



## Telecommunications (Regulated Fibre Services) Regulations 2021

Patsy Reddy, Governor-General

### Order in Council

At Wellington this 13th day of September 2021

Present:

The Right Hon Jacinda Ardern presiding in Council

These regulations are made under sections 226, 227, and 228 of the Telecommunications Act 2001—

- (a) on the advice and with the consent of the Executive Council; and
- (b) on the recommendation of the Minister for the Digital Economy and Communications given in accordance with sections 226, 227, and 228 and clauses 13 to 15 of Schedule 1AA of that Act.

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## Regulations

- 1 Title**  
These regulations are the Telecommunications (Regulated Fibre Services) Regulations 2021.
- 2 Commencement**  
These regulations come into force on 31 December 2021.
- 3 Interpretation**  
In these regulations, unless the context otherwise requires,—  
**Act** means the Telecommunications Act 2001  
**annual CPI adjustment** has the meaning given in section 5 of the Act  
**broadband anchor service** has the meaning set out in regulation 6(a)  
**Broadband Anchor Service Description** means the Chorus UFB Services Agreement (Service Description for Bitstream 2 Accelerate) Reference Offer dated June 2017, including the modifications set out in Schedule 2  
**Large-user DFAS Service Description** means the Chorus UFB Services Agreement Direct Fibre Access Services (Service Description for Direct Fibre

Access Service) Reference Offer dated April 2021, including the modifications set out in Schedule 2

**large-user direct fibre access service** has the meaning set out in regulation 13(1)

**voice anchor service** has the meaning set out in regulation 6(b)

**Voice Anchor Service Description** means the Chorus UFB Services Agreement (Service Description for Baseband) Reference Offer dated June 2017, including the modifications set out in Schedule 2.

#### 4 **Transitional, savings, and related provisions**

The transitional, savings, and related provisions (if any) set out in Schedule 1 have effect according to their terms.

#### 5 **Overview**

- (1) These regulations declare certain fibre fixed line access services to be anchor services or direct fibre access services, with the result that a regulated fibre service provider who is subject to price-quality regulation must provide those services under the Act (*see* sections 198 and 199).
- (2) *See also* the Telecommunications (Regulated Fibre Service Providers) Regulations 2019, which prescribe the regulated fibre service providers who are subject to price-quality regulation under the Act.
- (3) This regulation is only a guide to the general scheme and effect of these regulations.

#### *Anchor services*

#### 6 **Anchor services**

For the purposes of section 227(1) of the Act, the following services are declared to be anchor services:

- (a) a broadband Internet access service with a minimum download speed of 100 megabits per second and a minimum upload speed of 20 megabits per second, provided in accordance with regulations 7 and 8 (the **broadband anchor service**):
- (b) a voice-only communication service provided using an ultra-fast broadband Internet connection, provided in accordance with regulations 10 and 11 (the **voice anchor service**).

#### 7 **Broadband anchor service: description of service**

- (1) This regulation applies for the purposes of section 227(2)(a) of the Act.
- (2) In relation to the broadband anchor service, the description of the service—

- (a) is set out in the provisions of the Broadband Anchor Service Description identified in column 2 of item 1 of the following table, subject to the modifications set out in Schedule 2; and
- (b) includes the technical specifications set out in the provisions of the Broadband Anchor Service Description identified in column 2 of item 2 of the following table, subject to the modifications set out in Schedule 2.

*Table 1: service features for broadband anchor service*

	<b>Column 1</b>	<b>Column 2</b>
<b>Item</b>	<b>Service feature</b>	<b>Provisions that service must comply with</b>
1	Service description	Clauses 1 to 8 and Appendix A of the Broadband Anchor Service Description (subject to the modifications set out in Schedule 2)
2	Technical specification	Appendix B of the Broadband Anchor Service Description (subject to the modifications set out in Schedule 2)

## **8 Broadband anchor service: maximum price**

- (1) This regulation applies for the purposes of section 227(2)(d) of the Act.
- (2) The maximum price that a regulated fibre service provider who is subject to price-quality regulation may charge for the broadband anchor service, where the service is provided in respect of premises that are residential premises, is \$47.87 per month (subject to subclause (4)).
- (3) The maximum price applies in respect of each connection provided.
- (4) The maximum price increases or decreases (as appropriate) by an annual CPI adjustment on 1 July each year (starting on 1 July 2022).
- (5) In this regulation,—

**premises** has the meaning given in section 2(1) of the Residential Tenancies Act 1986

**residential premises**—

- (a) means premises that are used or intended for occupation by a person principally as a place of residence; but
- (b) does not include premises that constitute any part of premises described in section 5(1)(c) to (k) of the Residential Tenancies Act 1986 (which refers to places such as jails, hospitals, hostels, hotels, and other places providing temporary accommodation).

## **9 Additional document references for broadband anchor service**

- (1) For the purposes of regulation 7(2)(a) and (b), the following documents apply to the extent that they are relevant to the Broadband Anchor Service Description:
  - (a) the Chorus UFB Services Agreement (General Terms) dated December 2012:

- (b) the Chorus UFB Services Agreement (Operations Manual for Bitstream Services) Reference Offer dated July 2021:
  - (c) the Chorus UFB Services Agreement (Service Level Terms for Bitstream Services) Reference Offer dated October 2020:
  - (d) the notice of specified points of interconnection, published by the Commerce Commission under section 231 of the Act and dated 19 December 2019:
  - (e) the TCF UFB Ethernet Access Service Description, version 33, dated 11 May 2017:
  - (f) the technical standards listed in Part 1 of Schedule 3.
- (2) A document that is referred to in the Broadband Anchor Service Description or any of the documents in subclause (1), but that is not listed in subclause (1), has no legal effect for the purposes of regulation 7(2)(a) or (b).

#### **10 Voice anchor service: description of service**

- (1) This regulation applies for the purposes of section 227(2)(a) of the Act.
- (2) In relation to the voice anchor service, the description of the service—
  - (a) is set out in the provisions of the Voice Anchor Service Description identified in column 2 of item 1 of the following table, subject to the modifications set out in Schedule 2; and
  - (b) includes the technical specifications set out in the provisions of the Voice Anchor Service Description identified in column 2 of item 2 of the following table, subject to the modifications set out in Schedule 2.

*Table 2: service features for voice anchor service*

	<b>Column 1</b>	<b>Column 2</b>
<b>Item</b>	<b>Service feature</b>	<b>Provisions that service must comply with</b>
1	Service description	Clauses 1 to 7 and Appendix A of the Voice Anchor Service Description (subject to the modifications set out in Schedule 2)
2	Technical specification	Appendix B of the Voice Anchor Service Description (subject to the modifications set out in Schedule 2)

#### **11 Voice anchor service: maximum price**

- (1) This regulation applies for the purposes of section 227(2)(d) of the Act.
- (2) The maximum price that a regulated fibre service provider who is subject to price-quality regulation may charge for the voice anchor service is \$26.02 per month (subject to subclause (4)).
- (3) The maximum price applies in respect of each connection provided.
- (4) The maximum price increases or decreases (as appropriate) by an annual CPI adjustment on 1 July each year (starting on 1 July 2022).

**12 Additional document references for voice anchor service**

- (1) For the purposes of regulation 10(2)(a) and (b), the following documents apply to the extent that they are relevant to the Voice Anchor Service Description:
  - (a) the Chorus UFB Services Agreement (General Terms) dated December 2012;
  - (b) the Chorus UFB Services Agreement (Operations Manual for Bitstream Services) Reference Offer dated July 2021;
  - (c) the Chorus UFB Services Agreement (Service Level Terms for Bitstream Services) Reference Offer dated October 2020;
  - (d) the notice of specified points of interconnection, published by the Commerce Commission under section 231 of the Act and dated 19 December 2019;
  - (e) the technical standards listed in Part 2 of Schedule 3.
- (2) A document that is referred to in the Voice Anchor Service Description or any of the documents in subclause (1), but that is not listed in subclause (1), has no legal effect for the purposes of regulation 10(2)(a) or (b).

*Direct fibre access services***13 Direct fibre access services**

- (1) For the purposes of section 228(1) of the Act, a dark fibre service that enables access to, and interconnection with, the LFC fibre network, and that is provided in accordance with regulations 14 and 15 (the **large-user direct fibre access service**), is declared to be a direct fibre access service.
- (2) In this regulation, **LFC fibre network** has the same meaning as in section 156AB of the Act.

**14 Large-user direct fibre access service: description of service**

- (1) This regulation applies for the purposes of section 228(2)(a) of the Act.
- (2) In relation to the large-user direct fibre access service, the description of the service—
  - (a) is set out in the provisions of the Large-user DFAS Service Description identified in column 2 of item 1 of the following table, subject to the modifications set out in Schedule 2; and
  - (b) includes the technical specifications set out in the provisions of the Large-user DFAS Service Description identified in column 2 of item 2 of the following table, subject to the modifications set out in Schedule 2.

*Table 3: service features for large-user direct fibre access service*

	<b>Column 1</b>	<b>Column 2</b>
<b>Item</b>	<b>Service feature</b>	<b>Provisions that service must comply with</b>
1	Service description	Clauses 1 to 9 and Appendix A of the Large-user DFAS Service Description (subject to the modifications set out in Schedule 2)
2	Technical specification	Appendix B of the Large-user DFAS Service Description (subject to the modifications set out in Schedule 2)

**15 Large-user direct fibre access service: maximum price**

- (1) This regulation applies for the purposes of section 228(2)(d) of the Act.
- (2) The maximum price that a regulated fibre service provider who is subject to price-quality regulation may charge for the large-user direct fibre access service is \$369.41 per month (subject to subclause (4)).
- (3) The maximum price applies in respect of each connection provided.
- (4) The maximum price increases or decreases (as appropriate) by an annual CPI adjustment on 1 July each year (starting on 1 July 2022).

**16 Additional document references for large-user direct fibre access service**

- (1) For the purposes of regulation 14(2)(a) and (b), the following documents apply to the extent that they are relevant to the Large-user DFAS Service Description:
  - (a) the Chorus UFB Services Agreement (General Terms) dated December 2012;
  - (b) the Chorus UFB Services Agreement Direct Fibre Access Services (layer 1) (Operations Manual for Direct Fibre Access Services (layer 1)) Reference Offer dated October 2020;
  - (c) the Chorus UFB Services Agreement Fibre Access Services (layer 1) (Service Level Terms for Fibre Access Services (layer 1)) Reference Offer dated October 2020;
  - (d) the technical standards listed in Part 3 of Schedule 3.
- (2) A document that is referred to in the Large-user DFAS Service Description or any of the documents in subclause (1), but that is not listed in subclause (1), has no legal effect for the purposes of regulation 14(2)(a) or (b).

*Amendment to Telecommunications (Regulated Fibre Service Providers)  
Regulations 2019***17 Principal regulations**

Regulation 18 amends the Telecommunications (Regulated Fibre Service Providers) Regulations 2019.

**18 New regulation 4A inserted (Overview)**

After regulation 4, insert:

**4A Overview**

- (1) These regulations prescribe persons who provide fibre fixed line access services as being subject to information disclosure regulation and price-quality regulation under the Act.
- (2) *See also* the Telecommunications (Regulated Fibre Services) Regulations 2021, which declare certain fibre fixed line access services to be anchor services or direct fibre access services, with the result that a regulated fibre service provider who is subject to price-quality regulation must provide those services under the Act (*see* sections 198 and 199).
- (3) This regulation is only a guide to the general scheme and effect of these regulations.

**Schedule 1**  
**Transitional, savings, and related provisions**

r 4

There are no transitional, savings, or related provisions relating to these regulations as made.

## Schedule 2

### Modifications to documents incorporated by reference

rr 3, 7, 10, 14

### Part 1

#### Broadband Anchor Service Description

Replace clauses 2.1 and 2.2 with:

- 2.1 The Bitstream 2 Accelerate Service is a bitstream service suitable for accessing a wide range of Internet and bespoke applications and content delivered over a point-to-multipoint fibre access.
- 2.2 A diagram of the configuration for the Bitstream 2 Accelerate Service is set out in Appendix A. The Bitstream 2 Accelerate Service provides one Access-Ethernet Virtual Private Line (Access-EVPL) Operator Virtual Circuit (OVC) from the UNI on the ONT located at the End User Premises to the UFB Hand-over Connection Service located at the POI that enables a Service Provider to access and interconnect with the LFC network.

Replace clause 2.4 with:

- 2.4 The Bitstream 2 Accelerate Service has the following key characteristics:
- 2.4.1 The Bitstream 2 Accelerate Service includes one Ethernet Access-EVPL bitstream service delivered in conjunction with Baseband over GPON. In particular:
- (a) The Ethernet Access-EVPL bitstream service provides a single VLAN between the UNI and the E-NNI; and
  - (b) The Baseband service supports up to two instances of the ATA Voice Service.
- 2.4.2 Support for two classes of traffic, High Traffic Class and Low Traffic Class:
- | Traffic Class | CIR      | EIR      |
|---------------|----------|----------|
| Low           | $\geq 0$ | $\geq 0$ |
| High          | $\geq 0$ | $= 0$    |
- 2.4.3 Supports tagged or untagged frames at the UNI.
- 2.4.4 Optionally inserts Circuit ID information in DHCP (Version 4) and PPPoE traffic.
- 2.4.5 Complies with the Mass Market service specified in the TCF UFB Ethernet Access Service Description.

Replace clauses 3.5 to 3.7 with:

- 3.5 If the Service Provider requires additional services such as:
- (a) Any Premises wiring services; or

- (b) Installation and testing of Service Provider equipment and services, then the LFC may be able to provide those items on request subject to terms to be agreed between the LFC and the Service Provider.

*Core Bitstream 2 Accelerate Service*

- 3.6 The core bitstream services provided as part of the Bitstream 2 Accelerate Service are as follows:

3.6.1 One Access-EVPL consisting of:

- (a) A single 802.1q VLAN on a designated UNI on the ONT at the End User Premises, or for test line purposes, at the Service Provider Premises.
- (b) A single 802.1ad VLAN (Service VLAN ID/Customer VLAN ID) on the E-NNI at the POI.
- (c) A QOS bandwidth profile that describes how traffic is carried between these points.

3.6.2 Bandwidth overhead for Low Traffic Class to compensate for higher protocol encapsulation overheads. The size of the overhead is calculated as follows:

- (a) 10% overhead in Low Traffic Class bandwidth downstream; and
- (b) 10% overhead in Low Traffic Class bandwidth upstream.

This maximum bandwidth (including overhead) does not guarantee End Users will experience the headline speed as their experience is dependent on a number of external factors including, but not limited to, End User applications and local network, the Service Provider network and location of the content they are accessing.

- 3.7 The Bitstream 2 Accelerate Service includes the options, exercised by Service Request, to:

3.7.1 Set the UNI as a tagged or untagged interface.

3.7.2 Enable Circuit ID, as specified in Broadband Forum TR-101/TR-156, per service instance. If this feature is requested, then Product Instance and TR-101 information will be embedded in DHCP or PPPoE traffic.

3.7.3 If the UNI is set to untagged:

- (a) Untagged frames sent from the End User are 802.1q tagged and marked as Low Traffic Class;
- (b) Tagged frames sent from the End User are discarded; and
- (c) 802.1q tags will be removed from downstream frames and presented as 802.3 Ethernet frames at the UNI.

3.7.4 If the UNI is set to tagged:

- (a) Frames sent from the End User that do not have 802.1q tags will be discarded;

- (b) Tagged traffic sent from the End User or Service Provider is treated as follows:
- (i) Frames tagged with PCP = 5 will be treated as High Traffic Class.
  - (ii) Frames tagged with PCP = 0 will be treated as Low Traffic Class.
  - (iii) Frames tagged with PCP = 1, 2, 3, 4, 6, or 7 will be remarked as PCP 0 and treated as Low Traffic Class.
  - (iv) Frames will be treated as follows:

Type	Ingress	Transport
Low Traffic Class	CIR $\geq$ 0 EIR $\geq$ 0 Policed at ingress based on CBS/EBS	Queued and weighted fairly under congestion conditions Frames classified as EIR dropped first
High Traffic Class	CIR $\geq$ 0 EIR $\geq$ 0 Policed at ingress based on CBS	Strictly prioritised
  - (v) Downstream traffic class is determined using the s-tag PCP setting although it is recommended that both the s-tag and c-tag are set to the same value.

3.7.5 The following Service Template is available for the Bitstream 2 Accelerate Service consisting of a Baseband Service with one instance of the ATA Voice Service and one Ethernet Access-EVPL Bitstream service as follows:

Template			Evolve 100-20-2.5-2.5 <sup>1</sup>
ATA ports			1
Headline <sup>2</sup>	Low Traffic Class (Mbps)	Down	100
		Up	20
	High Traffic Class (Mbps)	Down	2.5
		Up	2.5
Low Traffic Class PIR (Mbps) <sup>3</sup>		Down	110
		Up	22
Low Traffic Class Downstream	EIR	Mbps	107.5
	EBS	kB	180
	CIR	Mbps	2.5
	CBS	kB	32
Low Traffic Class Upstream	EIR	Mbps	19.5
	EBS	kB	100
	CIR	Mbps	2.5
	CBS	kB	32
High Traffic Class Downstream	EIR	Mbps	0

Template			Evolve 100-20-2.5-2.5 <sup>1</sup>
	EBS	kB	0
	CIR	Mbps	2.5
	CBS	kB	32
High Traffic Class	EIR	Mbps	0
Upstream	EBS	kB	0
	CIR	Mbps	2.5
	CBS	kB	32

<sup>1</sup>Available for residential connections only.

<sup>2</sup>Available for residential connections only. The headline rate is the Layer 2 bandwidth prior to the addition of the overhead described in clause 3.6.2.

<sup>3</sup>Low Traffic Class “Peak Information Rate” is the headline rate plus the bandwidth overhead described in clause 3.6.2.

*UNI – NNI characteristics*

3.7.6 All Bitstream 2 Accelerate Services (ATA Voice and Access-EVPL) on a UNI must belong to the same Service Provider and must each connect to an E-NNI belonging to that Service Provider. However, each Service can connect to a different E-NNI at the same or different POI within a Coverage Area.

3.7.7 The sum of High and Low Traffic Class traffic profiles of all services delivered at a UFB Handover Connection Service can exceed the UFB Handover Connection Service line rate. If there is insufficient line rate to deliver the traffic then frames will be randomly discarded, based on their Class of Service precedence, and Service Levels for that Class of Service do not apply. It is therefore the Service Provider’s responsibility to shape and queue traffic appropriately.

Delete clauses 3.8 to 3.11.

In the heading to clause 4, delete “or Service Provider Premises or NBAP (as applicable)”.

In clause 5.1, replace “E-AVPL” with “Access-EVPL”.

Replace clause 7.2 with:

7.2 A diverse lead-in between the Fibre Access Point and the Premises may be available as an option for some but not all Premises. Standard Installation Charges and Service Levels do not apply to the provision of the diverse products that involve diverse access to the End User Premises. Each instance of the Bitstream 2 Accelerate Service, primary and diverse, will be treated as an individual line for the purpose of availability Service Levels.

In Appendix A,—

- (a) in the second bullet point, replace “only apply to” with “only apply from the”; and
- (b) after the third bullet point, insert:

- The Bitstream 2 Accelerate Service Template contains a single Access-EVPL and one (optional) Voice-EVPL, which is part of the Baseband Service Description. The Access-EVPL and Voice-EVPL OVC must belong to the same Service Provider, but can be managed to the same or different E-NNIs.
- (c) delete “The Bitstream services support simultaneous delivery of multiple Service Templates from the same or multiple Service Providers as follows:”; and
- (d) delete the last 5 bullet points.

In Appendix B, replace the first 2 items in the table (labelled “Ethernet” and “UNI”) with:

Ethernet	Ethernet II or 802.3 untagged interface; or 802.1q tagged interface with <ul style="list-style-type: none"> <li>• VLAN id = 10</li> <li>• Untagged (Low Traffic Class)</li> <li>• 802.1p = 0, 1, 2, 3, 4, 6, 7 (Low Traffic Class)</li> <li>• 802.1p = 5 (High Traffic Class)</li> </ul>
UNI	ONT supports: <ul style="list-style-type: none"> <li>• 4 x 100/1000Base-T UNI</li> <li>• 1 or 2 x ATA Voice ports</li> <li>• Optional additional ports:               <ul style="list-style-type: none"> <li>• WiFi</li> </ul> </li> </ul>

In Appendix B, in the fourth item of the table (labelled “VLAN”), replace “E-AVPL” with “Access-EVPL”.

In Appendix B, in the seventh item of the table (labelled “Optic Path”), replace “Laser types” with “Optical”.

## Part 2

### Voice Anchor Service Description

Replace clause 1.3 with:

1.3 This Service Description describes the Baseband Service where it is delivered using GPON Fibre access.

Replace clause 2 with:

#### 2 The Baseband Service

2.1 The Baseband Service is a service to enable the delivery of PSTN-grade analogue phone and telephony services over a GPON point-to-multipoint Fibre access from the End User Site to the Handover Point.

2.2 A diagram of the configuration for Baseband Service is set out in Appendix A. The Baseband Service delivers an analogue voice service from an ATA port on the ONT located at the End User Premises to the UFB Handover Connection

- Service located at the POI that enables a Service Provider to interconnect with the LFC Network.
- 2.3 The Baseband Service is an input service which a Service Provider can combine with other LFC services (or with the Service Provider’s own network or wholesale services provided by other service providers) to provide fibre-based voice telecommunications services to End Users.
- 2.4 The Baseband Service has the following key characteristics:
- 2.4.1 Supports PSTN-compatible analogue telephony devices connected to an ATA Port on the ONT. Facsimile and dial-up modem support may be limited, and such limitations will grow over time. The LFC will advise the Service Provider of these limitations from time to time.
  - 2.4.2 Uses a carrier-grade G.711a Voice Codec with a packetisation rate of 10ms.
  - 2.4.3 Supports SIP signalling.
  - 2.4.4 Delivered as a bitstream service per UNI to a UFB Handover Connection Service located at a POI using a dedicated Voice Ethernet Virtual Private Line Operator Virtual Circuit (Voice-EVPL OVC) VoIP bitstream service.
  - 2.4.5 Supports New Zealand PSTN tones and cadences as set out in Telecom Network Advisory Specification TNA 102.
  - 2.4.6 Includes a facility to allow Service Providers to remotely configure and manage the service.
  - 2.4.7 Can be delivered as “voice-only”, or as part of the Bitstream 2 Accelerate Service.

Replace clause 3.1 with:

- 3.1 The Baseband Service will be made available during the installation of a “voice-only” service, or as part of a Bitstream 2 Accelerate service, each of which includes a Standard Install<sup>1</sup> as set out in the Operations Manual. The LFC will provide Non-Standard Installs as an ancillary service.

In clause 3.3, after “Operations Manual.”, insert “The testing may be limited to an outgoing call and is subject to the Service Provider having configured the voice service at time of install.”

In clause 3.4,—

- (a) in paragraph (a), delete subparagraphs (ii) and (iii); and
- (b) replace “Items (a) and (b) are” with “Item (a) is”.

Replace clauses 3.5 to 3.7 with:

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<sup>1</sup> Standard Install parameters may differ between LFCs

- 3.5 The Baseband Service provides the following key service attributes:
- 3.5.1 One or more RJ11 ATA interfaces on the ONT located at the End User Premises, which converts analogue voice to VoIP frames upstream, and VoIP frames to analogue voice downstream.
  - 3.5.2 A SIP User Agent in the ONT, which acts as a logical network end point and manages the Voice sessions using SIP protocols.
  - 3.5.3 An Access-EVPL that associates the SIP User Agent in the ONT with an E-NNI. The Access-EVPL UNI is internal to the ONT and is not accessible externally.
  - 3.5.4 Delivered at the Handover Point as a G.711a bitstream with SIP signalling over a unique 802.1ad SVLAN on the ENNI.
  - 3.5.5 RGW Voice traffic will be treated as High Traffic Class.
  - 3.5.6 Supports the voice standards set out in clause 9.2 of the General Terms.
- 3.6 The Baseband Service supports:
- 3.6.1 Analogue voice;
  - 3.6.2 Facsimile; and
  - 3.6.3 A minimum of 14.4 kbps modem transmission,  
but it may not be backwards compatible with all existing facsimiles, modems and customer premises equipment (CPE).
- 3.7 The Baseband Service may be ordered by the Service Provider in one of the following combinations:
- 3.7.1 the Baseband Service on its own, suitable for a voice-only service; or
  - 3.7.2 in conjunction with the Bitstream 2 Accelerate Service Template that combines Baseband with the Bitstream Service defined in the Bitstream 2 Accelerate Service Description.

Delete clauses 3.8 to 3.10.

Replace clause 3.13.3 with:

- 3.13.3 a facility to allow Service Providers to remotely configure and manage the Baseband Service; and
- 3.13.4 a tool to assist the Service Provider in determining the location and availability of the Baseband Service (pre-qualification),

In clause 3.14.4, delete “, Service Providers Premises or NBAP (as applicable)”.

In the heading to clause 4, delete “, **Service Providers Premises or NBAP (as applicable)**”.

Replace clause 4.1 with:

- 4.1 The Service Demarcation Point at the End User Premises is the RJ11 port on the ONT.

In clause 4.2, delete “, Service Providers Premises or NBAP (as applicable)” in each place.

Replace clause 5.1 with:

5.1 The Baseband Service is delivered as a single VLAN (the logical Service Demarcation Point) on the UFB Handover Connection Service located at the POI.

In Appendix A,—

- (a) in the first bullet point, delete “, i.e. there is no incremental charge from the Intermediate POI to the POI”; and
- (b) delete the second and third bullet points; and
- (c) after the fourth bullet point (relating to service levels), insert:
  - The Voice-EVPL is used to describe the combination of ATA Port, SIP User Agent and associated Access-EVPL OVC to the E-NNI.
- (d) delete “The Bitstream services support simultaneous delivery of multiple Service Templates from the same or multiple Service Providers as follows:”; and
- (e) delete the last 4 bullet points.

Replace Appendix B with:

## Appendix B: Technical Specification

### Technical Specification

#### *End User Premises*

ATA Voice over fibre	RJ11 Analogue interface compliant with PTC 220, section 5
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#### *Handover Point*

UFB Handover Connection	802.1ad VLAN or double-tagged QnQ PCP = 45
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#### *Voice*

Line and information signalling	DTMF dialling
	Ringing cadences as specified in Telecom Network Advisory Specification TNA 102
	FSK signalling

#### Codec

Dial tone spec, incl stutter dial tone for MWI  
G.711a codec at 10ms sampling rate. 200-byte packet metric.  
Maximum delay allowance for jitter of 20ms.

#### Voice band dRGW support

DTMF in band and RFC 4733  
Transmission characteristics capable of supporting minimum 14.4kb/s voice band dRGW transmission for fax and modems

#### SIP

RFC 3261 SIP: Session Initiation Protocol, June 2002

#### *Fibre*

Fibre	External fibre must comply with ITU-T specification G.652D or 657A.
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	Internal building fibre cables must meet appropriate fire regulations i.e. be Flame-Retardant, Non-Corrosive, Low-Smoke, Zero-Halogen (FRNC/LSZH)
Connector Type	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.
Optic Path	Optical and path characteristics are expected to be designed to a minimum standard contained in either the IEEE 802.3 Section 5 standard or the ITU-T G.984 standard.
Fibre Testing Layer 1	<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 Chorus standard described in ND0556.</p> <p>The methodology used will be based on bi-directionally testing all fibres in the Communal Network required to complete the service.</p> <p>Network test results are provided by agreement verifying performance features. Refer to the Direct Fibre Services Operations Manual for details.</p> <p>All Layer 1 network restoration testing will be LFC site OFDF to Premises termination point.</p> <p>Testing for power loss will be at either 1310nm or 1550nm.</p> <p>In the event of a fault, restoration testing will be to the standard in Optical Performance table below.</p> <p>The wavelengths of 1625nm and 1650nm are reserved for network maintenance testing purposes, (live GPON network) compliant with ITU-T L.41.</p>
Optical Path Performance	<p>Communal Network performance</p> <p>Total GPON Insertion Loss (ITU-T G984) = <math>\leq 28.5\text{db}</math></p> <p>Network Return Loss = <math>\geq 32\text{db}</math></p> <p>LFC GPON system margin (lifetime ageing factor) = 1.5db</p> <p>Total GPON insertion Loss OLT to ONT design target is <math>\leq 27.0\text{db}</math> (28.5db – 1.5db)</p> <p>Optical Fibre Attenuation Co-Efficient (L) (ITU-T G.652. &amp; G657.A) = <math>\leq 0.4\text{db/km}</math></p> <p>Splice Loss (S) = <math>\leq 0.15\text{db}</math></p> <p>Mated Connector loss (C) = <math>\leq 0.3\text{db}</math></p> <p>Mated Connector Reflection = <math>\geq 55\text{db}</math></p> <p>Total Insertion Loss of network (IL) is calculated from <math>IL = 0.4L + 0.15S + 0.3C</math> (excluding PON splitter)</p> <p>Splitter performance</p> <p>1:32 = <math>\leq 17\text{db}</math></p> <p>1:16 = <math>\leq 14\text{db}</math></p> <p>1:8 = <math>\leq 11\text{db}</math></p> <p>1:4 = <math>\leq 7.3\text{db}</math></p> <p>1:2 = <math>\leq 4.0\text{db}</math></p>

### **Part 3**

#### **Large-user DFAS Service Description**

Delete clauses 8.4 and 8.5.

In Appendix B, in the third item in the table (labelled “Optic Path”), replace “Laser types” with “Optical”.

## Schedule 3

### Technical standards cited in service descriptions

rr 9, 12, 16

#### Part 1

#### Broadband Anchor Service Description

Abbreviation used in service description	Full title
IEC 61754-4	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 4: Type SC connector family (2013)
IEC 61754-20	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family (2012)
IEEE 802.3	IEEE Standard for Ethernet (2018)
ITU-T G.652	Characteristics of a single-mode optical fibre and cable (November 2016)
ITU-T G.657	Characteristics of a bending-loss insensitive single-mode optical fibre and cable (November 2016)
ITU-T G.984	ITU-T G.984 Umbrella Standard (2010)
ITU-T L.41	Maintenance wavelength on fibres carrying signals (May 2000)
ND0556	Optical Fibre – Layer 1 Network Test Plan – Volumes 1-3 (December 2016)

#### Part 2

#### Voice Anchor Service Description

Abbreviation used in service description	Full title
IEC 61754-4	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 4: Type SC connector family (2013)
IEC 61754-20	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family (2012)
IEEE 802.3	IEEE Standard for Ethernet (2018)
ITU-T G.652	Characteristics of a single-mode optical fibre and cable (November 2016)
ITU-T G.657	Characteristics of a bending-loss insensitive single-mode optical fibre and cable (November 2016)
ITU-T G.711a	ITU-T G.711 Pulse code modulation (PCM) of voice frequencies (2000)
ITU-T G.984	ITU-T G.984 Umbrella Standard (2010)
ITU-T L.41	Maintenance wavelength on fibres carrying signals (May 2000)
ND0556	Optical Fibre – Layer 1 Network Test Plan – Volumes 1-3 (December 2016)
PTC 220	Requirements for Private Voice Networks connected to the PSTN/ISDN/VoIP public networks (July 2019)
RFC 4733	RTP Payload for DTMF Digits, Telephony Tones and Telephony Signals (December 2006)
RFC 3261	SIP: Session Initiation Protocol (June 2002)
TNA 102	Characteristics of the Spark Analogue Telephone Network Customer Interface (August 2019)

### Part 3

## Large-user DFAS Service Description

Abbreviation used in service description	Full title
IEC 61754-4	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 4: Type SC connector family (2013)
IEC 61754-20	Fibre optic interconnecting devices and passive components – Fibre optic connector interfaces – Part 20: Type LC connector family (2012)
IEEE 802.3	IEEE Standard for Ethernet (2018)
ITU-T G.652	Characteristics of a single-mode optical fibre and cable (November 2016)
ITU-T G.657	Characteristics of a bending-loss insensitive single-mode optical fibre and cable (November 2016)
ITU-T G.984	ITU-T G.984 Umbrella Standard (2010)
ITU-T L.41	Maintenance wavelength on fibres carrying signals (May 2000)
ND0556	Optical Fibre – Layer 1 Network Test Plan – Volumes 1-3 (December 2016)

Michael Webster,  
Clerk of the Executive Council.

### Explanatory note

*This note is not part of the regulations, but is intended to indicate their general effect.*

These regulations, which come into force on 31 December 2021, declare certain fibre fixed line access services to be anchor services or direct fibre access services. A regulated fibre service provider who is subject to price-quality regulation must provide those services under the Telecommunications Act 2001 (the **Act**) (*see* sections 198 and 199).

The Telecommunications (Regulated Fibre Service Providers) Regulations 2019 prescribe the regulated fibre service providers who are subject to price-quality regulation under the Act.

The anchor services are as follows:

- a broadband Internet access service with a minimum download speed of 100 megabits per second and a minimum upload speed of 20 megabits per second;
- a voice-only communication service provided using an ultra-fast broadband Internet connection.

The direct fibre access service is a dark fibre service that enables access to, and inter-connection with, the LFC fibre network (*see* section 156AB of the Act).

These regulations prescribe for each service a description of the service and the maximum price that a regulated fibre service provider who is subject to price-quality regulation may charge for providing the service.

**Telecommunications (Regulated Fibre Services)  
Regulations 2021**

2021/259

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