

## **Standard Terms Determination for Chorus’ Unbundled Copper Low Frequency Network Backhaul (Telephone Exchange to Interconnect Point) Service**

Being a standard terms determination that applies to the service described in subpart 1 of Part 2 of Schedule 1 of the Telecommunications Act 2001 as Chorus’s unbundled copper local loop network backhaul (telephone exchange to interconnect point), as supplied for the purposes of providing access to and interconnection with Chorus’ unbundled copper low frequency service

### **Schedule 1: UCLF Backhaul Service Description**

**Date of determination:** 27 June 2008

Updated to incorporate Commerce Commission decisions, amendments, and clarifications through to 15 December 2019

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## 1. Definitions

### 1.1 Except where expressly provided otherwise:

<b>Access Seekers' POP</b>	means the Access Seeker's Point of Presence.
<b>ASNAPOI</b>	means the Access Seeker's nearest available point of interconnection (as defined in 3.8) that is located at a POI Site and is the point at which the Access Seeker is interconnected with Chorus' Network.
<b>ASNAPOI Handover Point</b>	means the Access Seeker side of the OFDF in the ASNAPOI.
<b>Conditions</b>	Chorus faces limited, or is likely to face lessened, competition in the markets for transmission capacity between the Local Exchange and the ASNAPOI as set out in subpart 1 of Part 2 of Schedule 1 of the Act in relation to the UCLF Backhaul Service.
<b>ETP</b>	means the external termination point for telecommunications services at an End User's premises or, where there is no termination point external to the premises, either the first jack on the premises wiring, or, alternatively, the building distribution frame.
<b>Footprint</b>	means a space in, on or around any Local Exchange that is allocated to the Access Seeker for the installation of the Access Seeker Equipment but excludes any space occupied by the UCLF Backhaul Connection.
<b>Handover Fibre</b>	means the Handover Fibre that provides physical interconnection with the Access Seeker's Network.
<b>Link</b>	means a Primary Link and/or a Secondary Link.
<b>Local Exchange</b>	means the Exchange at which the Access Seeker is being supplied with, or may potentially be supplied with, the UCLFS Service.
<b>Local Exchange Handover Point</b>	means the Access Seeker side of the OFDF in the Local Exchange in which the Access Seeker Equipment is either co-located or is remotely located.
<b>OFDF</b>	means Chorus' Optical Fibre Distribution Frame.
<b>Parent POI Site</b>	means, in relation to a Local Exchange, the POI Site to which that Local Exchange is connected for the purposes of routing the UCLF Backhaul Service. For the avoidance of doubt, the Parent POI Site may sometimes be the same as the ASNAPOI.
<b>POI Site</b>	means a point in Chorus' Network at which the Access Seeker may interconnect for the purposes Of the UCLF Backhaul Service.
<b>Primary Link</b>	means that part of the UCLF Backhaul Service between the Local Exchange Handover Point and the Parent POI Site.
<b>Secondary Link</b>	means that part of the UCLF Backhaul Service between the Parent POI Site and the ASNAPOI Handover Point.

<b>UBA Service</b>	means Chorus' unbundled bitstream service supplied by Chorus pursuant to the standard terms determination dated 12 December 2007 (Commission Decision 611).
<b>UBA Service FDS</b>	means the UBA Service first data switch (or equivalent facility) in Chorus' Network where the Access Seeker is being supplied with, or may potentially be supplied with, the UBA Service pursuant to the standard terms determination dated 12 December 2007 (Commission Decision 611).
<b>UCLF Backhaul Connection</b>	means a tie cable from the Access Seeker's Footprint to the Local Exchange Handover Point or the ASNAPOI Handover Point.
<b>UCLF Co-location Service</b>	means the unbundled copper low frequency network co-location service supplied by Chorus pursuant to the standard terms determination dated 7 November 2007 (Commission Decision 610).

## 2. Introduction

- 2.1 This UCLF Backhaul Service Description is part of the UCLF Backhaul Terms, which set out the rights and obligations of Chorus and Access Seekers in relation to Chorus' unbundled copper low frequency network backhaul (telephone exchange to interconnect point).
- 2.2 References to clauses or sections are references to clauses and sections in this UCLF Backhaul Service Description unless expressly provided otherwise. Clause 1.1 sets out definitions for terms contained in this UCLF Backhaul Service Description that are not defined in the UCLF Backhaul General Terms. Otherwise, the definitions set out in the UCLF Backhaul General Terms apply.

### Background to Market Analysis

- 2.3 The UCLF Backhaul Service is a service (and its associated functions, including the associated functions of Chorus' operational support systems) that provides transmission capacity in Chorus' Network (whether the transmission capacity is copper, fibre, or anything else) between the Local Exchange Handover Point and the ASNAPOI Handover Point.
- 2.4 The UCLF Backhaul Service is for the purpose of providing access to, and interconnection with the UCLF Service. Transmission capacity is provided as an Ethernet connection. A diagram of the UCLF Backhaul Service is attached as Appendix A and a specification of the transmission capacity is set out in Appendix B.
- 2.5 The UCLF Backhaul Service is only available in the markets for transmission capacity where the Conditions apply.
- 2.6 In considering the Conditions, the Commission determined that the markets for transmission capacity in which the UCLF Backhaul Service are supplied are:
- 2.6.1 the wholesale markets for transmission capacity between each Local Exchange Handover Point and each ASNAPOI Handover Point of the UCLF Backhaul Service; and
  - 2.6.2 the wholesale markets for transmission capacity between each Parent POI Site and each ASNAPOI Handover Point of the UCLF Backhaul Service.

The Commission applied the Conditions to some Primary Links and all Secondary Links.

- 2.7 Chorus is not required to supply the UCLF Backhaul Service on Links that would otherwise be Primary Links or Secondary Links:
- 2.7.1 where the Commission has determined that the Conditions do not apply; and
  - 2.7.2 where the Commission has not applied the Conditions.

### **3. The UCLF Backhaul Service**

- 3.1 The UCLF Backhaul Service is solely available on those:
- 3.1.1 Primary Links described in the table of Primary Links in Schedule 5 to the UCLF Backhaul Terms; and
  - 3.1.2 Secondary Links shown as available in the diagram of Secondary Links in Schedule 5 to the UCLF Backhaul Terms.
- 3.2 For the avoidance of doubt:
- 3.2.1 the Secondary Link remains available (where clause 3.1.2 applies) even if there is no available Primary Link;
  - 3.2.2 the Primary Link remains available (where clause 3.1.1 applies) even if there is no available Secondary Link;
  - 3.2.3 where a Secondary Link includes one or more POI Sites between the Parent POI Site and the ASNAPOI, the Secondary Link is only available where clause 3.1.2 applies. In those circumstances, the Access Seeker must establish a suitable ASNAPOI in accordance with clause 3.8 to access the available Secondary Link;
  - 3.2.4 the Access Seeker may purchase more than one Secondary Link (where clause 3.1.2 applies) between the same POI Site and the same ASNAPOI to obtain access to sufficient transmission capacity; and
  - 3.2.5 Appendix C sets out some specific examples explaining the extent to which the UBA UCLF Backhaul Service is available. These examples have no limiting effect.

#### **Handover Points**

- 3.3 The handover points for the UCLF Backhaul Service comprise the Local Exchange Handover Point and the ASNAPOI Handover Point.

#### **Primary Links and Secondary Links**

- 3.4 Subject always to clause 3.1, the UCLF Backhaul Service from the Local Exchange Handover Point may comprise a Primary Link only, a Primary Link and a Secondary Link, or a Secondary Link only depending on the location of the Local Exchange and the ASNAPOI as follows:
- 3.4.1 where the Local Exchange is not a POI Site and the Parent POI Site in relation to that Local Exchange is not an ASNAPOI, the UCLF Backhaul Service will consist of a Primary Link and a Secondary Link;
  - 3.4.2 where the Local Exchange is not a POI Site and the Parent POI Site in relation to that Local Exchange is an ASNAPOI, the UCLF Backhaul Service will consist solely of a Primary Link;

- 3.4.3 where the Local Exchange is a Parent POI Site and that POI Site is not an ASNAPOI, the UCLF Backhaul Service will consist solely of a Secondary Link; and
- 3.4.4 where the Local Exchange is a POI Site and that POI Site is an ASNAPOI, the UCLF Backhaul Service is not required and available in relation to that Local Exchange.

### **POI Sites**

- 3.5 The UCLF Backhaul Service includes a number of POI Sites in Chorus' Network. The UCLF Backhaul Service for a Local Exchange is routed through the Parent POI Site for that Local Exchange.
- 3.6 Chorus may from time to time as its Network evolves, add, delete or move POI Sites and will provide the Access Seeker and the Commission with notice of any changes to the POI Sites in accordance with the UCLF Backhaul Operations Manual. The list of POI Sites, Parent POI Sites and their associated Local Exchanges is set out in Schedule 5 to the UCLF Backhaul General Terms. This list must be made available to Access Seekers via a secure Chorus web portal and must be regularly updated by Chorus where required.
- 3.7 If requested by the Access Seeker, Chorus may designate any of its UBA Service FDSs as a new POI Site. Where Chorus designates a new POI Site, Chorus must provide the Access Seeker with notice of the change in accordance with the UCLF Backhaul Operations Manual. The Access Seeker may then establish an ASNAPOI at that new POI Site in accordance with clause 3.8.

### **ASNAPOIs**

- 3.8 A POI Site is an ASNAPOI in respect of a Local Exchange for an Access Seeker if the requirements of 3.8.1 and 3.8.2 are satisfied:
  - 3.8.1 the POI Site is an available point of interconnection (as set out in clause 3.9);
  - 3.8.2 the POI Site is the nearest, as measured by Chorus' network path, of the available points of interconnection (as set out in clause 3.9) to the Local Exchange;

For the purposes of clause 3.8.2, a list of the distances in Chorus' network path between POI Sites is available to Access Seekers via a secure Chorus web portal and must be regularly updated by Chorus where required. For the avoidance of doubt, the Parent POI Site for a Local Exchange is the nearest POI Site to that Local Exchange as measured by Chorus' network path. Therefore, subject to clause 3.8.2, if the Parent POI Site for a Local Exchange is an available point of interconnection, the Parent POI Site is the ASNAPOI in respect of that Local Exchange.

- 3.9 A POI Site is an available point of interconnection for an Access Seeker if one of the following holds:

- 3.9.1 the Access Seeker is physically interconnected using the Access Seeker's own equipment with Chorus' Network at that POI Site; or
  - 3.9.2 the Access Seeker has an agreement with a UCLF backhaul provider (whether Chorus or a third party provider) allowing interconnection at that POI Site back to the Access Seeker's Network.
- 3.10 The Access Seeker must establish an ASNAPOI at a minimum of one POI Site, but may establish an ASNAPOI at more than one POI Site. For the avoidance of doubt, the Access Seeker may be required to establish more than one ASNAPOI in order to receive access to any Link of the UCLF Backhaul Service.
- 3.11** The Access Seeker may, from time to time as its Network evolves, add, delete or move an ASNAPOI. The Access Seeker must provide Chorus with a forecast of any change to its ASNAPOI Handover Point and Local Exchange Handover Point for the UCLF Backhaul Service in accordance with the UCLF Backhaul Operations Manual.

#### **4. Connection requirements**

- 4.1 The Access Seeker, or a third party on behalf of the Access Seeker, must be able to access the UCLF Backhaul Service from Chorus at the Local Exchange and the ASNAPOI by using a Handover Fibre and, where required, a UCLF Backhaul Connection.
- 4.2 Where the Access Seeker, or a third party on behalf of the Access Seeker, is remotely co-located at the Local Exchange, the Access Seeker does not require a UCLF Backhaul Connection but must use the Handover Fibre.
- 4.3 Either the Access Seeker or Chorus must supply the UCLF Backhaul Connection and the Handover Fibre. Chorus is required to install and interconnect the UCLF Backhaul Connection and the Handover Fibre for the purposes of the UCLF Backhaul Service.
- 4.4 For the avoidance of doubt, an Access Seeker may use Handover Fibre already installed for another Chorus-supplied Service for the purpose of using the UCLF Backhaul Service.
- 4.5 Prior to provision of the UCLF Backhaul Service, the Access Seeker must advise Chorus of the location of its ASNAPOIs and the interconnection arrangements for each ASNAPOI.
- 4.6 Chorus must provide point-to-point transmission capacity between each Local Exchange at which the Access Seeker requires the UCLF Backhaul Service and the ASNAPOI.
- 4.7 The Access Seeker may co-locate its UCLF Backhaul Service equipment at the Local Exchange using the UCLF Co-location Service. This equipment includes the equipment of any person other than the Access Seeker if that equipment is being used to support the provision of UCLF backhaul for the Access Seeker.

- 4.8 The UCLF Backhaul Service must be used by the Access Seeker for supplying transmission capacity for the purposes of providing access to, and interconnection with the UCLF Service.
- 4.9 Subject to clause 4.8, there is no restriction on the type of end-user service or application carried over the UCLF Backhaul Service by the Access Seeker provided that the end-user service or application uses the or the UCLF Service, as appropriate.
- 4.10 The Access Seeker may combine the UCLF Service, and the UCLF Co-location Service with the UCLF Backhaul Service (or with the Access Seeker's own network or wholesale services provided by other providers) to deliver services to End Users.
- 4.11 The UCLF Backhaul Service is not available for direct resale to End Users. However, the UCLF Backhaul Service may be resold to other Access Seekers solely for transmission capacity for the purposes of providing access to, and interconnection with, the Service. For the avoidance of doubt, this clause is not intended to prevent the Access Seeker from reselling the end-to-end Service to other Access Seekers.

## **5. Transmission capacity**

- 5.1 The UCLF Backhaul Service provides transmission capacity at 100Mbit/s or 1Gbit/s. It is the responsibility of the Access Seeker to purchase sufficient capacity and to manage and dimension its UCLF Backhaul Service to achieve its service specifications.

## **6. Capacity/geographic availability**

- 6.1 Chorus must provide the UCLF Backhaul Service in accordance with standard access principles (including standard access principle 3) in subpart 1 of Part 1 of Schedule 1 of the Act. Without limiting the foregoing, when there is limited capacity between the Local Exchange Handover Point and the ASNAPOI Handover Point Chorus must not discriminate between a request for transmission capacity from an Access Seeker and any request for transmission capacity from a division of Chorus.

## **7. Components of the service and associated charges**

- 7.1 The service components of the UCLF Backhaul Service and associated prices are set out in the UCLF Backhaul Price List.

## **8. Service levels**

- 8.1 The applicable service levels are set out in the UCLF Backhaul Service Level Terms.

## **9. Notification of New Unbundled Local Exchanges**

- 9.1 On and from the date that the Standard Terms Determination comes into effect, Chorus must notify the Commission of the names and locations of all Local Exchanges at which Chorus is:

- 9.1.1 supplying the UCLF Service (or an equivalent commercial service) to any Access Seeker; and

- 9.1.2 proposing to make available for supply the UCLF Service (or an equivalent commercial service) to any Access Seeker within the twelve month period from the due date of the information under clause 9.2.
- 9.2 Chorus must provide the information to the Commission under clauses 9.1.1 and 9.1.2 on the last Working Day of each quarter to enable the UCLF Backhaul STD to remain aligned with the availability of the UCLF Service, where possible.

## Appendix A –UCLF Backhaul Service

The UCLF Backhaul Service is illustrated in the diagrams below.

### Key for diagrams A, B and C

- Black lines between the end user and OFDF in the Local Exchange illustrate the traffic flow between UCLF and UCLF Backhaul where the Access Seeker is co-located within the Local Exchange.
- Blue lines between the end user and OFDF in the Local Exchange illustrate the traffic flow between UCLF and UCLF Backhaul where the Access Seeker is remotely co-located outside the Local Exchange.
- Black lines between the OFDF in the ASNAPOI and the Access Seekers' POP illustrate the traffic flow between UCLF Backhaul and the Access Seekers' Network where the Access Seeker is co-located within the ASNAPOI.
- Blue lines between the OFDF in the ASNAPOI and the Access Seekers' POP illustrate the traffic flow between UCLF Backhaul and the Access Seekers' Network where the Access Seeker is not co-located within the ASNAPOI.
- M = manhole.
- In relation to that part of the above diagram that is governed by the the UCLF Service and the UCLF Co-location Service, a more detailed diagram relating to each the UCLF Service and the UCLF Co-Location Service is found in the corresponding standard terms determination.<sup>1</sup>

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<sup>1</sup> Commerce Commission, *Decision No. 609: Standard Terms Determination for the designated service Chorus' unbundled copper local loop network*, 7 November 2007, p 23.

**Diagram A: Primary Link and Secondary Link required**

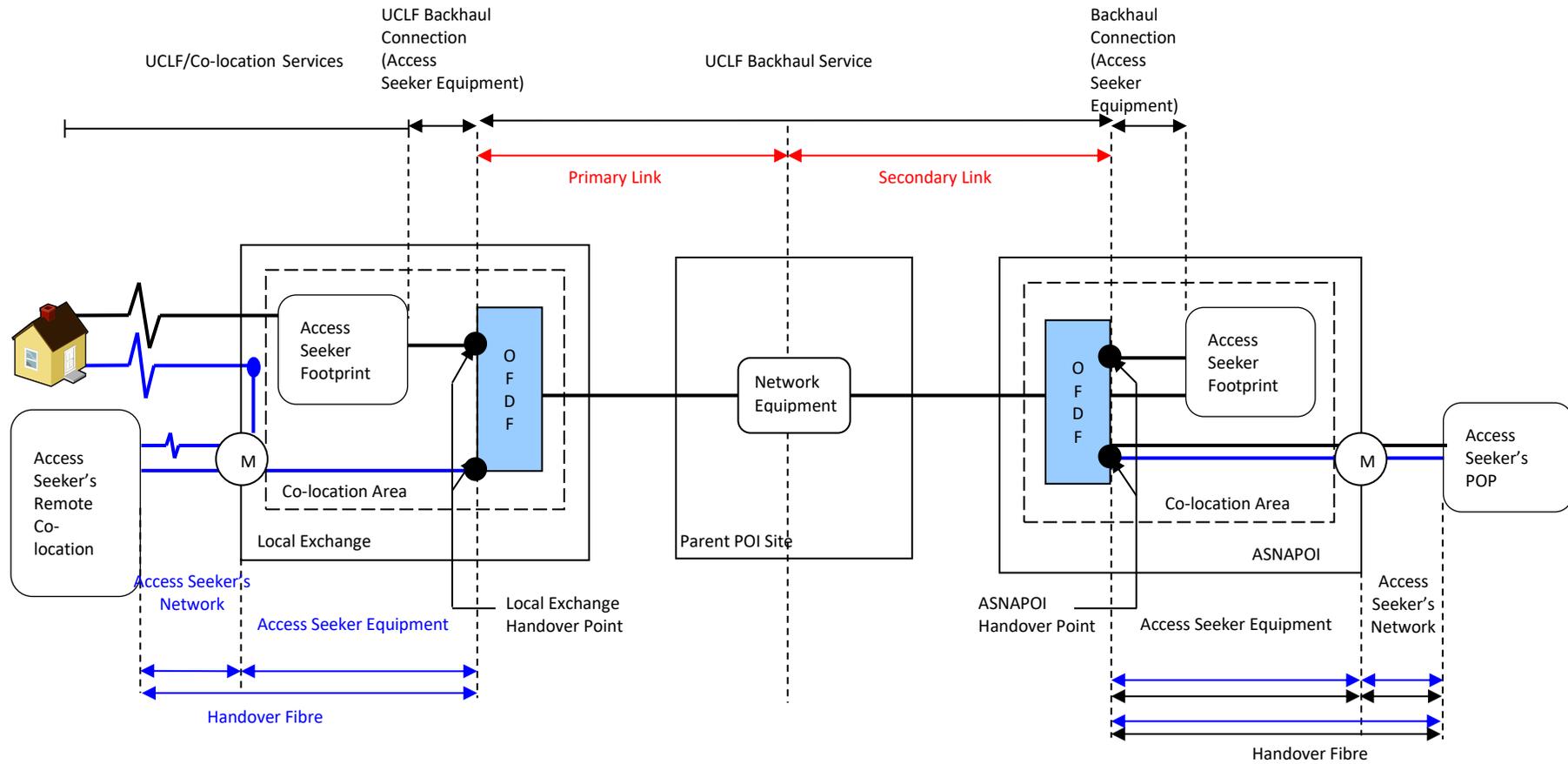


Diagram B: Primary Link only required (i.e. Parent POI Site is ASNAPOI)

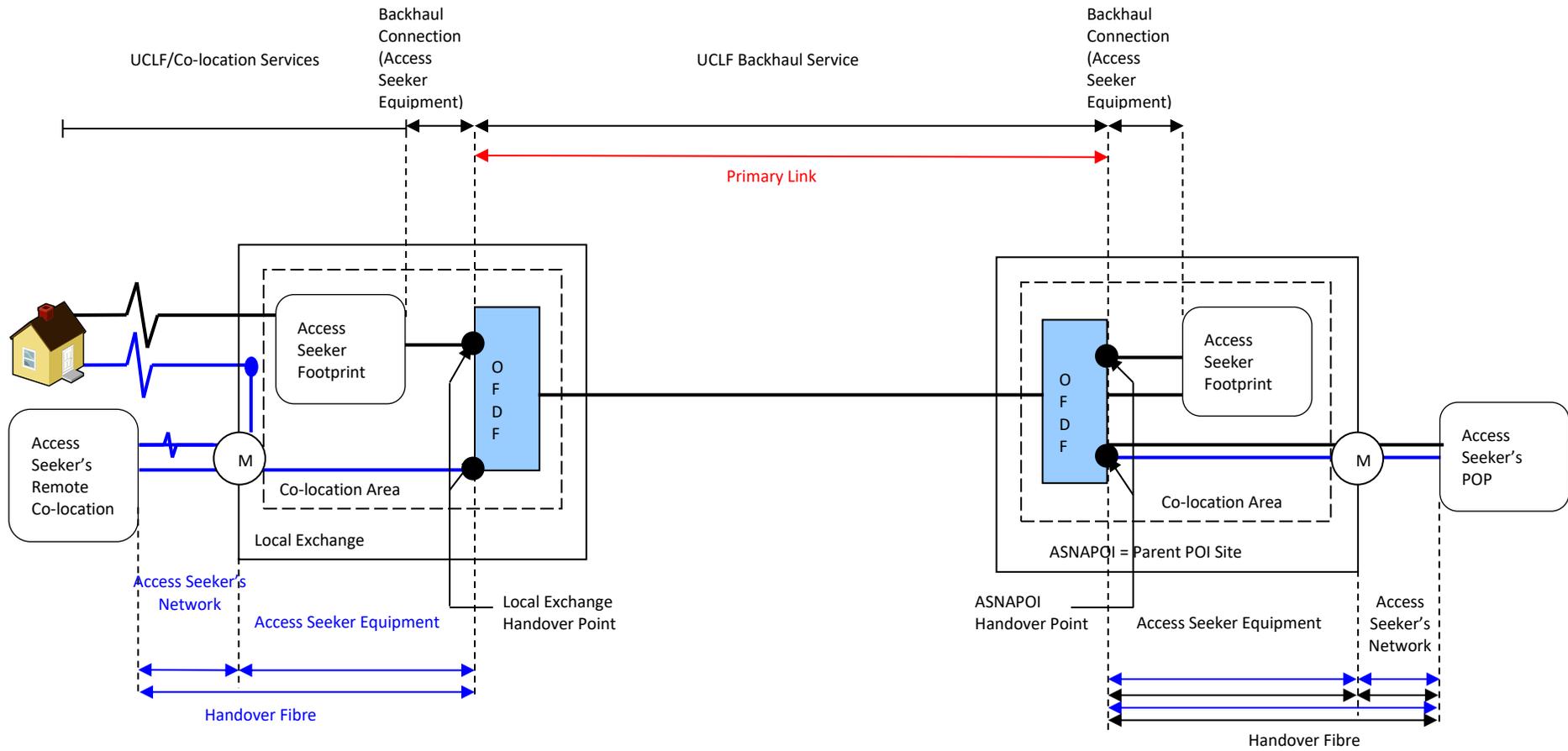
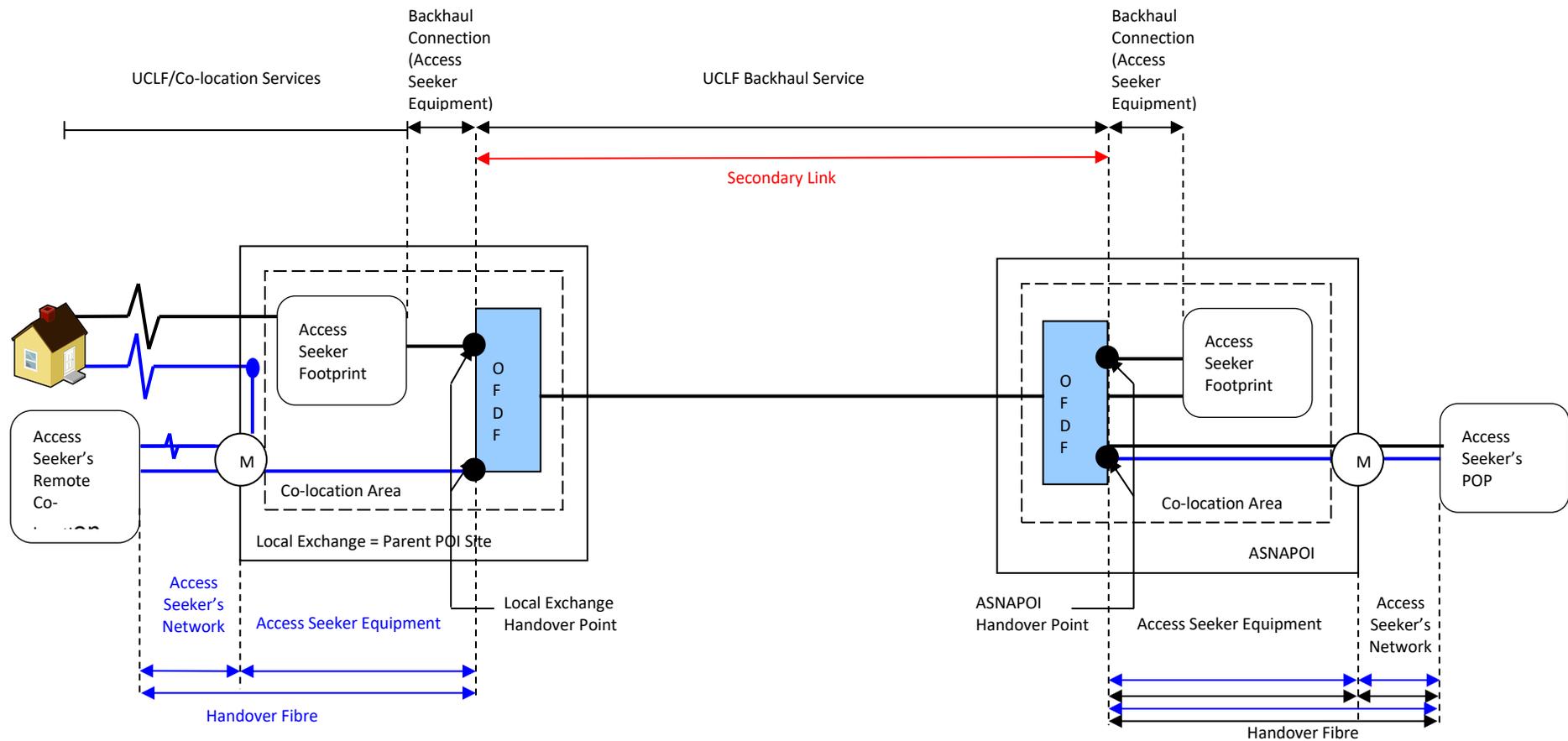


Diagram C: Secondary Link only required (i.e. Local Exchange is Parent POI Site)



## Appendix B – Specification for the UCLF Backhaul Service

The characteristics of Chorus' UCLF Backhaul Service available under this service description are:

Protocol:	Ethernet: IEEE 802.1 ad <sup>2</sup> with a maximum packet size of 1600 bytes. (It is the responsibility of the Access Seeker to manage and police the UCLF Backhaul Service to its service specifications.)
Interface:	<i>For 1 Gbps rate:</i> <ul style="list-style-type: none"><li>• 1000Base-LX over single mode fibre – 1310nm or 1550nm centre frequency, depending on range;</li></ul> <i>For 100Mbps rate:</i> <ul style="list-style-type: none"><li>• 100Base-FX over single mode fibre – 1310nm or 1550nm centre frequency, depending on range;</li></ul>
Transport:	Basic layer 2 transmission (non-intrusive transport)
Transmission capacity:	100Mbit/s and 1Gbit/s
Attributes:	Point to point only
Tagging:	Access Seekers must be responsible for ensuring the end-to-end uniqueness of their VLAN tags
Latency: <sup>3</sup>	For a Link that comprises a Primary Link only: < 5msec For a Link that comprises a Primary Link and a Secondary Link or a Secondary Link only: < 25msec
Jitter: <sup>4</sup>	For a Link that comprises a Primary Link only: < 3msec For a Link that comprises a Primary Link and a Secondary Link, or a Secondary Link only: < 7msec
Availability:	99.5% measured over a twelve month period

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<sup>2</sup> IEEE 802.1ad is an amendment to standard -1998 which is also known as QinQ or Stacked VLANs approved in 2005.

<sup>3</sup> Latency or the mean one way packet delay shall be evaluated over an interval of 15 minutes for all classes, as per Chorus standard network practice.

<sup>4</sup> Jitter or the packet delay variation means the packet transfer delay (PTD) upper minus PTD min where PTD upper is the 99.9% quartile of PTD in the evaluation interval, and PTD min is the minimum PTD in the evaluation interval. The evaluation interval will be 15 minutes, as per Chorus standard network practice.

## **Appendix C – Examples explaining the availability of the UCLF Backhaul Service**

This Appendix sets out some examples explaining how the Links upon which the UCLF Backhaul Service is available are determined.

### **Example 1:**

The Access Seeker uses the UCLFS Service at the Stoke Local Exchange. The Parent POI Site is Nelson. The Access Seeker requires a UCLF and UCLF Backhaul Service between Stoke and Wellington.

On the Primary Link (Stoke – Nelson) Chorus does not face limited, or is not likely to face lessened, competition in a market for transmission capacity. Therefore, the UCLF Backhaul Service is not available on the Primary Link.

On the Secondary Link (Nelson – Wellington) Chorus faces limited, or is likely to face lessened, competition in a market for transmission capacity. Therefore, the UCLF Backhaul Service is available on the Secondary Link. The exclusion of the Primary Link (Stoke – Nelson) from the UCLF Backhaul Service does not prevent the Access Seeker from using the UCLF Backhaul Service on the Secondary Link (Nelson – Wellington) provided the Access Seeker has made the necessary arrangements to access that Secondary Link.

### **Example 2:**

The Access Seeker uses the UCLF Service at the Glen Eden Local Exchange. The Parent POI Site is Henderson. The Access Seeker requires UCLF backhaul between Glen Eden and Torbay.

On the Primary Link (Glen Eden – Henderson) Chorus does not face limited, or is not likely to face lessened, competition in a market for transmission capacity. Therefore, the UCLF Backhaul Service is not available on the Primary Link.

On the Secondary Link (Henderson – Torbay):

- Chorus does not face limited, or is not likely to face lessened, competition in a market for transmission capacity on the Henderson – Glenfield link.
- Chorus faces limited, or is likely to face lessened, competition in a market for transmission capacity on the Glenfield – Torbay link.

Because Chorus does not face limited, or is not likely to face lessened, competition in a market for transmission capacity on the first part of the Secondary Link (Henderson-Glenfield) the

UCLF Backhaul Service is not available on the entire Secondary Link between Henderson and Torbay. The Access Seeker must make alternative arrangements for accessing transmission capacity on the Secondary Link.

The Access Seeker must make necessary arrangements to pick up the transmission capacity on that part of the Secondary Link that is available under the UCLF Backhaul Service.