

Specified points of interconnection

Reasons paper

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Glossary

Act	Telecommunications Act 2001
End-user	In relation to a telecommunications service, means a person who is the ultimate recipient of that service or of another service whose provision is dependent on that service
E-NNI	External network-to-network interface
FFLAS	Fibre fixed line access service
ICABS	Intra-candidate area backhaul services, a backhaul product provided by Chorus
Layer 1	Means layer 1 of the OSI Model, which is normally associated with passive fibre optic network infrastructure
Layer 2	Means layer 2 of the OSI model, which is normally associated with active fibre optic network infrastructure
LFC	Local fibre companies (including Chorus)
NIPA	Network Infrastructure Project Agreement
POI	Point of Interconnection
PONFAS	Passive optical network fibre access service
Regulated fibre service provider	A person prescribed by the Governor-General as being subject to regulation under s 226 of the Act
RSP	Retail Service Provider
SFA	Specified Fibre Area
Specified fibre service	Means either of the following: <ul style="list-style-type: none"> • FFLAS; or • a telecommunications service provided by a regulated fibre service provider (F) over fibre media where the ultimate recipient of the service is F or a related party of F (as if the test for related parties were the same as the test in section 69U of the Act, applied with any necessary modifications)
UFB	The New Zealand Government's Ultra-fast broadband initiative
UFB initiative POIs	The POIs based on the POIs that apply as at the close of 31 December 2019 under the UFB initiative

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Introduction

Purpose and structure of this paper

1. Section 231 of the Telecommunications Act 2001 (Act) gives the Commerce Commission (Commission) the power to prescribe points of interconnection (POIs) for the purposes of establishing fibre handover points.
2. Alongside this publication, we are prescribing POIs by public notice for the first time. We are prescribing POIs because POIs need to be in effect for us to declare specified fibre areas (SFAs) under section 69AB of the Act. We are required to make our first declaration of SFAs by 1 January 2020.
3. The purpose of this reasons paper (Reasons Paper) is to outline our decisions on POIs following our Consultation Paper and submissions and cross-submissions received in response to the Consultation Paper.
4. This Reasons Paper has the following sections:
 - 4.1 legal framework;
 - 4.2 first POI notice;
 - 4.3 our ongoing role to prescribe POIs; and
 - 4.4 Attachment A: List of specified POIs.

Our process

5. We received submissions on our Consultation Paper on 26 November 2019. Submissions were received from Chorus, Enable Networks, Ultrafast Fibre, Northpower, Spark, Vodafone, Vital, Vector and 2degrees.
6. We then invited cross-submissions. Cross-submission were received from Chorus, Enable, Spark, Ultrafast Fibre and Vector.
7. Table 1 provides a timeline of the process we have followed.

Table 1 – Timeline of process

Key step	Date
Consultation Paper published	12 November 2019
Submissions on Consultation Paper	26 November 2019
Cross-submissions on Consultation Paper	4 December 2019
Reasons paper and list of specified POIs published	19 December 2019
Notice of specified POIs published in the <i>Gazette</i>	19 December 2019

Legal framework

Relevant provisions in Telecommunications Act

8. Section 231, which is in Part 6 of the Act, gives the Commission the power to prescribe POIs. It provides:

231 Specified points of interconnection

- (1) The Commission may, by public notice, prescribe points of interconnection for the purposes of establishing fibre handover points.
 - (2) The notice may prescribe a point of interconnection by reference to 1 or more of the following:
 - (a) a regulated fibre service provider's network:
 - (b) a geographical location:
 - (c) the UFB initiative.
 - (3) The Commission may amend or revoke a notice in the manner in which it was made.
 - (4) However, the Commission must not amend a specified point of interconnection unless the amendment—
 - (a) is for an appropriate technical purpose; and
 - (b) is consistent with the purpose in section 162.
 - (5) The first notice made under this section—
 - (a) must prescribe points of interconnection based on the points of interconnection that apply as at the close of 31 December 2019 under the UFB initiative; and
 - (b) may prescribe additional points of interconnection.
 - (6) A notice under this section is neither a legislative instrument nor a disallowable instrument for the purposes of the Legislation Act 2012 and does not have to be presented to the House of Representatives under section 41 of that Act.
9. Section 5 of the Act defines 'specified point of interconnection' as a POI prescribed under section 231.
10. As section 231(1) states, the purpose of prescribing POIs is to establish fibre handover points. The term 'fibre handover point' is defined in section 5 of the Act:

fibre handover point means the external network-to-network interface (or equivalent facility) located at the specified point of interconnection for the relevant end-user's premises, building, or other access point that enables access to, and interconnection with, a regulated fibre service provider's fibre network

11. The definition of ‘fibre network’ in the Act indicates that the fibre handover point defines the upstream boundary of a fibre network,¹ with the downstream boundary demarcated by the user-network interface:

fibre network means a network structure used to deliver telecommunications services over fibre media that connects the user-network interface (or equivalent facility) of an end-user’s premises, building, or other access point to a regulated fibre service provider’s fibre handover point

12. In turn, ‘fibre fixed line access service’ (FFLAS) is defined with reference to ‘fibre network’:

fibre fixed line service—

- (a) means a telecommunications service that enables access to, and interconnection with, a regulated fibre service provider’s fibre network

...

13. The waterfall of definitions outlined above show that POIs play a central role in determining the availability of FFLAS.² As we noted in our Fibre input methodologies: Draft Decision – reasons paper (Fibre IMs Draft Decision Paper), regulations under section 226 of the Act then determine the scope of regulated FFLAS.³

14. Finally, we note that, for the first notice under section 231, the Commission must prescribe POIs based on the POIs that apply as at the close of 31 December 2019 under the UFB initiative. The term ‘UFB initiative’ is defined in the Act as follows:

UFB initiative—

- (a) means the competitive tender programme, known as the Ultra-fast Broadband Initiative, to develop fibre-to-the-premises broadband networks connecting 75% of New Zealand households, with the support of \$1.5 billion of Crown investment funding; and

(b) includes—

- (i) the extension to that programme known as UFB 2, to develop fibre-to-the-premises networks connecting at least 80% of New Zealand households (which, to avoid doubt, includes the extension to UFB 2 known as UFB 2+); and
- (ii) any other extension to the programme

15. We refer to the POIs that apply under the UFB initiative as ‘UFB initiative POIs’.

¹ Viewed as a hierarchy of nodes, this means that the fibre handover point is at the “highest” node in the fibre network.

² Commerce Commission “Fibre input methodologies: Draft decision – reasons paper” (19 November 2019) at paragraph 2.78.

³ Commerce Commission “Fibre input methodologies: Draft decision – reasons paper” (19 November 2019) at paragraphs 2.57-2.62.

Legislative history

16. When the Telecommunications (New Regulatory Framework) Amendment Bill (Bill) was introduced to Parliament, the power to prescribe POIs was to lie with the Governor-General. However, after receiving submissions, the Economic Development, Science and Innovation Select Committee (Select Committee) reported back the Bill with an amendment providing for the Commission to prescribe POIs. In its final report, the Select Committee included the following commentary on the amendment to the Bill:⁴

Specified points of interconnection

As introduced, new section 226 would allow the Governor-General, on the recommendation of the Minister, to make regulations prescribing points of interconnection (POI) for the purposes of establishing fibre handover points.

POIs are the places where the Retail Service Provider's network connects to the wholesale fibre provider's network. A feature of the Ultra-fast Broadband (UFB) architecture is a single POI per candidate area, driving competition and supporting open access.

We consider that specifying POIs is a technical matter that does not warrant the involvement of the Minister or the Governor-General in making regulations. We therefore recommend amending section 226 to allow the Commerce Commission to specify the relevant points of interconnection from time to time by way of public notice, without the need for regulations.

We must prescribe POIs in order to declare SFAs

17. We have separately consulted on our function under section 69AB of the Act to assess and declare SFAs, which we must do by 1 January 2020.⁵ Our first declaration of SFAs will be made by public notice on 19 December 2019, with an effective date for the SFAs of 1 February 2020.
18. SFAs are areas where a 'specified fibre service' is available to end-users. A 'specified fibre service' is a FFLAS.⁶
19. We need to prescribe POIs for us to be able to declare SFAs. As we explained in our paper, 'Determining specified fibre areas – Framework and initial approach', a specified fibre service will be available where the key components of that service exist, ie, a regulated fibre service provider, a fibre network and a fibre handover point.⁷

⁴ Economic Development, Science and Innovation Select Committee "Final Report on Telecommunications (New Regulatory Framework) Amendment Bill" (4 May 2018), at page 6.

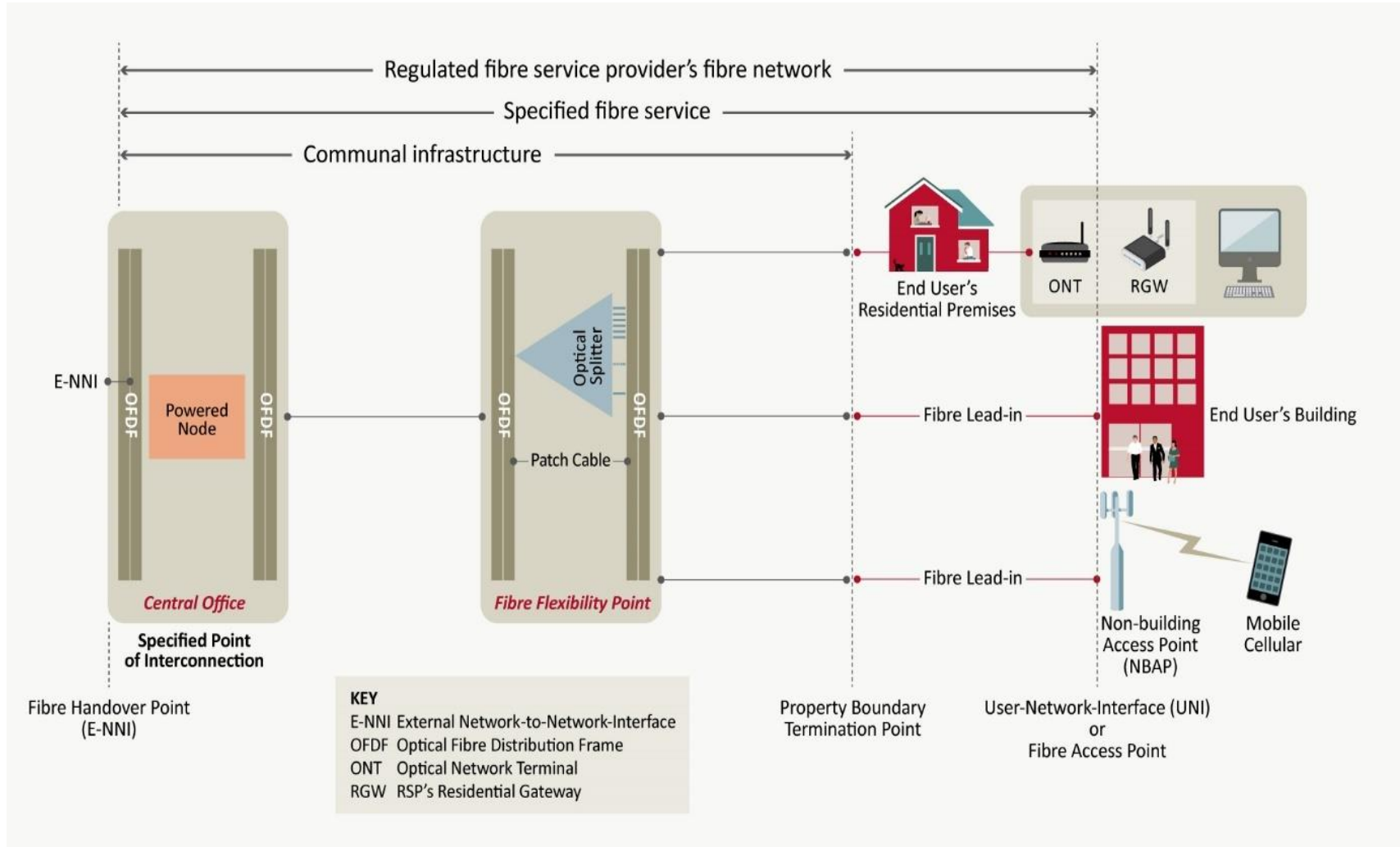
⁵ Commerce Commission, Specified Fibre Areas Project Page: <https://comcom.govt.nz/regulated-industries/telecommunications/projects/specified-fibre-areas>.

⁶ A 'specified fibre service' can also be a telecommunications service provided by a regulated fibre service provider (F) over fibre media where the ultimate recipient of the service is F or a related party of F (as if the test for related parties were the same as the test in section 69U of the Act, applied with any necessary modifications). However, services of this kind are likely to be relatively uncommon.

⁷ Commerce Commission "Determining specified fibre areas: Framework and initial approach" (31 October 2019) at paragraphs 43-44. Available at <https://comcom.govt.nz/regulated-industries/telecommunications/projects/specified-fibre-areas>.

20. Because POIs establish fibre handover points and define the upstream boundary of a fibre network, POIs must be in effect for a specified fibre service to exist. We must therefore prescribe POIs before we declare SFAs on 19 December 2019.
21. Figure 1 on the next page shows a fibre handover point in the context of a fibre network and specified fibre service.

Figure 1 – Scope of specified fibre services



First POI notice

22. This is the first time we exercise our power to prescribe POIs. The first notice under section 231:
 - 22.1 must prescribe the UFB initiative POIs; and
 - 22.2 may prescribe additional POIs.
23. We have decided to prescribe only the UFB initiative POIs for the first notice. A list of the POIs that will be prescribed is provided at Attachment A. These are the UFB initiative POIs that we expect will exist as at 31 December 2019. The list has been revised following submissions received on the Consultation Paper.⁸
24. We have published the first notice in the *Gazette* on 19 December 2019, which is the last day in 2019 on which a notice can be published in the *Gazette*. This is before regulations under section 226 of the Act (which prescribe regulated fibre service providers and the services in respect of which they are subject to regulation under Part 6 of the Act) come into force, which will be on 20 December 2019. Because the section 226 regulations need to be in force when we prescribe POIs,⁹ the prescribed POIs will come into force on 20 December 2019.
25. The first notice includes the following information for each prescribed POI:
 - 25.1 the name of the related regulated fibre service provider;
 - 25.2 POI identifier;
 - 25.3 name of the POI;
 - 25.4 the region that the POI is located in; and
 - 25.5 the POI's associated geographic area (or areas) under the UFB initiative.
26. We also include in the notice a confidential attachment with the physical address for each POI. Retail service providers (RSPs) will be able to obtain physical addresses for POIs from the relevant regulated fibre service provider under appropriate confidentiality arrangements.
27. In the following sections we address the key issues involved in prescribing POIs, including those raised in submissions and cross-submissions. These issues are:
 - 27.1 the single POI per candidate area UFB requirement;

⁸ The list does not include Chorus' Pukekohe, Waiheke or Waiuku exchanges as specified POIs. We understand it was originally intended that these serve as POIs for UFB 1 candidate areas. However, we understand that the POIs for the Auckland candidate area serve as the POIs for Pukekohe, Waiheke Island and Waiuku. If it is considered necessary to specify these exchanges as POIs in the future, we can amend the POI notice to prescribe these exchanges as POIs.

⁹ Commerce Commission "Specified points of interconnection – Consultation paper" (12 November 2019) at paragraph 22.

- 27.2 whether layer 1 POIs should be prescribed; and
- 27.3 the requirement to relate end-user premises, buildings and other access points (for simplicity, referred to as 'end-user premises' from now on) to a POI.

28. We also discuss briefly other issues raised in submissions.

Single POI per candidate area

- 29. In the Consultation Paper, we gave our preliminary view that the UFB initiative POIs are those POIs that were implemented to satisfy the single POI per candidate area requirement under the Network Infrastructure Project Agreements (NIPAs¹⁰) entered into by local fibre companies (including Chorus) (LFCs) and Crown Infrastructure Partners.¹¹
- 30. We noted that the single POI per candidate area requirement under the NIPAs is that every end-user within a UFB candidate area must be accessible by an RSP from a single POI.¹²
- 31. Submissions generally agreed with these statements. However, some submissions sought clarification as to whether we were proposing that there would be only one POI per candidate area. For example, Chorus submitted that "the reference in the NIPA to a 'single POI' does not mean that there must only be one POI in each candidate area, but simply means that each POI must enable access to all surrounding end-users to RSPs".¹³
- 32. We agree with Chorus' submission and confirm that this was the position intended in the Consultation Paper. Candidate areas may have one or more POIs, but each POI in a candidate area must enable access to all end-users in the candidate area. This means that RSPs are required to interconnect at only a single POI in a candidate area to access all end-users in the area. We use the phrase 'single POI per candidate area' – which was used by the Select Committee in its report on the Bill – to refer to this requirement.

Whether layer 1 POIs should be prescribed

- 33. In the Consultation Paper, we gave our preliminary view that the UFB initiative POIs are limited to POIs at layer 2 handover points and should not be prescribed at layer 1 handover points.¹⁴

¹⁰ The NIPAs are available at <https://www.crowninfrastructure.govt.nz/ufb/who/>.

¹¹ Commerce Commission "Specified points of interconnection – Consultation paper" (12 November 2019) at paragraphs 26-27.

¹² For example, Chorus' NIPA for UFB 1 (dated 24 May 2011), Annexure 2: Requirements, specifies that "[a]ll Layer 2 End Users within a Candidate Area must be accessible from a single POI".

¹³ Chorus "Submission on the Commerce Commission's specified points of interconnection consultation paper" (26 November 2019) at paragraph 31.

¹⁴ Commerce Commission "Specified points of interconnection – Consultation paper" (12 November 2019) at paragraph 30.

34. Submissions on our preliminary view were mixed. A majority agreed with our preliminary view,¹⁵ but some submitters disagreed. Chorus submitted that we “should prescribe, under section 231, the specified points of interconnection for both layer 1 and layer 2 services as the fibre handover points are different for each layer, and as recognised in the NIPA today”.¹⁶
35. The Act does not provide a clear-cut indication as to whether we are to specify layer 1 POIs and layer 2 POIs. However, we remain of the view that the UFB initiative POIs are limited to layer 2 POIs and provide the following reasons in support of our view.

Use of term ‘external network-to-network interface’ in definition of fibre handover point

36. First, the use of the term ‘external network-to-network interface’ (E-NNI) in the definition of fibre handover point suggests that POIs are intended to be prescribed at layer 2 handover points.

36.1 The purpose of POIs is to establish fibre handover points. A fibre handover point is the E-NNI (or equivalent facility) located at the specified POI. The term E-NNI is not defined in the Act but is used throughout UFB documents¹⁷ in a way that consistently indicates that the E-NNI is where layer 2 services terminate and RSPs interconnect to take over the layer 2 traffic.

36.2 For example, E-NNI is defined in Chorus’ NIPA for UFB 2 as the “External Network-to-Network Interface as defined in the TCF [Ethernet Access Service Description] and the [Wholesale Services Agreement]”.¹⁸ The TCF Ethernet Access Service Description “provides the framework and baseline Product Descriptions for Ethernet Access Services, the layer 2 products and services provided to RSPs under the Government’s UFB initiative”.¹⁹ It describes the E-NNI as:

the physical and logical demarcation point for the service at the Point of Interconnect (POI) and serves as the boundary between the LFC Ethernet network and the Retail Service Provider network which operate as separate administrative domains. The E-NNI will be one or more physical Ethernet interfaces, carrying multiplexed traffic streams from end-users.

¹⁵ Enable Networks, Northpower Fibre, Ultrafast Fibre, Vodafone, Vector and Vital supported the Commission’s approach.

¹⁶ Chorus “Submission on the Commerce Commission’s specified points of interconnection consultation paper” (26 November 2019) at paragraph 10.

¹⁷ UFB documents includes the NIPAs and wholesale service agreements (including documents related to the wholesale service agreements such as service descriptions and operations manuals).

¹⁸ Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Schedule 1: Definitions. ENNI is defined in similar terms in Chorus’ Wholesale Services Agreement, Bitstream operations manual: “External Network-to-Network Interface. This is a MEF standard interface that allows connectivity between two Ethernet networks. It provides the Ethernet demarcation between the LFC and the Service Provider”. Available at <https://company.chorus.co.nz/node/523>.

¹⁹ Now referred to as the UFB Ethernet Access Service Description and last revised on 11 May 2017. See <https://www.tcf.org.nz/industry/workstreams/current-projects/ufb-ethernet-access-service-standard/tcf-ufb-ethernet-access-service-description-for-ufb-layer-2-services-endorsed-june-2017.pdf>.

- 36.3 In this description, the LFC Ethernet network is the network that provides layer 2 services. The E-NNI therefore serves as the boundary between the LFC's layer 2 network and the RSP's network and is where the RSP interconnects to take layer 2 traffic.
- 36.4 Chorus' NIPA for UFB 2 states that "[t]he E-NNI interface in the POI is the point of delivery of Bitstream Services to RSPs".²⁰ Bitstream Services are layer 2 services. In contrast, layer 1 services do not terminate at an E-NNI. They terminate at the "[Central Office] Termination Point within the [Central Office]".²¹
- 36.5 The explicit reference to E-NNI in the definition of fibre handover point therefore suggests that POIs are to be located at an E-NNI, which is where layer 2 services terminate and RSPs interconnect to take over the layer 2 traffic.
- 36.6 We note, however, that the definition of fibre handover point refers to the E-NNI *or equivalent facility*. While the phrase "or equivalent facility" is somewhat ambiguous and may simply refer to an equivalent facility at layer 2 handover points, it might alternatively be read as facilities of the kind located in layer 1 handover points. However, given the further evidence we discuss below, we do not think the latter interpretation is correct.

NIPAs suggest POIs are at layer 2 handover points

37. Second, the NIPAs generally make a distinction between layer 2 handover points, which are called POIs, and layer 1 handover points, which are referred to as being located at a central office.
- 37.1 We consider the NIPAs are relevant to understanding the UFB initiative POIs, as they governed the build and network architecture for the UFB initiative.
- 37.2 Chorus disagreed with our view that the NIPAs indicate that POIs are intended to be prescribed at layer 2 handover points. Chorus pointed to the definition of 'Point of Interconnection' in its NIPA for UFB 2 and submitted that the definition encompasses both layer 1 and layer 2 handover points. We set out below the definition that Chorus cited (in that definition, 'dark fibre wholesale services' refers to layer 1 services; 'other wholesale services' refers to layer 2 services):²²

Point of Interconnection means, in respect of any dark fibre wholesale services, the central office or point of interconnection to the Network and, in respect of all other wholesale services, the point of interconnection to the Network

²⁰ Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Annexure 1: Network Requirements, at clause 5.2.

²¹ Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Annexure 1: Network Requirements, at clause 4.2.

²² Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Schedule 1: Definitions.

- 37.3 As an initial point, we note that the definition contains some ambiguity. While the definition encompasses layer 1 and layer 2 handover points, it nonetheless makes a distinction – repeated elsewhere in the NIPAs – between a central office and point of interconnection. The central office is the handover point for layer 1 services (as well as a POI, which is also a central office), while the point of interconnection is the handover point for the layer 2 services.
- 37.4 In any event, we are wary of relying on one definition in Chorus’ NIPA for UFB 2 to determine what are the UFB initiative POIs. This is particularly so where there are multiple similar terms used in UFB documents (‘POI’; ‘Interconnection Point’; ‘Points of Interconnect’), some of which have meanings which appear to differ from the definition of point of interconnection which Chorus cites above. For example, the term ‘Points of Interconnect’ is used exclusively in relation to the termination point for layer 2 services in Chorus’ NIPA for UFB 2.²³
- 37.5 In these circumstances, rather than focussing on a definition in one of Chorus’ NIPAs, we have read the NIPAs as a whole (and associated documents, such as the wholesale services agreements) to discern the implications for where we specify POIs. We also note that, while the NIPAs are relevant to understanding the UFB initiative POIs, section 231 refers to the UFB initiative rather than the NIPAs.²⁴ This supports our view that it would not be appropriate to focus exclusively on one definition in Chorus’ NIPA for UFB 2.
- 37.6 Our view is that, read as a whole, the NIPAs generally make a distinction between layer 2 handover points, which are called POIs, and layer 1 handover points, which are referred to as being located at a central office. For example:
- 37.6.1 Chorus’ NIPA for UFB 2 states that “[t]he [central office] is the point at which RSPs connect to the Dark Fibre Services. Access to the bitstream services is not available from a [central office], unless that [central office] is also a POI”;²⁵
- 37.6.2 Chorus’ Bitstream Service Description describes bitstream services as terminating at a POI.²⁶ On the other hand, Chorus’ Direct Fibre Access Service (DFAS) Operating Manual describes the service as terminating at the relevant central office.²⁷

²³ Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Annexure 1: Network Requirements, heading of clause 2.5.

²⁴ Spark “Submission on specified points of interconnection consultation paper” (26 November 2019) at paragraph 8.

²⁵ Network Infrastructure Project Agreement between Chorus Limited and Crown Infrastructure Partners (26 January 2017) at Annexure 1: Network Requirements, clause 2.4.

²⁶ Chorus “UFB Services Agreement Bitstream Services: Service Description for Bitstream 2 Accelerate – Reference Offer (June 2017) at clause 5.

²⁷ Chorus “UFB Services Agreement Direct Fibre Access Services (layer 1): Operations Manual for Direct Fibre Access Services (layer 1) – Reference Offer (June 2018) at paragraphs 12.24-12.25. DFAS is a

- 37.7 We therefore consider that the NIPAs also suggest that POIs are intended to be prescribed at layer 2 handover points.

Consistency with scope of FFLAS

38. Third, prescribing POIs at layer 1 handover points would likely exclude intra-candidate area backhaul services (ICABS) from the scope of FFLAS, which we do not consider is the intention of the Act.²⁸
- 38.1 ICABS is a fibre service which connects central offices within a candidate area. For example, ICABS may connect a central office, where layer 1 services terminate, with another central office, where layer 2 services terminate (ie, a POI).
- 38.2 As we noted in the legal framework section of this paper, the fibre handover point (located at the specified POI) defines the upstream boundary of a fibre network. If we were to prescribe POIs at layer 1 handover points, ICABS would be beyond the fibre network, as ICABS is a service that is upstream of layer 1 handover points.
- 38.3 As we stated in our Fibre IMs Draft Decision Paper, as matters stand, we do not think it is necessary or appropriate to include services beyond a fibre network within the concept of FFLAS (with the exception of connection services that are necessary and proximate to the fibre network, such as co-location services at the POI).²⁹ On the basis of this position, if POIs were prescribed at layer 1 handover points, then ICABS would be excluded from the scope of FFLAS because ICABS would be a service that is beyond a fibre network.
- 38.4 However, for the reasons given in the Fibre IMs Draft Decisions Paper, our view is that ICABS are intended to fall within the scope of FFLAS.³⁰ Specifying POIs at layer 1 handover points would be inconsistent with that intention as it would likely exclude ICABS from the scope of FFLAS.
39. Chorus submitted that prescribing POIs at only layer 2 handover points would potentially exclude layer 1 assets which do not form part of the connection between an end-user and a POI from the fibre network.³¹ We note that assets used to supply layer 1 services always terminate at a central office. We regard all central offices

commercial fibre product that connects large commercial users to the network. It is used by RSPs for backhaul and to supply large commercial customers, and by mobile network operators to provide fixed wireless services.

²⁸ ICABS is Chorus' intra-candidate area backhaul service. ICABS is typically used by RSPs and mobile network operators to link their networks to central office layer 1 services, such as DFAS. The other LFCs offer an equivalent product, called Fibre Interconnection Services.

²⁹ Commerce Commission "Fibre input methodologies: Draft decision – reasons paper" (19 November 2019) at paragraph 261.

³⁰ Commerce Commission "Fibre input methodologies: Draft decision – reasons paper" (19 November 2019) at paragraphs 2.62-2.63.

³¹ Chorus "Submission on the Commerce Commission's specified points of interconnection consultation paper" (26 November 2019) at paragraph 24.

(that are not POIs themselves) to be downstream of a POI and therefore layer 1 assets are structurally within the fibre network.³²

Other materials

40. Finally, we note that prescribing POIs at layer 2 handover points would be consistent with other materials relevant to this issue.
41. As we noted earlier in this Reasons Paper, the Select Committee commented on the provisions in the Bill relating to specified POIs. When discussing specified POIs, the Select Committee noted that “[a] feature of the UFB architecture is a single POI per candidate area, driving competition and supporting open access”. This suggests that, in discussing the specified POIs, the Select Committee was contemplating those POIs that would satisfy the single POI per candidate area requirement in the NIPAs. These POIs are at layer 2 handover points.
42. In December 2018, MBIE presented at the Commission’s stakeholder fibre regulation workshop. The presentation included a slide on specified POIs:³³

Specified points of interconnection will be determined by the Commission and published as a notice. This will be applicable to Chorus and LFCs. These points of interconnection (POIs) will be based on existing UFB and UFB extension descriptions, for the first regulatory period.

There are approximately 40 specified points of interconnection currently across New Zealand. The regulations will identify and prescribe particular points of fibre network architecture that serve fibre-end-user premises.

43. MBIE noted that there are approximately 40 specified POIs across New Zealand. This number is relatively close to the number of POIs to be prescribed at layer 2 handover points. In contrast, Chorus submitted that there are over 400 layer 1 handover points in its fibre network.³⁴ This suggests that MBIE also considered that POIs would be prescribed at layer 2 handover points.

Conclusion and implications

44. The weight of evidence indicates that the UFB initiative POIs are limited to POIs at layer 2 handover points and should not be prescribed at layer 1 handover points. This position is consistent with the reference to E-NNI in the definition of fibre handover point, the general distinction in the NIPAs between layer 2 handover points at POIs and layer 1 handover points at central offices, the scope of FFLAS which includes ICABS, and other materials which discuss the issue.
45. Under this approach, specified POIs:

³² Viewed in terms of a hierarchy of nodes, a central office is a node which is downstream of a POI (which is also a node) and is therefore within a fibre network.

³³ MBIE “Arrangements for finalising remaining technical regulatory settings in the Telecommunications (New Regulatory Framework) Amendment Act 2018 (10 December 2018).

³⁴ Chorus “Submission on the Commerce Commission’s specified points of interconnection consultation paper” (26 November 2019) at Appendix D.

- 45.1 define the upstream boundary of the fibre network. This boundary is important as we do not currently think it is necessary or appropriate to include services beyond a fibre network within the scope of FFLAS; and
- 45.2 are the locations where RSPs interconnect to take layer 2 services. All end-users within a UFB geographic area will be accessible from each specified POI for that area.³⁵
46. Submissions from Chorus and 2degrees raised concerns about the implications of this position.
- 46.1 2degrees appeared to be concerned that prescribing POIs at only the layer 2 handover points would exclude the layer 1 DFAS and ICABS from the scope of FFLAS.³⁶ It submitted that the Commission should either specify that the proposed specified POIs are also applicable to layer 1 services or that we should specify layer 1 POIs.³⁷
- 46.2 Chorus submitted that “[t]he identification of different points of interconnection for layer 1 and layer 2 is important because these points determine the scope of the regulated service for each of layer 1 and layer 2 (as the Act regulates particular fibre services, not the network itself)”.³⁸
47. Our view is that layer 1 services (such as DFAS and PONFAS³⁹) and ICABS fall within the scope of FFLAS under the approach of prescribing POIs at the layer 2 handover points.
48. We agree with Spark’s submission that FFLAS “are services that enable access to, and interconnection with, the fibre network and will be available at many points on the network”.⁴⁰ Layer 1 services will be within the fibre network and therefore will be included within the scope of FFLAS.
49. The scope of layer 1 services and their handover points will be determined by instruments other than specified POIs.⁴¹

³⁵ And, as we discuss below, every end-user premises that is located outside of a UFB geographic area, for which the specified POI is the nearest UFB initiative POI (whether on a geographic or network topology basis).

³⁶ 2degrees “Response to Commerce Commission Specified Points of Interconnection Consultation Paper” (26 November 2019) at page 3.

³⁷ 2degrees “Response to Commerce Commission Specified Points of Interconnection Consultation Paper” (26 November 2019) at page 2.

³⁸ Chorus “Submission on the Commerce Commission’s specified points of interconnection consultation paper” (26 November 2019) at paragraph 10.

³⁹ PONFAS is a Passive Optical Network Fibre Access Service. It is referred to in the Act as the “unbundled fibre service”, which is a point-to-multipoint layer 1 service.

⁴⁰ Spark “Submission on specified points of interconnection consultation paper” (26 November 2019) at paragraph 3.

⁴¹ We therefore disagree with Vodafone that the specified POIs are where layer 1 services will be handed over: see Vodafone “Submission on Specified Points of Interconnection” (26 November 2019) at page 4. We also disagree with Spark’s cross-submission that the specified POIs will encompass interconnection

- 49.1 In relation to DFAS, regulations made under section 228 of the Act will describe the service. Those regulations must not, according to clause 15(3) of Schedule 1AA of the Act, be materially different from the terms set out in the NIPAs. It is likely that the handover points for DFAS will therefore be the relevant central offices;⁴²
- 49.2 In relation to PONFAS, the scope of the service will be determined by LFCs' reference offers under the NIPAs. The handover points for PONFAS will be specified as part of those reference offers.⁴³ We therefore do not propose to prescribe POIs for PONFAS, as Vector suggests.⁴⁴
50. RSPs will therefore be able to interconnect at relevant central offices to take layer 1 services, which will be FFLAS.
51. We acknowledge that the definitions of FFLAS and fibre handover point could be read as limiting FFLAS to those telecommunications services that enable access to, and interconnection with, a fibre network *at the fibre handover point*. Under this view, layer 1 services would be FFLAS only where they terminated at a POI.
52. We do not consider that this is the correct view. The definition of FFLAS is a telecommunications service that enables access to, and interconnection with, a fibre network. As we noted above, we therefore consider that FFLAS is available at many points on the fibre network. Fibre handover points are places where RSPs interconnect with the fibre network to take layer 2 services, but RSPs can interconnect at other points in the network, including at central offices, to take layer 1 services.

Relating end-user premises to POIs

53. In the Consultation Paper, we said that we will identify in the public notice those end-user premises that the POI relates to. We considered this necessary because the definition of fibre handover point makes it clear that each specified POI must be related to an end-user premises.
54. It is also necessary to identify the end-user premises that the POI relates to in order to preserve the single POI per candidate area requirement in the Part 6 regulatory regime. Preserving the single POI per candidate area requirement is implied by the

points for DFAS, ICABS and PONFAS: see Spark "Cross-submission on Specified points of interconnection: consultation (4 December 2019) at paragraph 10. Handover points for those services are determined by the LFCs' reference offers or the section 228 regulations.

⁴² As set out in, for example, Chorus' UFB Services Agreement Direct Fibre Access Services: Service Description for Direct Fibre Access Service – Reference Offer (June 2017): <https://company.chorus.co.nz/sites/default/files/downloads/Chorus%20UFB%20Services%20Agreement%20Direct%20Fibre%20Access%20Service%20Description%20June%202017.pdf>.

⁴³ See, for example, Chorus' UFB Services Agreement Passive Optical Network Fibre Access Services: Service Description for PONFAS – Reference Offer (June 2019): https://sp.chorus.co.nz/system/files/resources_files/PONFAS%20Description%20with%20changes%20sh%20own.pdf.

⁴⁴ Vector "Submission on specified points of interconnection" (26 November 2019) at paragraph 10; Vector "Cross-submission on specified points of interconnection" (4 December 2019) at paragraphs 4-5.

statutory direction to prescribe the UFB initiative POIs. To implement this statutory direction, we need to relate end-user premises to the relevant specified POIs in our public notice.

Main approach to relating end-user premises to POIs

55. Our main preferred approach in the Consultation Paper was, for each specified POI, to specify that its related end-user premises are those end-user premises that are within the POI's associated geographic area/s under the UFB initiative (either as at the date of the public notice or in the future).⁴⁵ This would effectively replicate the approach in the NIPAs.
56. Submissions on the Consultation Paper generally supported this approach. Vital commented that producing a list of all end-user premises related to each POI would be unwieldy and noted that it would require regular amendment as end-user premises are added or removed.⁴⁶ A benefit of our approach is that it enables end-user premises to be added or removed without amending the POI notice.
57. Chorus also supported the approach but noted that the geographic areas associated with POIs will also change, particularly as UFB 2 is still being built. It suggested that it would be sufficient for us to "specify the location of the layer 2 POI it was created to service by referring to the UFB1 candidate area (as all UFB1 POIs are also UFB2 POIs)".⁴⁷
58. We have adopted a modified version of Chorus' suggestion to specify for each POI the UFB 1 candidate area it was created to service. In specifying the associated geographic area for each POI, we will use the name of the UFB 1 geographic area that the POI was created to serve. The use of UFB 1 geographic area names should be familiar to the industry and will therefore promote certainty. However, these names will be defined to include all geographic areas under the UFB initiative that the POI is intended to serve, including UFB 2 and UFB 2+ areas. In this sense, using the name of the UFB 1 candidate area for each POI is a naming convention, intended to refer to all geographic areas that the POI is intended to serve.

Approach where end-user premises is outside UFB geographic area

59. Chorus indicated in its submission that it has end-user premises outside of UFB geographic areas on its network. It said that "it would be artificial – and inconsistent with the way the services are provided – to assign these access points to a notional POI within the UFB initiative".⁴⁸ Instead, Chorus submitted that these end-user premises should be related to a specified layer 1 POI.

⁴⁵ Commerce Commission "Specified points of interconnection – Consultation paper" (12 November 2019) at paragraph 34.

⁴⁶ Vital "Consultation question answers to Specified point of interconnection" (26 November 2019) at paragraph 4.

⁴⁷ Chorus "Submission on the Commerce Commission's specified points of interconnection consultation paper" (26 November 2019) at paragraph 39.

⁴⁸ Chorus "Submission on the Commerce Commission's specified points of interconnection consultation paper" (26 November 2019) at paragraph 36.

60. As we discussed earlier, we do not consider the Act intends us to prescribe layer 1 POIs. As such, end-user premises outside a UFB geographic area cannot be related to a specified layer 1 POI.
61. Our view is that an end-user premises outside a UFB geographic area should be related to the nearest UFB initiative POI (whether on a geographic or network topology basis) such that RSPs can access the end-user premises from a UFB initiative POI. This will ensure RSPs can access all end-user premises on a regulated fibre service provider's fibre network, irrespective of whether the end-user premises is in or out of a UFB geographic area. It will also ensure RSPs do not face additional costs of interconnection to access end-user premises outside a UFB geographic area.

Other issues raised in submissions

62. We received other submissions which are not within the scope of this consultation and Reasons Paper.
63. Spark submitted that we should specify the minimum technical handover functionality at specified POIs – for example, that the full range of high capacity handovers are available at specified POIs. This issue, which concerns service levels, may be considered as part of our other Part 6 regulatory projects.
64. Vodafone submitted that the Part 6 regulatory regime should produce better publicly available data on the remaining physical handover capacity at each POI.⁴⁹ According to Vodafone, this would provide it with a better basis to make decisions on what equipment to install at a POI. We will address this issue as part of our other Part 6 regulatory projects.

Our ongoing role to prescribe POIs

65. Several submissions addressed issues relating to our ongoing role to prescribe POIs:
- 65.1 Spark submitted that we should provide further guidance on the intended process for prescribing additional specified POIs, noting that it anticipated requesting additional handover points in the future for resiliency and traffic management purposes;⁵⁰
- 65.2 Vodafone noted that LFCs are increasingly looking to add new POIs to fibre networks, and discontinue handover services from some of the existing POIs.⁵¹ This may be because the POI is reaching capacity, or it may be because of cost savings they are able to achieve by shifting sites. Vodafone submitted that we not allow for new POIs to be established while physical capacity for the handover service remains at the existing POI. In response to this, Chorus, Enable and Ultrafast Fibre each submitted that there may be credible reasons

⁴⁹ Vodafone "Submission on Specified Points of Interconnection" (26 November 2019) at page 4.

⁵⁰ Spark "Submission on specified points of interconnection consultation paper" (26 November 2019) at paragraph 5(b).

⁵¹ Vodafone "Submission on Specified Points of Interconnection" (26 November 2019) at pages 2-3.

for establishing new POIs where physical capacity remains at an existing POI,⁵²

- 65.3 Chorus explained that fibre networks are dynamic and that it will, over time, need to add or remove POIs for various reasons.⁵³ The main drivers for adding POIs are that capacity at existing POIs needs to be managed to avoid a risky concentration of connections. Chorus submitted that the Commission should exercise its ongoing role to prescribe POIs similar to how CIP has carried out its role. Chorus suggested that CIP has been satisfied about proposals to add or change POIs if the industry has been consulted, as the industry is best placed to determine POI changes.
66. The focus of this consultation process and Reasons Paper is on the first exercise of our power under section 231. Our ongoing role to prescribe POIs is outside the scope of the current process.
67. However, we acknowledge that it is desirable for industry and consumers to understand how we will approach our ongoing role to prescribe POIs. We will therefore consider providing guidance in 2020 on how we will exercise our role.
68. For now, we note that section 231 governs some aspects of how we will prescribe POIs in the future. In particular:
- 68.1 Section 231(3) provides that the Commission may amend or revoke a notice in the way it was made. As such, where we propose to amend or revoke a notice, we will likely need to follow key aspects of our process that we have previously followed, such as a period for consultation. We would, however, tailor the extent of consultation based on the proposed changes to the notice;
- 68.2 Section 231(4) provides that we must not amend a specified POI unless the amendment is for an appropriate technical purpose and is consistent with the purpose in section 162 of the Act. This provision reflects the importance of ensuring that the number and location of POIs are, as a rule, stable over time. This is because investment decisions, such as where to locate interconnection equipment, are based on the location and number of existing POIs. However, we note the thresholds in section 231(4) do not apply to adding new specified POIs.⁵⁴

⁵² Chorus “Cross submission on the Commerce Commission’s specified points of interconnection consultation paper” (4 December 2019) at paragraph 25; Enable “Cross submission on the Specified Points of Interconnection” (4 December 2019) at paragraph 2; Ultrafast Fibre “Cross submission on Commerce Commission Specified Points of Interconnection Consultation Paper” (6 December 2019).

⁵³ Chorus “Submission on the Commerce Commission’s specified points of interconnection consultation paper” (26 November 2019) at paragraphs 41 -51.

⁵⁴ Chorus suggested that the thresholds apply to new POIs: see Chorus “Cross submission on the Commerce Commission’s specified points of interconnection consultation paper” (4 December 2019) at paragraph 25.2.

Attachment A – List of specified POIs

Chorus POIs

	POI identifier	Name	Region	UFB geographic area
1	AR	Ashburton Exchange	Canterbury	Ashburton
2	BM	Blenheim Exchange	Marlborough	Blenheim
3	CH	Christchurch Exchange	Canterbury	Christchurch, Rangiora and Rolleston
4	CPC	Courtenay Place Exchange	Wellington	Wellington
5	DN	Dunedin Exchange	Otago	Dunedin
6	FG	Feilding Exchange	Manawatu-Whanganui	Palmerston North and Feilding
7	FOR	Forrest Hill Exchange	Auckland	Auckland, Pukekohe, Waiheke Island and Waiuku
8	FJN	Frankton Exchange	Waikato	Hamilton
9	GS	Gisborne Exchange	Gisborne	Gisborne
10	GLF	Glenfield Exchange	Auckland	Auckland, Pukekohe, Waiheke Island and Waiuku
11	GM	Greymouth Exchange	West Coast	Greymouth
12	HN	Hamilton Exchange	Waikato	Hamilton
13	HBN	Hastings Exchange	Hawke's Bay	Napier / Hastings
14	IN	Invercargill Exchange	Southland	Invercargill
15	KNG	Kensington Exchange	Northland	Whangarei
16	LVN	Levin Exchange	Manawatu-Whanganui	Levin
17	MS	Masterton Exchange	Wellington	Masterton
18	MDR	Mayoral Drive Exchange	Auckland	Auckland, Pukekohe, Waiheke Island and Waiuku
19	MAW	Marewa Exchange	Hawke's Bay	Napier / Hastings
20	MOD	Mount Eden Exchange	Auckland	Auckland, Pukekohe, Waiheke Island and Waiuku
21	NA	Napier Exchange	Hawke's Bay	Napier / Hastings
22	NN	Nelson Exchange	Nelson	Nelson

	POI identifier	Name	Region	UFB geographic area
23	NU	New Plymouth Exchange	Taranaki	New Plymouth
24	OU	Oamaru Exchange	Otago	Oamaru
25	PM	Palmerston North Exchange	Manawatu-Whanganui	Palmerston North and Feilding
26	POY	Ponsonby Exchange	Auckland	Auckland, Pukekohe, Waiheke Island and Waiuku
27	PRM	Paraparaumu Exchange	Wellington	Paraparaumu / Kapiti
28	PRO	Porirua Exchange	Wellington	Wellington
29	QST	Queenstown Exchange	Otago	Queenstown
30	RO	Rotorua Exchange	Bay of Plenty	Rotorua
31	SOD	South Dunedin Exchange	Otago	Dunedin
32	TPO	Taupo Exchange	Waikato	Taupo
33	TG	Tauranga Exchange	Bay of Plenty	Tauranga
34	TU	Timaru Exchange	Canterbury	Timaru
35	WKW	Waikiwi Exchange	Southland	Invercargill
36	WN	Wellington Exchange	Wellington	Wellington
37	WHK	Whakatane Exchange	Bay of Plenty	Whakatane
38	WR	Whangarei Exchange	Northland	Whangarei
39	WG	Whanganui Exchange	Taranaki	Whanganui

Enable Networks POIs

	POI identifier	Name	Region	UFB geographic area
1	RIC	Riccarton	Canterbury	Christchurch, Rangiora and Rolleston
2	HRB	Hornby	Canterbury	Christchurch, Rangiora and Rolleston

Northpower POIs

	POI identifier	Name	Region	UFB geographic area
1	ALX	Alexander Street	Northland	Whangarei

Northpower LFC2 POIs

	POI	Name	Region	UFB geographic area
1	ALX	Alexander Street	Northland	Whangarei

Ultra-fast Fibre POIs

	POI ID	Name	Region	UFB geographic area
1	HMW	Hamilton West	Waikato	Hamilton, Tokoroa, Cambridge and Te Awamutu
2	HME	Hamilton East	Waikato	Hamilton, Tokoroa, Cambridge and Te Awamutu
3	NPL	New Plymouth	Taranaki	New Plymouth and Hawera
4	WAN	Whanganui	Manawatu-Whanganui	Whanganui
5	TGW	Tauranga West	Bay of Plenty	Tauranga
6	TGE	Tauranga East	Bay of Plenty	Tauranga