Terms forms part of the WSA.
GPON	means Gigabit Passive Optical Networking and is defined by the ITU in the G.984 series of recommendations
Greenfields	Means a new subdivision where there is no existing telecommunication infrastructure.
Handover Point	This is the exchange where the PONFAS Feeder service is handed over from Northpower Fibre to the Service Provider. The Service Provider can connect the service to their site, to collocation space in the Handover Point exchange or use a backhaul service to deliver the service to a different location.
ITP	means Internal Termination Point and a suitable fibre termination jack or splice located as an attachment to an internal structure located within the End-User Premises. It will serve as an access point for testing should the need arise. This is the default termination point for PONFAS Distribution services, unless otherwise agreed.
Layer 2	means layer 2 of the OSI Model, being active fibre optic network infrastructure.
Law	means: (a) any statute, regulation, by law, ordinance or subordinate legislation in force from time to time to which a party is subject; (b) the common law and the law of equity as applicable to the parties from time to time; (c) any binding court order, judgment or decree; (d) any applicable industry code, policy or standard enforceable by law; or (e) any applicable direction, policy, permission, consent, licence rule or order that is binding on a party and that is made or given by any governmental, legal or regulatory body having jurisdiction over a party or any of that party's assets, resources or business, in any jurisdiction that is applicable to the WSA, including all applicable district or regional plans, district council bylaws, district council codes of practice and development manuals for roading and New Zealand Transport Agency guidelines and standards.
LC Connector	means an LC Angle Polished Connector (APC) conforming to Grade B insertion loss and Grade 1 return loss performance as per IEC 61755-1
LCA connector	Little Angled Connector conforming to Grade B insertion loss and Grade 1 return loss performance as per IEC 61755.
LFC Sites	Means any premises utilised by the LFC to provide a service, including all Central Offices.
LFC Build	means the build work carried out by the LFC to provide the Co-location Footprint requested by the Service Provider.
MOFDF	means the main optical fibre distribution frame being a facility in the relevant office for terminating access fibres.
Month [x]	means the calendar month that is [x] calendar months before a Service Requests Month.

Term	Definition
Multi Dwelling Unit or MDU	<p>means a premises containing within its boundaries more than one residential or commercial occupancy (or both). Examples of MDUs (albeit a non-exhaustive list) are set out below.</p> <p>Includes semi-detached, apartments, townhouses, gated communities and assisted-living facilities that share a common property boundary. MDU facilities may be under a single roof or they may consist of multiple buildings on a residential campus. MDUs may include only residential units or they may have residential units along with commercial and retail spaces. The BICSI defines 3 types of MDUs:</p> <ol style="list-style-type: none"> 1. Low-rise MDUs: Each unit has access to the ground level and also has a roof line such as townhouses and semi-detached dwellings. 2. Mid-rise MDUs: These include duplexes, two storey apartments and other building styles in which units are stacked upon one another. 3. High-rise MDUs: High-rise MDUs most closely resemble large commercial buildings with few units having direct access to the roof line or ground floor.
MDU Common Infrastructure	<p>means any internal cabling and other build work within the MDU (in addition to the work required to install the first Connection in the MDU to provision the First MDU Order) which the LFC considers is reasonably necessary to enable the LFC to meet the Service Levels for Subsequent MDU Orders;</p>
MDU Connection Pre-requisite Steps	<p>means the process set out in this Manual;</p>
MDU Connection Process	<p>means the process to install the first MDU Connection in the MDU to provision the First MDU Order and, if the LFC elects, to install the MDU Common Infrastructure (if any), as set out in this Operations Manual;</p>
Multi-Dwelling Unit Infrastructure or Multi-Business Unit Infrastructure	<p>means the individual fibre connection from the point that the End User-Specific Infrastructure terminates at the Premises to an individual residence or commercial tenancy in a multi-tenant building or if the LFC has provide backbone and floor cabling within MDU the individual fibre connection from the point that the End User-Specific Infrastructure enters the Premises to an individual residence or commercial tenancy in a multi-tenant building;</p>
NOC	<p>means Network Operations Centre.</p>
Non – Standard Installation	<p>means in relation to a service means any work required to be performed by the LFC to install that service that falls outside the definition of Standard Installation.</p>
OFDF	<p>Optical Fibre Distribution Frame. An optical fibre distribution frame installed in an MDU or End User Premises or Service Provider Premises (as applicable) used to terminate the Fibre Lead-in.</p>
OLT	<p>means optical line termination as defined in the ITU-T G.984 series specifications and is the device that is located in the Central Office and is the endpoint of a PON</p>
ONT/ONU	<p>means the Optical Network Terminal that terminates a Bitstream Service (LFC Layer 2 wholesale service or Service Provider PON service) in the End User Premises, Service Provider Premises or Reseller Premises (as applicable).</p>
OSS	<p>means the LFC's operational support systems.</p>
Passed	<p>means when Premises have been passed with Communal Infrastructure (and, where the context requires, includes Layer 2 Communal Infrastructure) and is capable of Connection from the nearest point to the private boundary (if underground) or nearest pole (if aerial) (and Pass is to be interpreted accordingly).</p>
PON	<p>means Passive Optical Network as defined in ITU standard G.984.5 (May 2014).</p>
PONFAS or PONFAS Service	<p>means Passive Optical Network Fibre Access Service, which provides a point to multipoint dark fibre connection between a central office and multiple premises designed for passive optical network (PON) solutions. It comprises two services:</p> <ol style="list-style-type: none"> 1) A PONFAS Feeder Service; and 2) A PONFAS Distribution Service

Term	Definition
PONFAS Distribution Service	means a dark fibre service that connects a Premises to a Splitter located in a local Fibre Flexibility Point, where that Splitter is part of a PONFAS Feeder Service. The PONFAS Distribution Service, when combined with a PONFAS Feeder Service, forms a point to multipoint dark fibre service.
PONFAS Feeder Grooming	means the action of physically unjampering a PONFAS Distribution Services from one PONFAS Feeder Service and associating and physically jampering it to another PONFAS Feeder Service, usually to improve efficiency or manage contention.
PONFAS Feeder Service	means a dark fibre service that includes a Splitter located in a Fibre Flexibility Point and a fibre that connects the Splitter to the MOFDF in the local Central Office. The PONFAS Feeder service, when combined with one or more PONFAS Distribution Services, forms a point to multipoint dark fibre service.
POI	Point. Of Intercept his is the point at which a Service Provider provides a service – either directly or via a backhaul service.
Port	means a physical port within the Network, excluding UNI, E-NNI and PON ports. All virtual ports and sub-interfaces within the physical Ports must however automatically scale up to the physical Port capacity otherwise they will also form part of a Port.
Priority Users	Priority Users means businesses of any size, schools (including state, state integrated and independent schools) and health service providers (including private sector health providers, hospitals and significant health care provider sites, for example emergency and medical centres, and radiologists).
Premises	means a single building or structure located on a defined geographical site (such as may be evidenced by a certificate of title), which has a unique physical address recognised by NZ Post, and is occupied by or could readily be occupied by a potential End User and, for the avoidance of doubt: a) a Premises does not include a NBAP; b) a Multi-Dwelling Unit only constitutes a single Premises; and c) a Premises includes each such building or structure that is in, or that is from development activities reasonably anticipated in the near future to be in, a greenfields area or development site that is within or adjacent to the Coverage Area.
Priority Users	Priority Users means businesses (of any size, including private sector health providers), schools (including state, state integrated and independent schools) and health service providers (hospitals and significant health care provider sites, for example emergency and medical centres, and radiologists);
Production Splitter	means a PON splitter.
Quote	means an estimate provided by the LFC for services requested by Service Provider that do not have a set charge in the Price List.
Receipt Time	means: (a) for Service Requests that are made using the OSS/BSS, the time that the electronic communication containing the Service Request enters the OOS/BSS; or (b) for Service Requests that are made by email, the time that a Service Request is received in the LFC designated inbox for receipt of such Service Requests, provided that where a Service Request is received outside Business Hours, the Receipt Time will be the start of the first Business Hour of the following Business Day.
Relinquishment	means the cessation of a service.
Relinquishment Service Requests	means an order for the cessation of a service.
Residential Connection	means a Connection requested by a Service Provider in relation to an End User that is not a Business.

Term	Definition
SC/ACP	means Standard Connector / Angle Polished Connector to IEC 61754-4 conforming to Grade B insertion loss Grade 1 return loss performance as per IEC 61755-1.
SC Connector	means an SC Angle Polished Connector conforming to Grade B insertion loss Grade 1 return loss performance as per IEC 61755-1
Service Area	means either: (a) the area served by the fibre terminated at an LFC Central Office, or (b) the area within an LFC Central Office set aside for the Central Office and POI Co-location service.
Service Demarcation Point	Has the meaning given in the relevant Service Description as the context requires.
Service Identifier	means a unique alphanumeric identifier assigned by the LFC to a service.
Service Level	means a “Core Service Level” or “Ancillary Service Level” as those terms are defined in the Service Level Terms.
Service Level Default	means a failure by the LFC to meet a Service Level.
Service Order	means a Service Request accepted by the LFC in accordance with clause 4.4(b)(i) of the General Terms, and includes the Service Description, Service Level Terms, Operations Manual and Charges applicable to the Services to be provided by the LFC that are the subject of that Service Request;
Service Provider	means an entity that purchases the PONFAS Service from the LFC and, combined with its own network and services, provides a telecommunication service to an End User.
Service Provider Build	means the build work carried out by the Service Provider to complete the Co-location footprint requested by the Service Provider.
Service Rebate	means a “Core Service Rebate” as defined in the Service Level Terms.
Service Request	means a written or electronic request for the supply of a new Wholesale Service or Ancillary Service, or termination of an existing Wholesale Service or Ancillary Service provided by the LFC under this Agreement, issued by the Service Provider to the LFC in accordance with this Manual.
Service Request Month	means the calendar month in which a Forecast Service Request is forecast to become a Service Request.
Service Start Date	means the date that the LFC activates or otherwise makes available a Service ordered by the Service Provider.
Special Manual Pre-qualification Investigation	means the delivery of information on the availability of services at a given address following the visit to site by a technician (may include specially requested information).
Single Dwelling Unit or SDU	means premises containing within its boundaries only one residential or commercial occupancy, excluding any part of the land used to locate, or otherwise used to connect to, a NBAP.
Splitter	means the passive optical splitter that allows wavelengths from a single fibre to be split simultaneously across multiple fibres, which is the core technology that underpins point to multipoint Passive Optical Networks. The Splitter is housed in an FFP that is part of the PONFAS Feeder Service and connects that service to one or more associated PONFAS Distribution Services, typically up to 16.
SSP	means Self Service Portal – an OSS/BSS interface.
Standard Installation	means an installation of a service that is described as a Standard Installation in in clause 12.
Subsequent MDU Order	has the meaning given to that term in clause 1.2 (d) of Appendix 1 to the Service Level Terms;

Term	Definition
Tie Cables	means cable provided on request to a Service Provider who taken a fibre access service and or a Co-location footprint. Can be either: <ul style="list-style-type: none"> (a) An internal Tie Cable from the Central Office MOFDF to the Service Provider Footprint; (b) An internal Tie Cable from one Service Provider Footprint to another Service Provider Footprint (the footprints can be same or different Service Providers); or (c) An external Tie Cable from the Central Office MOFDF to a third party network outside and adjacent to the Central Office entry point.
Transfer Service Requests	means a Service Request by the Service Provider to transfer services of End Users between Service Providers as the result of customer acquisition as requested by the End User and submitted in accordance with the Fibre Customer Transfer Code.
Trouble ticket	means the record of a fault report detailing fault and steps taken to rectify.
Truck roll	means the dispatch of a technician to construct or repair the LFC network including end user infrastructure.
UFB Arrangements	means the arrangements between Northpower Fibre, Crown Fibre Holdings Ltd and the Crown relating the Government’s Ultrafast Broadband Initiative under which Northpower Fibre is required to construct, and deliver services over, a fibre optic access network in certain parts of New Zealand.
UFB1 Areas	means <ul style="list-style-type: none"> (i) the Candidate Areas listed in Appendix E as UFB1 Candidate Areas and identified in more detail on the LFC’s website at http://ccm.wialus.co.nz/; and (ii) any Greenfields developments adjacent to those UFB1 Candidate Areas.
UFB2 Areas	means <ul style="list-style-type: none"> (i) the Candidate Areas listed in Appendix E as UFB2 Candidate Areas and identified in more detail on the LFC’s website at http://ccm.wialus.co.nz/. (ii) any Greenfields developments adjacent to those UFB2 Candidate Areas.
UFB Services	means the Bitstream Services, Baseband, Passive Optical Network Fibre Access Services, Direct Fibre Access Services and the Central Office and POI Co-location Service.
UFB Periods	means in UFB 1 Areas, until 31 September 2019/2022; and in UFB2 Areas, until 1 January 2026.
Week	means a seven-day period commencing Monday and ending Sunday.
WSA	means the “Agreement” as defined in the General Terms.

APPENDIX B – ESCALATION PROTOCOL

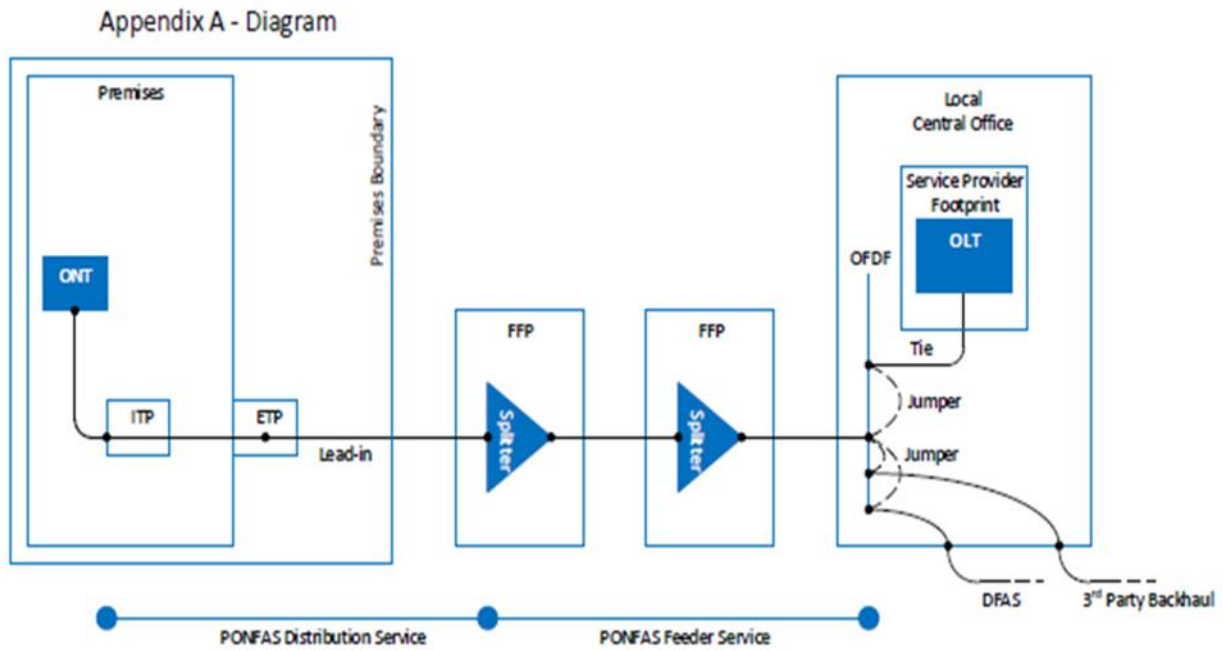
Rule No.	Escalation Rule	Further Explanation
1	Identify correct escalation path.	Before any issue is escalated, sufficient investigation should be undertaken to ensure that the functional group that will most likely be responsible for resolving the issue has been correctly identified.
2	Attempt to resolve issues at BAU level before escalating them.	Every effort should first be made to resolve an operational issue at the BAU level, i.e. direct communication between the originator and the recipient.
3	Escalation through Portal/B2B	In the first instance an escalation at BAU level should be handled through the LFC Customer Order Manager.
4	Second escalation should be via e-mail.	In the event that the Customer Order Manager escalation does not resolve the issue, an escalation at BAU level should be received via e-mail and clearly labelled as such with the email subject line beginning with 'ESCALATION'. The email should contain the relevant history of the issue, including the escalation history and when applicable the customer name, Service Identifier/circuit numbers and fault/Service Request or Service Order numbers.
5	Level One and Two escalations shall be peer to peer.	If an operational issue cannot be resolved at the BAU level it must first be raised by the team member with their own team leader/manager. If the team leader/manager agrees that the issue warrants being escalated to the other party they shall contact their peer in the other organisation and endeavour to resolve the issue between them - this would normally be the level one escalation point. Under no circumstance should this step in the escalation path be bypassed unless every reasonable attempt to communicate with their peer in the other organisation has failed. Only then should the level one contact in party A attempt to escalate the issue to the level two contact in party B. Subject to the above, level two escalations should also be peer to peer.
6	A mutually agreed plan of action to resolve an issue shall not be interfered with by other individuals.	If a plan of action to address an escalated issue has been agreed to by both parties then no other individual from either organisation should attempt to interfere with that agreement. If another individual has a concern with an already agreed plan of action they should raise it in the first instance with the person in their own organisation that was party to the original agreement.
7	People who do not follow the above rules will be redirected to the correct point of escalation.	If, as part of an escalation, an individual is contacted by a person from the other company and it is discovered that that person has not followed the protocol described above, then that individual can at their discretion respectfully redirect that person to the correct escalation contact person.

APPENDIX C – FORECASTING SPREADSHEET

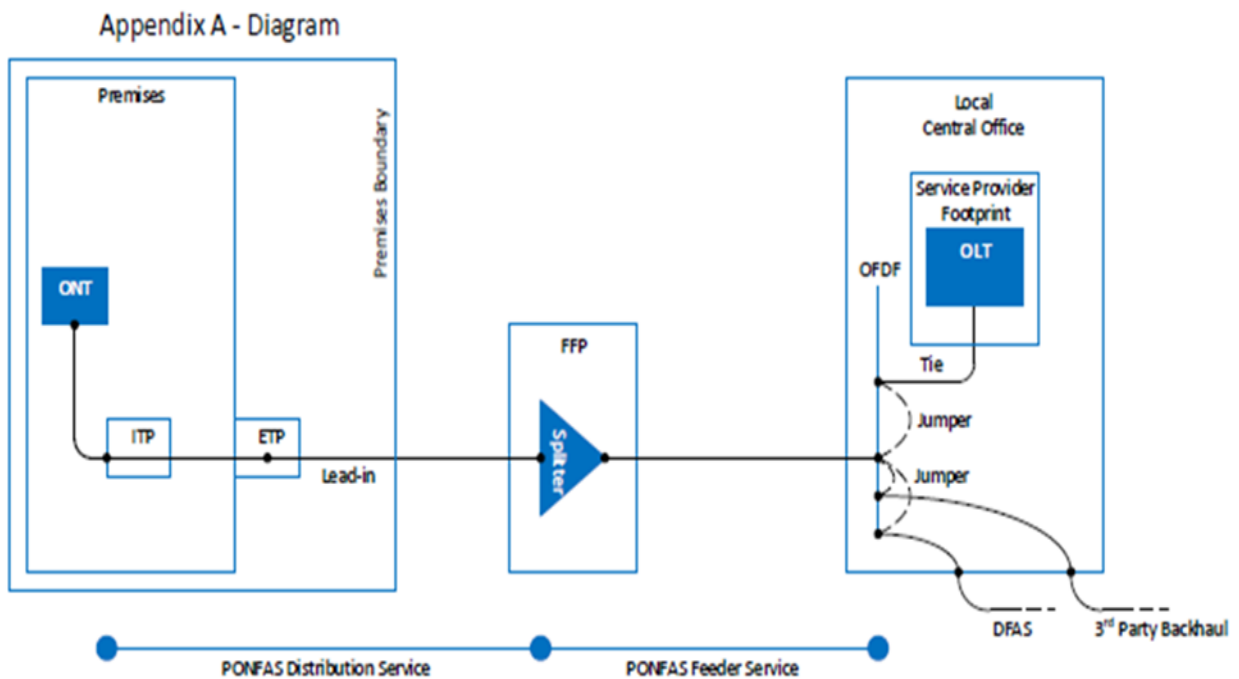
The forecasting spreadsheet is available online at: www.northpowerfibre.co.nz

APPENDIX D – PONFAS DIAGRAM

Overhead Architecture



Underground Architecture



This is a generic diagram showing the standard configuration and service demarcation points. It is not intended to represent every situation or detailed physical architecture.

The following points should be noted:

- The FFP may be underground, in a cabinet, in a pole closure or in a building frame;
- The PONFAS Distribution Service is connected directly to a port on the PONFAS Feeder Service Splitter, i.e. there is no OFDF within the FFP. This is an internal demarcation and is not accessible by Service Providers;
- Service Providers may not undertake fibre activity within the exchange, except within their own Service Provider Footprint that they have purchased as part of the Central Office and POI Co-location service.
- In MDUs where the LFC has provided Premises fibre cabling the termination point is described in the Operations Manual.

The diagram also shows the optional interconnection of the PONFAS Feeder Service and either a Direct Fibre Access Service, or a third party backhaul using an additional Jumpering Service.

APPENDIX E – PONFAS TECHNICAL SPECIFICATION

<p>Fibre</p>	<p>External fibre must comply with ITU-T specification G.652D or G.657A. Internal building fibre cables must meet appropriate fire regulations i.e. be Flame-Retardant, Non Corrosive, Low Smoke, Zero Halogen (FRNC/LSZH)</p>
<p>PONFAS Distribution Service Connector type</p>	<p>Fibre terminations must be SC/APC type connectors (complying with the IEC 61754-4 standard) or alternatively LC/APC also known as LCA type connectors (complying with the IEC 61754-20 standard) as appropriate.</p>
<p>PONFAS Feeder Service Connector Type</p>	<p>Fibre terminations must be SC/APC type connectors (complying with the IEC 61754-4 standard) or alternatively LC/APC also known as LCA type connectors (complying with the IEC 61754-20 standard) as appropriate.</p>
<p>Optic Path</p>	<p>Communal Network performance Total GPON Insertion Loss (ITU-T G984) = $\leq 28.5\text{db}$ Network Return Loss = $\geq 32\text{db}$ LFC GPON system margin (lifetime ageing factor) = 1.5db Total GPON insertion Loss OLT to ONT design target is = $\leq 27.0\text{db}$ (28.5db – 1.5db) Optical Fibre Attenuation Co-Efficient (L) (ITU-T G.652. & G657.A) = $\leq 0.4\text{db/km}$ Splice Loss (S) = $\leq 0.15\text{db}$ Mated Connector loss (C) = $\leq 0.3\text{db}$ Mated Connector Reflection = $\geq 55\text{db}$ Total Insertion Loss of network (IL) is calculated from $IL = 0.4L + 0.15S + 0.3C$ (excluding PON splitter) Splitter performance 1:32 = $\leq 17\text{db}$ 1:16 = $\leq 14\text{db}$ 1:8 = $\leq 11\text{db}$ 1:4 = $\leq 7.3\text{db}$ 1:2 = $\leq 4.0\text{db}$</p>
<p>Fibre Testing</p>	<p>All commissioning Layer 1 network testing (LFC site OFDF to end of Communal Network) is by OTDR at two wavelengths, 1310nm and 1550nm using Bi-Directional method in accordance with LFC standard described in ND0556. The methodology used will be based on bi-directionally testing all fibres in the Communal Network required to complete the service. Network test results are provided by agreement verifying performance features. Refer to the Direct Fibre Services Operations Manual for details. All Layer 1 network restoration testing will be LFC site OFDF to Premises termination point. Testing for power loss will be at either 1310 or 1550 nm. In the event of a fault restoration testing will be to the standard in Optical Performance table below. The wavelengths of 1625 nm and 1650nm are reserved for network maintenance testing purposes, (live GPON network) compliant with ITU-T L.41.</p>

APPENDIX F - LFC Contact Details

Northpower Fibre People and Contact Details

Northpower Fibre Control Centre for Fault reporting and after hour enquiries. Telephone 09 4301500	Responsible for receiving all Network fault reports and after hour enquiries.
Northpower Fibre Provisioning Manager Mala McRae Mala.McRAE@northpower.com Private Bag 9018, Whangarei Mail Centre Whangarei, 0110 Telephone 09 983 2246	Responsible for the provisioning of the Bitstream and PONFAS Access Service to the Service Provider.
LFC Email address for submission of Forecasting Jason.wickliffe@northpower.com	
Northpower Fibre CEO Darren Mason darren.mason@northpower.com Private Bag 9018, Whangarei Mail Centre Whangarei, 0110 Mobile 027 448 4485	Responsible for the overall delivery of the Fibre Access Network within the Whangarei Candidate Area.
Northpower Fibre Service Delivery Manager Greg Tucker greg.tucker@northpower.com Private Bag 9018, Whangarei Mail Centre Whangarei, 0110 Mobile 029 770 5759	Responsible for the service delivery of the PONFAS Access Service to the Service Provider.
Northpower Fibre Layer 1 Fibre Build Manager Tony Hales tony.hales@northpower.com Private Bag 9018, Whangarei Mail Centre Whangarei, 0110 Mobile 027 4301016 Telephone 0 9 4301504, Extn 5654	Responsible for the Layer 1 build within the Whangarei Candidate Area.
Northpower Fibre Layer 1 Design, Senior Designer Fibre Chris McIntosh chris.mcIntosh@northpower.com Private Bag 9018, Whangarei Mail Centre Whangarei, 0110 Mobile 027 475 9713 Telephone 09 430 1860, Extn 5863	Responsible for the Layer 1 design within the Whangarei Candidate Area.
Northpower Fibre Billing Administrator Cheryll Pitman cheryll.pitman@northpower.com Telephone 09 430 1920, Extn 5577	Responsible for all retailer billing.

APPENDIX G – CANDIDATE AREAS

UFB 1 Area

Zone	POI and CO	Address
1	Whangarei Central	Alexandra Street

Zone	Central Office	Address
2	Tikipunga	Waiatawa Road
3	Kamo	Hiko Road
4	Morningside	Mt Pleasant Road
5	Onerahi	Cartwright Road

UFB 2 Area

Zone	Central Office	Address
6	Hikurangi	Hill Street
7	Waipu	Nova Scotia Drive
8	One Tree Point 1	Stace Hopper Drive
9	One Tree Point 2	One Tree Point Road
10	Dargaville West	Station Road
11	Ruakaka	Peter Snell Road
12	Mangawhai Village	Dune view Drive
13	Dargaville East	Gordon Street
14	Mangawhai Heads Sth	Sea Breeze Road
15	Mangawhai Heads Nth	Cullen Street
16	Kaiwaka	Kaiwaka, Mangawhai Rd
17	Maungaturoto	Hurdall Street East
18	Ruawai	Bledisloe Street
19	Paparoa	Paparoa Valley Road