



Ultrafast Fibre Input Services Wholesale Services Agreement

Service Description for Input Central Office and
POI Co-location Service

1 Interpretation

- 1.1 The Input Central Office and POI Co-location Service (**iCoLo**) described in this Service Description will be available from 1 January 2020.
- 1.2 References to clauses or sections are references to clauses or sections in this Service Description unless expressly provided otherwise. The definitions set out in the Input Services Wholesale Services Agreement General Terms (**General Terms**) and the Operations Manual apply to this Service Description unless expressly provided otherwise.
- 1.3 References to the Operations Manual are references to the operations manual for the Input Central Office and POI Co-location Service.

2 General Terms

- 2.1 The General Terms in this Agreement apply to provision of iCoLo subject to any modifications, exclusions and clarifications:
 - 2.1.1 set out in clause 2.2 below; and
 - 2.1.2 that are necessary to ensure the General Terms are appropriate to the provision of iCoLo as notified by the LFC.
- 2.2 The iCoLo:
 - 2.2.1 is not a Base Wholesale Service as defined in clause 1.3 of the LFC's UFB Wholesale Services Agreement General Terms;
 - 2.2.2 is not subject to a UFB Price Cap; and
 - 2.2.3 changes to iCoLo Charges and iCoLo Ancillary Charges may be made by the LFC on written notice to Access Seekers in accordance with the General Terms.
- 2.3 This Service Description and the iCoLo Operations Manual and iCoLo Service Level Terms may be changed by the LFC using the process for Agreement Changes set out in the General Terms.

3 The Input Central Office and POI Co-location Service

- 3.1 The iCoLo is a service (and its associated functions, including the associated functions of the LFC's operational support systems) that provides co-location facilities for an Access Seeker's equipment at the LFC's relevant Central Office solely for the purposes of providing access to, and interconnection with, the LFC Layer 1 Input Services Network (including any necessary supporting equipment) for the purposes of using UFB Services, PON Fibre Access Services (**PONFAS**) and Input Direct Fibre Access Services (**iDFAS**).
- 3.2 The iCoLo is also available to third party backhaul providers for the purpose of providing backhaul to an Access Seeker for UFB Services, PONFAS and iDFAS.
- 3.3 A diagram of the configuration for the iCoLo is set out in Appendix A. The iCoLo includes access to and the use of, space in the LFC's relevant Central Office for the purposes of installing and maintaining Access Seeker equipment. The technical specification of the iCoLo is set out in Appendix B.
- 3.4 The iCoLo is an input service which an Access Seeker can use as a building block to combine with interconnection and backhaul for the PONFAS, iDFAS, Direct Fibre Access Service and Bitstream Services offered by the LFC (or with the Access Seeker's own network or wholesale services provided by other providers).

4 Input Central Office and POI Co-location Service Provisioning and Implementation Activities

Access Seeker's equipment

- 4.1 “**Access Seeker's equipment**”, for the purposes of this Service Description, includes:
- 4.1.1 the Access Seeker's equipment used for providing access to, and interconnection with, the UFB Services, PONFAS and iDFAS offered by the LFC;
 - 4.1.2 the equipment of any person other than the Access Seeker if that equipment is being used to support the provision of backhaul or interconnection for the Access Seeker; and
 - 4.1.3 all equipment being used by a Reseller to connect to the LFC Network.
- 4.2 The process for auditing the Access Seeker's equipment is set out in the Operations Manual.

Provisioning of Input Central Office and POI Co-location Service

- 4.3 The iCoLo includes a Standard Install. The following installation works, when completed, will constitute a Standard Install of a Footprint:
- 4.3.1 allocation of space to the Access Seeker for a Footprint(s) at the relevant LFC Central Office for the installation of their equipment;
 - 4.3.2 provision of power, earthing, air-conditioning and other associated services to support Access Seeker equipment; and
 - 4.3.3 construction of cable racks and trays, seismic bracing, and other associated infrastructure required to support Access Seeker equipment.

Provisioning of Tie Cables

- 4.4 The Tie Cables provided under this iCoLo are solely for the purpose of providing UFB Services, PONFAS and iDFAS. The iCoLo includes the following provisioning activities for Tie Cables:
- 4.4.1 identification of the route that Tie Cables will take between the Access Seeker's Footprint and the OFDF or between the Access Seeker's Footprints;
 - 4.4.2 identification of the route that third party backhaul cables will take within the LFC Central Office, LFC ducts and the LFC Central Office Entry Points, between the Access Seeker's Footprint(s) and the Access Seeker's or a third party's fibre network cable outside and adjacent to the LFC's Central Office Entry Point;
 - 4.4.3 installation of any required cable racks and trays, seismic bracing and other associated infrastructure required to support Tie Cables and third party backhaul cables;
 - 4.4.4 provisioning of Tie Cables including SC Connectors or LC Connectors or fibre splices, from the OFDF to the Access Seeker's Footprint (note the cable may be supplied either by the LFC or the Access Seeker, but must meet the relevant fibre specification);
 - 4.4.5 installation and termination of Tie Cables between the Access Seeker's Footprint and the OFDF; and
 - 4.4.6 installation of third party backhaul cables between the Access Seeker's Footprint and the Central Office Entry Point.

Priority of Build and Space allocation

- 4.5 Space will be built according to the priority process in the Operations Manual.
- 4.6 If there is a shortage of space and unbundling of the LFC's Layer-1 Network has occurred, the LFC will give priority to Access Seekers interconnecting with PONFAS and iDFAS.

Testing

- 4.7 The LFC will test:
- 4.7.1 the Tie Cables from the OFDF to the Access Seeker Footprint at the LFC's relevant Central

Office in each case to ensure the power loss figures are within the technical specification for fibre in Appendix B; and

4.7.2 the co-location build at the LFC Central Office.

Additional Services

- 4.8 If the Access Seeker requires additional services beyond those described above, such as installation and testing of Access Seeker's equipment and services, then LFC may elect to provide these on request subject to terms to be agreed between the LFC and the Access Seeker.

Access Service Requirements

- 4.9 To use the iCoLo the Access Seeker must be receiving from the LFC at least one instance of the iDFAS or PONFAS Feeder Service where the access fibre terminates at the relevant LFC Central Office. Providers of backhaul to Access Seekers must consume a Central Office and POI Co-location Service to support this activity.

Additional Service Characteristics

- 4.10 The iCoLo is restricted to the allocated Footprint in the LFC Central Office.
- 4.11 The iCoLo includes controlled access for accredited personnel to support Access Seeker equipment.
- 4.12 The LFC will provide certain support and other assistance as part of the iCoLo including:
- 4.12.1 an electronic facility for Service Requests; and
 - 4.12.2 an electronic facility for fault notifications.
- 4.13 The iCoLo specifically excludes:
- 4.13.1 access to, and the use of, space in, on, or around any location apart from the allocated Footprint in the LFC's relevant Central Office for any purpose apart from those set out in clause 3.3;
 - 4.13.2 housing Access Seeker equipment that is not for the purpose of providing access to, and interconnection with, the UFB Services, PONFAS and iDFAS and approved by the LFC in accordance with the Operations Manual;
 - 4.13.3 unconditional rights of access to any LFC Central Office;
 - 4.13.4 configuration, monitoring, operation, on-going support or maintenance of Access Seekers' or End Users' applications, equipment or networks; and
 - 4.13.5 configuration or on-going support of any Access Seeker's or End User's applications.

5 Input Central Office and POI Co-location Configuration

- 5.1 A summary of the co-location configuration is set out below. It is subject to the full configuration details appearing in the Operations Manual.

Definitions

- 5.2 The co-location configurations which may be used to deliver the iCoLo in the Service Area at an LFC Central Office can be defined as follows:
- 5.2.1 co-mingled Footprints (the default configuration): where Footprints are inter-mixed directly with each other within a shared row (the Access Seeker's Footprints may also be inter-mixed with the LFC's or other Access Seekers' racks or cabinets). Rows will not necessarily be sequentially filled and gaps may be left between Access Seeker Footprints and the LFC's or other Access Seekers' footprints, racks or cabinets for growth. However, if space restrictions prevent this approach then rows may be filled sequentially;
 - 5.2.2 co-mingled rows: the Access Seeker is allocated an entire row of Footprints. However, the LFC will only offer co-mingled rows where it assesses there is sufficient space at the LFC's relevant Central Office; and

5.2.3 T500 Roadside Cabinet: a tie cable can be provided by the LFC to an adjacent Access Seeker cabinet or limited rack space can be provided, details of which will be provided on request.

5.3 The Tie Cable configurations which may be used with the iCoLo in the Service Area at an LFC Central Office are as follows:

5.3.1 Footprint to OFDF;

5.3.2 Footprint to third party backhaul provider's equipment; and

5.3.3 between the Access Seeker's Footprints within the Service Area.

6 Service Boundaries

6.1 The iCoLo is primarily confined to the Access Seeker's Footprint.

7 Components of the Input Central Office and POI Co-location Service and associated charges

7.1 For detailed information on the components of the iCoLo and associated charges see the Operations Manual and the Input Services Price List.

8 Tie Cable Connection

8.1 All PONFAS, iDFAS, Direct Fibre Access Services and third party backhaul provider service circuits, and all Bitstream Services together with the requisite UFB Handover Connection Services, will terminate at the OFDF and will be extended by a Tie Cable to an SC Connector or LC Connector or fibre splice at the Access Seeker's Footprint. Details of these services can be found in their respective Service Descriptions.

8.2 Installation of Tie Cables between third party backhaul provider equipment and the Access Seeker's Footprint is detailed in the Operations Manual and will be as follows:

8.2.1 for LFC supplied cable, the cable will be delivered to the Access Seeker outside and adjacent to the relevant Central Office Entry Point; and

8.2.2 for Access Seeker supplied cable, the cable, of length advised by the LFC, will be received at the relevant Central Office Entry Point.

8.3 Tie Cables are also available between Access Seekers' Footprints within the Service Area. The Access Seeker may only run its own Tie Cables between its own Footprints when the two Footprints are adjacent.

9 Access Seeker Responsibilities

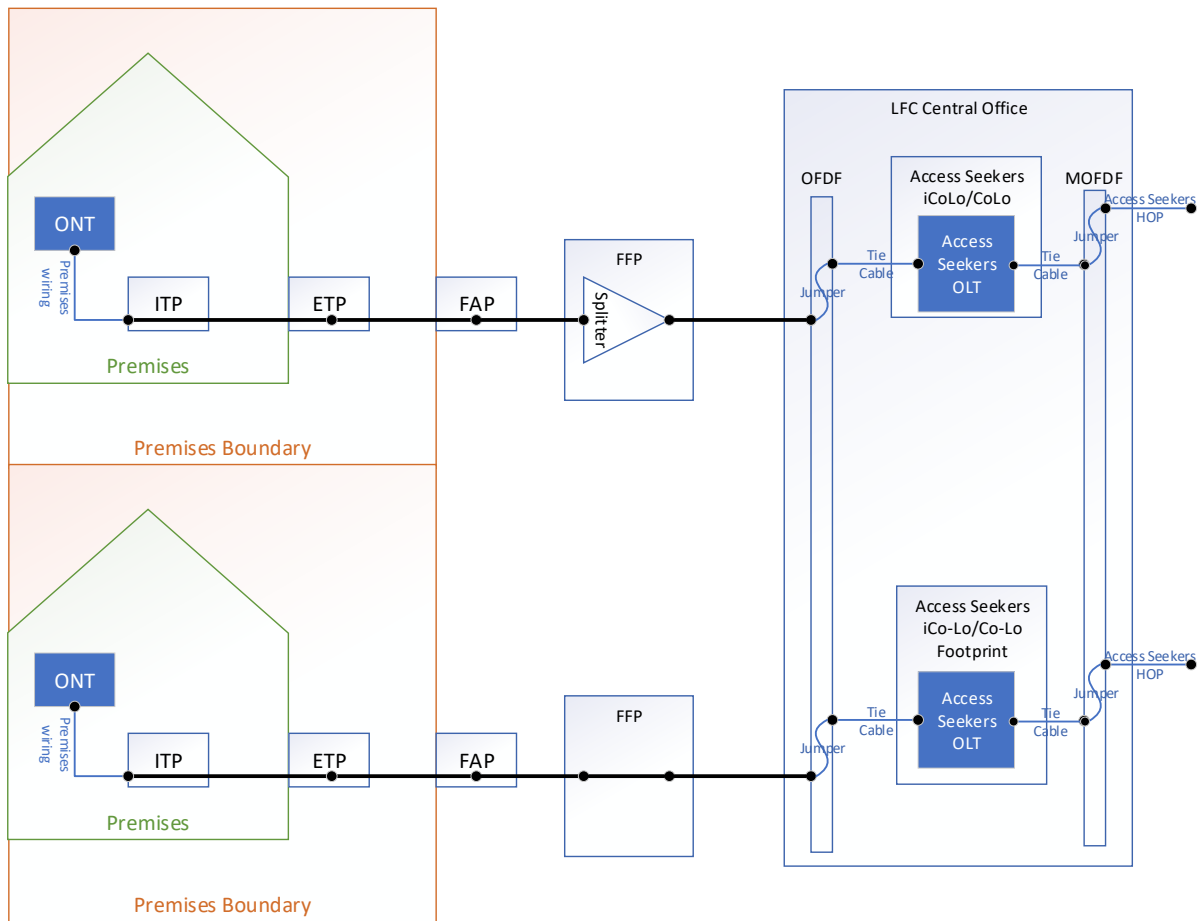
9.1 The Access Seeker will be responsible for all of the design, specification and commissioning of their equipment and plant (both active and passive).

9.2 Other Access Seeker responsibilities are detailed in the General Terms and the Operations Manual.

10 Service Levels

10.1 Service Levels for the iCoLo are set out in the Service Level Terms for the Input Central Office and POI Co-location Service.

Appendix A – Diagram



Access Fibre Service Tie Cable options

The following Tie Cable options are available for the iCoLo:

- A. the Tie Cable from the Central Office OFDF to the Access Seeker's Footprint (note these cables are supplied by the LFC and remain the responsibility of the LFC);
- B. the Tie Cable from the Access Seeker's Footprint via the relevant Central Office OFDF and relevant Central Office Manhole to third party backhaul provider network (note these cables may be supplied either by the LFC or the Access Seeker but remain the responsibility of the backhaul provider as part of their backhaul service); and
- C. the Tie Cable between two of the Access Seeker's Footprints (note these cables may be supplied either by the LFC or the Access Seeker but remain the responsibility of the Access Seeker).

Appendix B – Technical Specification

1.1 The parameters of the iCoLo are defined for the space and associated services at the LFC's relevant Central Office. Service Areas will provide a working environment broadly equivalent to that provided for telecommunications equipment, not data centre equipment, and will include the parameters listed for all types of iCoLo (unless otherwise provided):

- 1.1.1 Space: Footprints in a Central Office will have a minimum size of 600 x 400 mm and have a minimum height that will accommodate a 2,200 mm ETSI rack (availability of larger Footprints will be dependent on site).

T500 Roadside Cabinet: a tie cable can be provided by the LFC to an adjacent Access Seeker cabinet or limited rack space can be provided. Details of which will be provided on request
- 1.1.2 Power: The default power source supplied to the Access Seeker will be -48V DC power with additional back-up capability provided by the LFC; however there may still be single points of failure i.e. single rectifiers or single engine alternators. The Access Seeker's may request as a commercial service additional back-up capability for the DC power provided by the LFC at sites where it is available. As an option, 230 volt 50Hz Ac power may be provided. Power may be charged in specified current steps as a fixed fee or the LFC may wish to offer metered¹ 48V DC or 230 V AC power as an option.
- 1.1.3 Thermal Service Areas will be designed to keep the air temperature within
- 1.1.4 Management: a range from 15 to 35°C. The normal operating standard is 22 to 26°C. Humidity will not necessarily be controlled in Service Areas. Humidity alarms, where installed, are set at 35% (low) and 70% (high). The maximum thermal load per 600 x 400 mm Footprint will be 6 kw.
- 1.1.5 Light: Target operating standard is approximately 500 lux measured at a height of 600 mm off the floor with a minimum level of 200 lux by way of suspended or ceiling-mounted light fittings.
- 1.1.6 Access: Controlled 24 x 7 access with centralised monitoring and logging. Individual identification cards are required with imbedded photo ID.
- 1.1.7 Fire Protection: The Central Office will have fire detection systems installed and may have a fire suppression system also installed. The fire suppression method will vary between locations. Further details of the fire rating are in the operations manual but design of all sites must comply with AS/NZ 1905 and meet

¹ If metered, it may be necessary for LFC to get clearance from the Commerce Commission under EIRA.

AS 1530 on completion.

- 1.1.8 Flooring: The floor shall have anti-static properties in accordance with IEC 61000-4-2.
- 1.1.9 Floor Loading: The floor loading within the Footprint shall not exceed those specified in the operational manual and comply with NZS 1170.
- 1.1.10 Tie Cable Tie Cables will conform to ITU-T G.652 D, internal access cables
- 1.1.11 Specification: may conform to ITU-T G657.A which is resilient to bending. The use of the latter will not be mandatory, but cable must meet appropriate fire regulations. A wavelength of 1625 nm will be reserved for test purposes.
- 1.1.12 Seismic Design: The design of the Central Office, its infrastructure and the Access Seeker's racks shall comply with NZS 4203 seismic standard and its successors.