1 July 2016

Public version

Cross-submission for Chorus in response to

Section 30R review of the UBA Standard Terms Determination Process and Issues Paper (7 April 2016)

1 July 2016

Chorus

CONTENTS

EXECUTIVE SUMMARY

We offer our comments on submissions from interested parties on the Commerce Commission's *Section 30R review of the UBA standard terms determination, Process and Issues Paper* (*Issues Paper*) released on 7 April 2016.

Major change to the UBA STD is not desired or required. We set out our views on why that is the case.

Nationwide broadband for homes, schools and businesses

The nationwide open access broadband network is key to New Zealand becoming a digital nation. High quality broadband is the fourth utility – an essential service for how New Zealanders work, live, learn and play in an increasingly digital environment.

Our experience in New Zealand to date demonstrates that if supplied, kiwis grow their use and demand. It's all about speed and it's all about data – doing more and doing it faster.

The majority of new fibre connections favour the 100Mbps speed plan. Data usage has substantially increased, with New Zealand households now using an average of 100GB of broadband data every month.[1] Our network does not have data caps.

As the recently released NZ Tech research[2] further demonstrates, there are significant benefits to be realised as we move forward to become a digital nation by increasing our reach and use of our high quality broadband infrastructure.

Our vision is to enable better broadband for all New Zealanders to maximise the potential economic and social benefits from full inclusion in the online future. These benefits come from supplying future-proofed connectivity and services to everyone and making use of it.

Generational change and investment is occurring

This generational broadband infrastructure and services transformation is a journey. The fibre to the home roll out to a large part of New Zealand is over half way built. We are also participating in the Government's tender process to extend future proofed fibre to more New Zealand homes and businesses. We are working hard with RSP customers to keep up with the demand for better broadband.

We are evolving copper UBA broadband and managing a range of transition issues over time.

---

1 https://blog.chorus.co.nz/the-case-for-100mbps-or-more/.

2 New Zealand technology Industry Association "From Tech Sector to Digital Nation" (21 June 2016).

Copper broadband is improving to keep up with current demand

Broadband provided by copper UBA in areas where our fibre to the home upgrade transition has not yet occurred, or which are outside current UFB areas, will remain important for some time as consumers continue to grow their digital appetites.

While copper is regulated as a "best efforts" UBA service - with no speed guarantees - it is certainly not static. Network and capacity management of critical broadband infrastructure for New Zealand is what we do every day.

These investments and improvements in copper include the following:

- The average broadband connection speed across the country for copper has nearly doubled over the last four years.
- Faster VDSL copper broadband is available to more people – around 80% of lines follow the band plan change.
- Dynamic line management is in place for VDSL which means improved download speeds and line stability for consumers.
- At wholesale, faster VDSL is the same price as ADSL.
- Kiwi demand for bandwidth has seen average throughput increase nearly eight fold from five years ago. We are continuing to invest to meet that growth with a "no congestion" philosophy – the vast majority of consumers experience a congestion free broadband network.
- We have upgraded 1200 cabinets. We intend to upgrade more cabinets despite the recent completion of RBI.
- The number of broadband waiters has decreased by around 90% since we've been around.

We are pleased many submitters like what we are doing. We've been doing it without being told to do it by regulation.

The Commission's UBA pricing assumed 50% growth in average throughput per annum. For now that supports the investment we are making for ongoing growth.

Visibility of investment to meet traffic growth

Some have said they would like more visibility on our investment to meet throughput growth for the UBA service. That's fine with us.

The vast majority of consumers on UBA broadband have their broadband traffic moved over Ethernet fibre links. 99% of those links have a peak utilisation below 45% and none are over 75%.

We've said we will provide a monthly report on Ethernet fibre link peak utilisation as well as plans for any links with peak utilisation exceeding 95%. We've also said we won't let peak utilisation reach 100%.

If it's necessary to prescribe this, we offer suggestions as to how in this submission. It will be important to ensure any prescription doesn't create uncertainty.

Upgrade plans

As we are investing in our network we are also managing the transition out of legacy technologies. We have strong incentives to do so in an efficient and sensible way.

We have not lost sight of the small percentage of broadband consumers who are connected to parts of the network that don't yet have Ethernet fibre links and who potentially experience some congestion.

We will continue to publish upgrade plans through current channels, as we've been providing for RBI, even though RBI itself has completed.

The journey continues with more upgrading to do. There are also pending Government tender process for UFB2 and RBI2.

We do not support a new proposal that the Commission should take on new roles to prescribe network management and to upgrade plans for copper, such as prescribing when and how services move away from ATM technology.

We have upgraded thousands of ATM connections without needing prescription in the UBA STD. We will continue to do so in an efficient and sensible way. It is more important that the UBA STD does not cause delay or issues in moving forwards.

We are not alone in this view. Other submitters also say that an STD is not the place for trying to drive in new investment upgrades.

FPP modelling was recently used to come up with a price for the UBA STD service. That's all it did. It didn't set a plan for delivering the UBA STD service, nor was it supposed to change the regulated service. Submissions suggesting the FPP modelling is somehow something more than what it is are misguided.

Operational issues

A number of operational issues have been raised through this process. None of these raise any compliance issues with the UBA STD. However, they might raise opportunities for industry discussion and potential improvements.

We're open to working on these with RSPs. Some of the issues have been raised before and we have taken them seriously. We have had discussions with RSPs who have raised concerns about whether and how those concerns can be addressed, and in some cases they have been resolved. We are open to individual engagement and/or to an industry

wide approach. The latter might better enable us to prioritise any potential improvements.

Such discussions can be advanced without impacting this process. If any changes are needed, they are more likely to be changes to the Operations Manual, and can be addressed directly between us and RSPs.

Non-recurring charges

This process appears to have opened up new submissions about reducing charges or shifting costs. We support balanced incentives and believe the Commission will have already prescribed them in its UBA STD.

We have clear incentives to minimise provisioning and fault charges – following the FPP process, our actual costs are higher than those we can pass on to RSPs. The current charges also, correctly, provide incentives for RSPs to manage provisioning and faults efficiently.

Many of the changes proposed may drive inefficient RSP behaviour, such as incorrect ordering practices, or reduce the incentive to carry out reasonable fault investigations on their networks or CPE before calling us. It appears that some of these proposals don't really contribute to improving consumer experience.

Other

We already commercially offer a 10 GigE handover at a price around the same level as the Commission's FPP modelling. There is therefore no issue on availability or pricing.

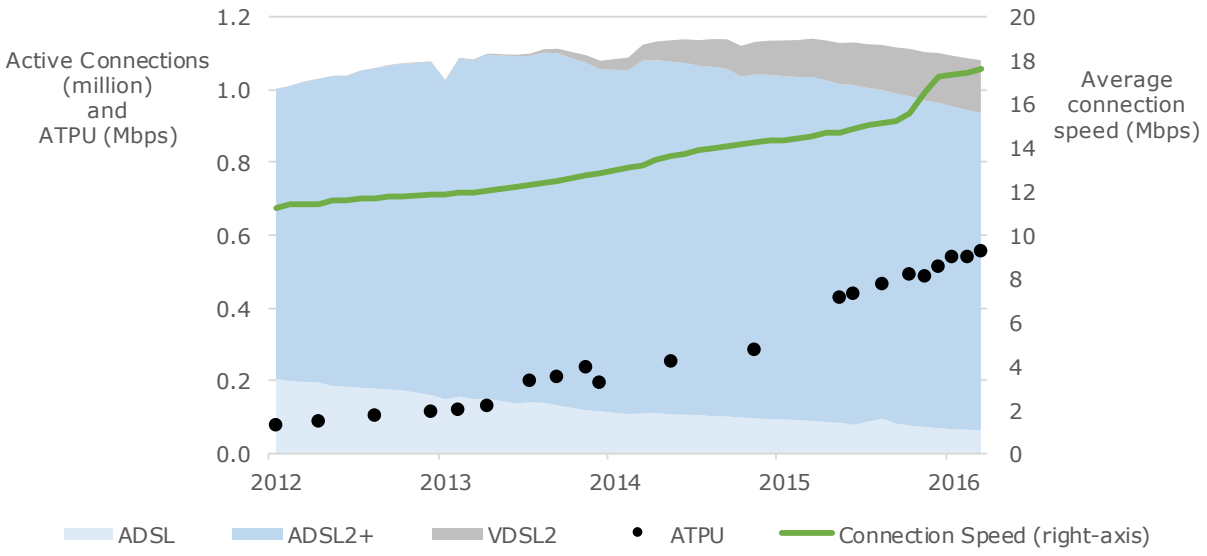
PART ONE – INVESTING TO MEET THROUGHPUT GROWTH

Overview

1 In this Part of our submission, we set out our proposal to provide the industry with confidence that we are growing, and will continue to grow, capacity in the UBA service to meet bandwidth growth.[3]

2 We have invested to meet throughput growth and to generally improve the full-speed/full-speed UBA service since it was introduced, and continue to do so. Figure 1 shows the significant growth in average broadband connection speed and throughput (measured in terms of Average Throughput per End User: *ATPU*) supported by our investment over the last four years.

Figure 1: Broadband connection speeds and throughput (copper network)



3 Submissions received on the Issues Paper and the comments from RSPs at the Commission's workshop appear to endorse the level of service our UBA service currently provides.

4 Some submitters want more transparency around the investment to meet bandwidth growth. We propose that:

4.1 we report monthly on Ethernet fibre link peak utilisation as well as investment plans/status for any of those links with peak utilisation exceeding 95%. We think that peak utilisation is the right measure of investment for growth – if an

[3] Spark "Section 30R review of the UBA standard terms determination: process and issues paper" (submission to the Commerce Commission, 5 May 2016) at 1; 2degrees "Section 30R Review of the UBA STD: Process and Issues Paper" (submission to the Commerce Commission, 5 May 2016) at 1; Vodafone "Chorus UBA: Non-price terms" (submission to the Commerce Commission, 5 May 2016) at 2.

Ethernet fibre link is not congested, then, by definition, throughput has been allowed to evolve; and

4.2 if an STD commitment is required, that the STD require that peak utilisation will not reach 100% where UBA is provided over an Ethernet fibre link unless exceptional circumstances exist. This is the standard we manage the network to. We are happy to have this reflected in the STD.

5 We think this is the best way to provide confidence to the industry that our investment will continue. It is simple, reflects how investment to meet demand growth is actually managed by our network planners, and avoids entangling the Commission in setting prescriptive service levels around averaged or per line throughput per end user over any given period.

The current service and investment planning

6 The UBA service provided by us has the following characteristics:

6.1 Full Speed/Full Speed, where the achieved speed varies per line, depending on a number of factors – including distance from the exchange/cabinet, technology used (e.g. VDSL, ADSL), and equipment at the broadband consumer's premises;

6.2 no guarantees on speed, but generally the maximum speed on a line will equal the maximum throughput;

6.3 the (nationwide) average throughput per-user is around 575 kbps; and

6.4 throughput varies on a per line basis. Customer-experienced throughput will also be affected by the premises' wiring, broadband consumer premises' equipment (*CPE*), the RSP's network, and destination web sites.

7 Good capacity planning is part of our DNA. Our network planners develop forecasts of expected bandwidth growth to anticipate demand. We have, through the FPP process, given the Commission visibility of our nationwide forecasts. For network planning purposes, however, bandwidth demand is also forecast on a regional level (in collaboration with RSPs) in order to build and provision network capacity before it is required. Any additional traffic, movement of traffic or handovers must be planned in advance in order for both Chorus and RSPs to meet demand.

8 Forecasts are, however, only that. Our experience is that network investment is dynamic, requiring monitoring of network performance against demand and managing resources as best as we can to ensure so far as is possible that investments are made to meet growth.

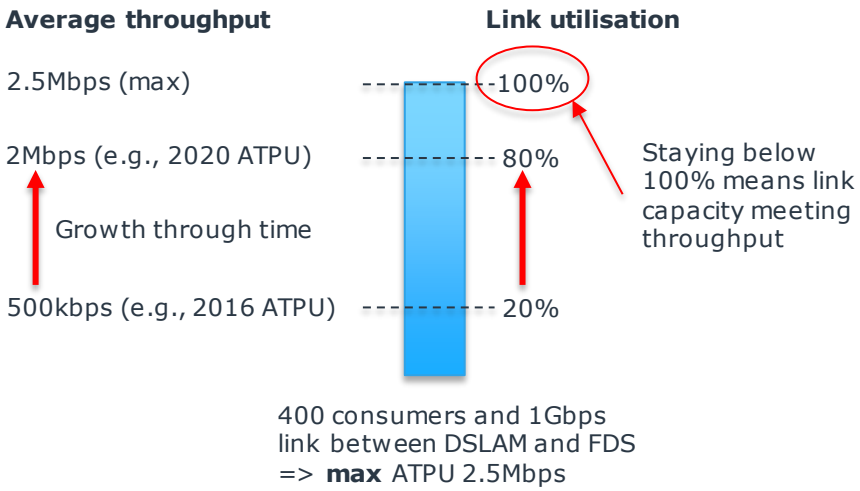
9 To ensure that our Ethernet UBA network is capable of meeting growing throughput demand, we monitor the performance of Ethernet fibre links between DSLAMs and the first data switch (*FDS*). These links account for around 98% of UBA consumers and

therefore the majority of UBA traffic. We use this information to assess current link status and to inform decisions to augment capacity well before it is required.

10 Where the UBA service is provided over a DSLAM with Ethernet fibre link to the FDS, throughput is primarily constrained by the capacity of the fibre link between the DSLAM and FDS. We plan investment and manage this capacity to maintain suitable headroom between demand and capacity on each link (utilisation). The network is designed to meet bandwidth needs at busy times in order to maintain this headroom. We refer to this as a "congestion free" network or link.

11 The relationship between throughput and capacity is explained by way of a simplified example in Figure 2. Take, for example, a 1 Gbps fibre link between a DSLAM and FDS. If 400 broadband consumers are served from the DSLAM, and the peak throughput within a month is 0.2 Gbps, the ATPU for that level of throughput is 500 Kbps. In terms of throughput growth, ATPU can grow to 2.5 Mbps (assuming no broadband consumers are added) before the link is no longer capable of meeting the combined ATPU of all broadband consumers served off the DSLAM.

Figure 2: Example of relationship between average throughput per user and link capacity



12 To avoid a situation where a link reaches 100% capacity, our policy is to react to links for augmentation well before they reach this level of utilisation. The precise level at which we act depends on the nature of the link concerned: for example, there are links that we know need high care because of accelerated growth and with regard to which we act if a low level of capacity is reached.

13 While it is possible for certain links to reach 100% capacity for limited periods of time – for example due to unplanned outages or unanticipated demand surges – we generally can resolve these issues in a reasonable period of time.

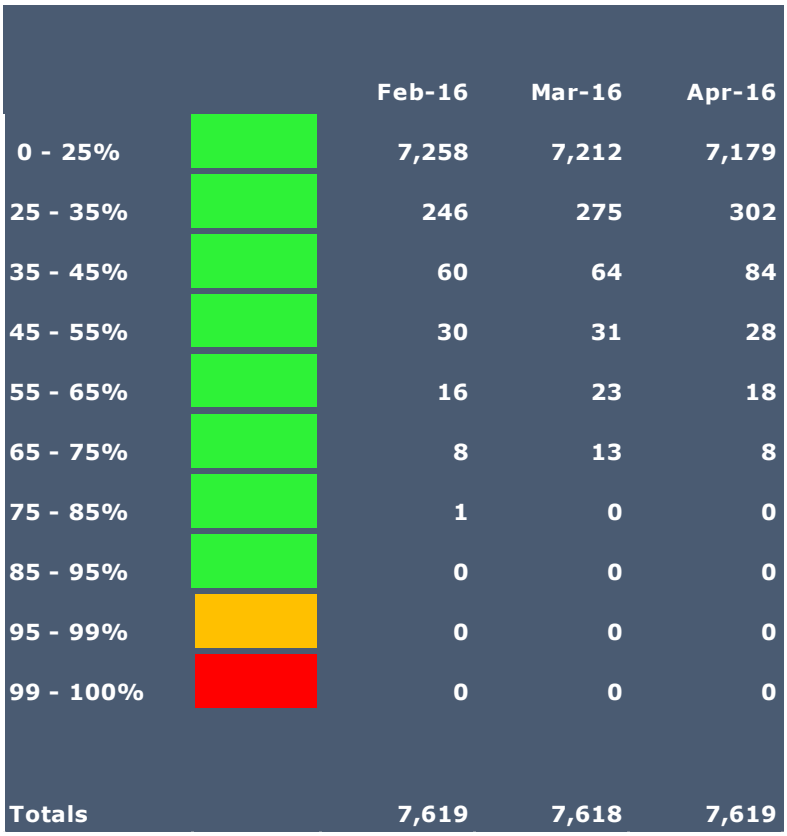
Proposed utilisation reporting (Ethernet fibre links)

14 Accordingly, we think that the best way to ensure confidence that the UBA service is being managed for growth is to improve visibility of link utilisation. Essentially, this is about giving RSPs and the Commission visibility of the same information that our network planners monitor to make investment decisions to support bandwidth growth.

15 We propose providing a monthly dashboard that indicates the number of Ethernet fibre links on the UBA network at different levels of utilisation (e.g., less than 25%, 25% to 35%, and so forth). Utilisation on a link is the highest 15 minute throughput in the month divided by the link capacity.

16 An illustrative example of the proposed dashboard is set out below:

Figure 3: Proposed Ethernet fibre link utilisation dashboard



	Feb-16	Mar-16	Apr-16
0 - 25%	7,258	7,212	7,179
25 - 35%	246	275	302
35 - 45%	60	64	84
45 - 55%	30	31	28
55 - 65%	16	23	18
65 - 75%	8	13	8
75 - 85%	1	0	0
85 - 95%	0	0	0
95 - 99%	0	0	0
99 - 100%	0	0	0
Totals	7,619	7,618	7,619

17 We would provide additional reporting on any links with utilisation exceeding 95%, along with our network plans for those links. This approach aligns with our internodal reporting which we already carry out. We report on the internodal links, with RSPs informed via our customer website[4] of any links that exceed 95% utilisation.

[4] https://customer.chorus.co.nz/network-capacity-report.

18 We do not propose to report on utilisation of fibre links between ATM DSLAMs and FDS or non-fibre links, which predominantly consists of the remainder of the ATM network. Part 2 addresses the ATM network in more detail.

Proposed STD amendments

19 If prescription is necessary then we propose the following amendments to the STD:

19.1 adding a statement to the service description that peak utilisation will not reach 100% where UBA is provided over Ethernet fibre-links, unless exceptional circumstances exist;

19.2 requiring us to provide on our customer website a report updated at least monthly that comprises an aggregated table of peak utilisation for Ethernet fibre links,[5] and the plan and status of any links with utilisation exceeding 95%). This can be achieved by amending the Operations Manuals to require that we provide such a report.

20 Our proposed drafting is set out in **Appendix A** to this submission.

21 We do not support the alternative proposals advanced by some RSPs. We think that our proposed amendments best meet the concern identified by RSPs that we have a measurable commitment to continue to invest in the UBA network, while providing a simple, clear and predictable regulatory structure. Importantly, our proposal doesn't try to anticipate specific demand or technology requirements across the network, but instead uses the metric that our network planners use to determine whether investment is required to meet growth in throughput demand.

22 There are real challenges in converting an average throughput growth forecast (such as that modelled by the Commission in the FPP process) into a per line throughput expectation. The nature of an average is that some lines will experience higher average throughput than others. There is also a very real risk that the forecast throughput growth will be different from the actual throughput growth as noted by RSPs at the Workshop. Rather than prescribe that forecast as a target (and probably get it wrong), our proposal will enable the Commission and RSPs to monitor whether we are investing in the UBA service to meet that evolving bandwidth growth.

23 We also do not support changing the minimum throughput requirement. If it were to be updated, the risk is that it would quickly become out of date anyway, and would need to take into account the fact that there are some lines today that only achieve low throughput (ATM network). We have commented separately on the ATM network in Part 2 of our submissions.

[5] Links are fibre links between DSLAM and FDS and exclude non-fibre links and ATM. Peak utilisation on a link within a month is the highest average 15minute traffic volume on a link divided by its capacity.

PART TWO – ATM NETWORK

Overview

24 In this Part of our submissions, we explain why we do not support suggestions that the Commission should take on new network management and investment roles.

25 There appears to be broad agreement between interested parties that the STD should not require us to upgrade its ATM network.[6] We agree: an STD cannot require investment to achieve service standards that are not reasonably technically or operationally practicable, having regard to our network as it exists today – as confirmed by the limits on the special access principles in the Act.[7]

26 The ATM network is legacy technology that supports bitstream services to some, predominately rural, broadband consumers. We are actively replacing ATM DSLAMs. There are around 19,000 broadband consumers on this network, representing about 2% of all broadband consumers.

27 We upgraded more than 1200 cabinets serving over 100,000 consumers across New Zealand as part of the RBI. While the RBI is now complete, we remain committed to continually improving broadband in rural New Zealand. The remaining connections supported by ATM technology get more challenging the further you go out: because of where they are located, the ATM backhaul and cabinet replacements are expensive (due to the civil work required). But we will continue to invest where it is economic to do so. For example, as part of this commitment, we scheduled 140 cabinets for upgrade in June as part of our business as usual work. We plan to upgrade a number of cabinets by the end of the year, improving service for around 4500 broadband consumers, and reducing the number of consumers on the ATM network by a quarter.

28 Investment is incentivised by the price terms (now set by the FPP process), to which we are responding, as well as other government initiatives. In this area, it is significant that much – but not all – recent investment is a result of specific Government policy initiatives to improve broadband in rural areas. The Government is currently considering whether to directly incentivise further investment in these areas.

29 Any changes to the service description in the UBA STD therefore need to be carefully considered to ensure that we are not required to provide a service that the network is not technically or operationally able to provide. In particular non-fibre DSLAM links need to be excluded if UBA is specified to be congestion-free.

30 We do need to be able to migrate away from legacy technologies. We think there are a number of minor, largely technical, changes that can be made to facilitate this and to make the STD as technology neutral as possible within the framework of the service description. We think that the s 30R review provides a good opportunity to amend the

---

6 2degrees (5 May 2016) at 4; Vocus "Section 30R review of the UBA standard terms determination" (submission to the Commerce Commission, 5 May 2016) at [55]; (5 May 2016) at 12.

7 Telecommunications Act 2001, Schedule 1, Clause 6(1)(a).

STD to retain the specific detail while ensuring it does not constrain withdrawal of legacy technologies, as set out in **Appendix A**. In particular the amendments:

30.1 add a provision to the Price List to clarify that the presence of technology specific prices (such as for STM-1 and STM-4 Handover Connections) does not give rise to an obligation to use that technology; and

30.2 amend Appendices C and G of the Operations Manual (which set out, respectively, the technical interface specification and optical fibre specification in a manner that is technology specific) to be sample specifications with actual specifications to be notified by us to the RSP.

31 In addition, it would be helpful to have a process by which we can withdraw legacy technologies and upgrade all affected connections. These potential changes are also set out in **Appendix A**.

Transparency of investment plans

32 We will continue to provide forward looking upgrade plans for cabinets/fibre links as we did for the RBI programme. This information is located on our customer website[8] and encompasses all of the spreadsheets, shapefiles and communications material we are releasing on our network upgrades. For example, the "broadband coverage report" provides information on ADSL2+, VDSL2, EUBA and BUBA coverage by exchange and cabinet, and is generally updated monthly. This provides visibility of our investment in replacing ATM technology.

33 Transparency in this area needs to recognise that detailed investment plans are commercially sensitive. Accordingly, it would not be appropriate to require us to disclose forward looking investment plans, as this would have the potential to:

33.1 place us at a competitive disadvantage by enabling network competitors (including those deploying wireless and mobile technologies) to target areas with the knowledge of our investment plans; and

33.2 discourage network competition in areas which we are committed to invest in.

34 Accordingly, for these reasons, we do not support Spark's proposal that that we should be required to commit to time bound plans for replacement of the ATM network.[9]

Incentives to invest

35 While there appears to be general agreement between interested parties that the STD should not require us to upgrade our ATM network,[10] Spark has suggested that the STD

8 https://customer.chorus.co.nz/network-upgrade-reports-rollout-addresses-and-network-shape-files/network-updates/reports-ufb-rbi-and-copper-service-availability.

9 Spark (5 May 2016) at 11.

10 2degrees (5 May 2016) at 4; Vocus (5 May 2016) at [55]; Vodafone (5 May 2016) at 12.

should ensure that we have incentives to retire the ATM network.[11] The reality is that we already face material incentives to retire the ATM network that are significantly greater in force than that which could be achieved by the proposals put forward by RSPs. Equally, we are concerned that some of the changes may reduce incentives on RSPs to innovate and invest in encouraging broadband consumers to migrate off the ATM platform.

36 The Commission has set a price which is geographically averaged and is intended to incentivise efficient investment up to a particular service level.[12] We are actively managing the retirement of legacy technology in our network where it is efficient to do so in accordance with that price signal. This is what any rational network operator operating in accordance with best practice would do. But the STD should not be modified to mandate significant new unfunded investment by setting nationally applicable standards that our network cannot meet. The standard access principles set out in Schedule 1 of the Act which apply to the UBA service are expressly limited to reflect this: access may be limited by "*reasonable technical and operational practicability having regard to the access provider's network*".[13] Accordingly, the Commission is not permitted by the Act to set an STD which requires access that is beyond the level able to be achieved by Chorus' network.

37 We want to bring great broadband to all New Zealanders and we acknowledge the difficulty for those living in remote parts of New Zealand who aren't getting a great broadband experience yet. But the STD is not the vehicle to drive investment. Investment is, and should be, a policy decision for government, as has been reflected in successive policy initiatives to fund new investment in these areas.

38 As our existing investment programme indicates, we already face significant incentives to invest in the replacement of the ATM network. These incentives include:

38.1 our commitment to delivering better broadband to New Zealand;

38.2 network development from other infrastructure providers, including wireless access providers such as Vodafone, through the RBI initiative; and

38.3 our desire to minimise our costs relative to the regulated price. **[**

].

39 We are also upgrading legacy network infrastructure as part of normal asset replacement practices. For example, at Cooks Beach, the copper link was reaching

11 Spark (5 May 2016) at 6.

12 Commerce Commission "Standard Terms Determination for the designated service Telecom's unbundled bitstream access" (12 December 2007) at [X36].

13 Telecommunications Act 2001, Schedule 1, Clause 6(1)(a).

capacity and was unreliable. Replacing the link with like-for-like would not only have meant retaining existing legacy equipment, but was also a logistical challenge because land access over which the copper link passed had changed such that a completely different route would have been required. Instead, we are building an Ethernet fibre link and installing a new DSLAM that will replace legacy copper assets, and give Cooks Beach broadband consumers a far better broadband experience.

40 In its submissions,[14] Spark has identified some charges (which it characterises as non-price terms) that it says are not aligned with incentives to replace the ATM network. These include:

40.1 RSPs paying only a single handover connection in an Exchange with both ATM and Ethernet-based connections where the RSPs' existing Ethernet handovers have sufficient capacity for traffic; and

40.2 BUBA handovers only incurring distance steps from the BRAS handover (logical FDS), and clarifying that throughput charges are not permitted.

41 Practically, given the incentives that exist for us to upgrade the ATM network, the potential to obtain revenue from a second handover connection is immaterial to investment decisions we are required to make. However, we are concerned that removing handover connections would remove incentives on RSPs to migrate broadband consumers to modern technologies. Put another way, at present we have no power to compel RSPs to adopt modern technologies where they are available. The existence of a second handover charge therefore provides an, albeit modest, financial incentive on RSPs to move broadband consumers away from ATM-based connections to Ethernet-based connections where this is available.

42 Spark's second proposal is that the UBA STD should require us to provide free transport for ATM traffic to a BRAS location. We disagree with this proposal: the STD is clear that, where the broadband consumer is not in the same coverage area as the RSP's handover point, then the RSP must purchase backhaul.[15] There are fewer locations that traffic can be handed over as ATM due to the legacy equipment needed. The need to purchase backhaul can be avoided by using Ethernet handovers, and some RSPs do this. Free transport to ATM handovers would create an incentive on us to preserve ATM handover locations (to minimise free transport) and on RSPs to preserve ATM connections (to maximise free transport).

Relevance of FPP

43 Another theme of some submissions is that enabling us to continue to manage the decommissioning of the ATM network is inconsistent with the outcome of the FPP process. We think that particular care is required in translating hypothetical modelling parameters to enforceable obligations for service delivery.

[14] Spark (5 May 2016).

[15] UBA Service Description clause 3.11

44 The MEA model developed assumed average throughput on each connection. While it is easy in a hypothetical modelling exercise to assign the same throughput to each end user, the reality of any network is that there will be a range of performance. Broadband consumers on services supported by ATM technology are likely to be at the lower end of the range, but many connections are delivering performance well above the average modelled in FPP. We dimension our network based on actual demand for throughput, not to meet a statistical average that may not occur anywhere.

45 It is also difficult to directly translate the Commission's modelling assumptions to ATM-based delivery. The UBA price is derived by a combination of the UCLL price (modelled based on a FTTP network) and the UBA increment (modelled as an Ethernet-based connection over our FTTN network).[16] Substantial capital contributions were deducted from the fixed costs of network deployment in rural areas on the basis that a rational network operator would seek capital contributions from RSPs or broadband consumers to fund deployment of network in those areas.[17] The Commission applied this approach in a manner that assumed that replacement assets would also be funded by capital contributions.[18] In these circumstances, we should not be compelled to upgrade our network by investing in replacement assets in order to recover only the monthly charge.

STD changes to help replace legacy technology

46 As discussed above, we are in the process of upgrading legacy parts of the network, greatly improving the broadband experience for consumers. There are some aspects of the STD that make this difficult. We need to be able to:

46.1 stop selling legacy connections when newer, better technology is available. At the moment we are arguably obliged to provide ATM based UBA where an access seeker requests ATM service, even though Ethernet based UBA is also available. This makes retirement of ATM equipment difficult. Allowing access seekers to pick the technology over which UBA is delivered risks entrenching legacy technologies. We've described changes that reinforce the technology neutrality of UBA and help us move on from ATM below in the section on '*technology specific service specifications*'; and to

46.2 withdraw legacy technologies like ATM and upgrade all affected connections in a sensible way. We think the process set out in section 17 of the UBA Operations Manual for network changes (broadly involving 12 months' notice and us consulting on, and providing, an implementation plan) could be adapted for this purpose with minor changes.

47 Our proposed drafting is set out in the **Appendix A** to this submission.

---

16 Commerce Commission "Final pricing review determination of Chorus' unbundled bitstream access service" [2015] NZCC 38 (15 December 2015) at pages 12 and 13.

17 Commerce Commission "Draft pricing review determination for Chorus' unbundled bitstream access service" (2 December 2014) at [287].

18 Analysys Mason "Submission on behalf of Chorus for UBA and UCLL services draft determinations" (20 February 2015) at [2.2].

PART THREE – NON-RECURRING SERVICES

48 In this Part of our submission, we respond to submissions relating to provisioning and fault event processes and charges.

49 We are committed to delivering great outcomes to broadband consumers in New Zealand. We think that the best way of driving good outcomes for broadband consumers is for the STD to provide balanced incentives to Chorus and RSPs to work together efficiently to resolve provisioning and fault issues. We are actively considering whether there is more information that we can provide to RSPs or further things we can be doing that will improve consumer experience, and we think that it is a good idea for those discussions to continue in the TCF.

50 Given the detail into which some parties have gone on their submissions on this topic, we set out our detailed response in **Appendix B**. What follows is a summary of our overall position.

Transparency

51 We support transparency of our systems for provisioning and fault responses and support the overall intent of giving a better service to broadband consumers. We already provide a lot of information to RSPs, but if there is something more we can provide or provide differently (and it is already available from our systems or is information that we could look to make available as part of future systems upgrades), we are happy to do so subject to any confidentiality or commercial sensitivity considerations.

52 Some of these issues have been raised before and we have had discussions with RSPs about whether and how those issues can be addressed. Where a solution is feasible and appropriate, we have implemented it.

53 We think it is a good idea to continue to discuss the RSPs' specific proposals for transparency: an industry wide forum like the TCF seems appropriate. But, that discussion will need to include a cost-benefit analysis to determine what, and whether, additional information should be made available to RSPs.

54 These discussions can be had without impacting the s 30R process. We have demonstrated a willingness to work with the industry over the last four years and we think it is unlikely any changes to the STD will be required to address RSPs' concerns. In the unlikely event that, following the TCF discussion, changes are identified as being required, they are more likely to be changes that can be made voluntarily or to the Operations Manual, which can be done through the change mechanism in the existing STD.

Non-recurring charges

55 We agree with RSPs that there is a need to ensure there are the right incentives on Chorus and RSPs to ensure efficient use of resources.[19] However, it is important to

[19] Spark (5 May 2016) at 15.

recognise that incentives should apply to *both* Chorus *and RSPs* to behave efficiently. The Commission thought about whether the structure and definition of which non-recurring charges strikes the right balance of incentives when they first set these charges. We believe that balance is still right today.

56 We already have incentives to minimise provisioning and fault costs, because the FPP process set charges for non-recurring services below our actual costs. At the same time, the existence of the charges provides an incentive to RSPs to adopt efficient practices in relation to provisioning and fault questions. We are concerned that many of the changes proposed by RSPs may remove incentives on them to act in an efficient manner, for example with correct ordering practices, or undertaking reasonable fault investigations on their network or CPE before calling us. It appears that some of these proposals – such as requiring us to not only prove that no fault existed on our network but to identify a fault existing outside of our network in order to make a No Fault Found Charge - are simply a cost reduction exercise.

57 Many of the specific proposals raised by RSPs rely on comparisons with the FPP model.[20] We've explained earlier why we think that the FPP model has limited relevance to this review. The appropriate benchmark is efficiency in provisioning and responding to fault events using our systems, not a hypothetical level of efficiency. We also think that the FPP model does not support many of the changes proposed by the RSPs.

58 We consider that these changes are not suitable for TCF resolution – at least, not without further guidance from the Commission.

[20] 2 Degrees (5 May 2016) at 2; Spark (5 May 2016) at 3, 5, 8; Trustpower "Section 30R Review of the UBA Standard Terms Determination" (submission to the Commerce Commission, 5 May 2016) at [4.2.5]; Vocus (5 May 2016) at [27]; Vodafone (5 May 2016) at 10.

PART FOUR – OTHER ISSUES

Overview

59 In this Part of our submissions, we respond to a number of other issues raised by the Commission and parties in their submissions. These are:

59.1 the relevance of s 18 of the Act to the Commission's s 30R review;

59.2 whether the notification provisions for commercial variants of the UBA STD service in clause 10 require amendment;

59.3 the request by some RSPs for the inclusion of a 10 GigE handover connection in the UBA STD; and

59.4 the proposal that the UBA STD should be expressed, where possible, in technology neutral terms.

Section 18

60 The Commission is required to be satisfied overall that its decisions in relation to the STD best gives effect to the s 18 purpose: to promote competition in telecommunications markets for the long-term benefit of end-users. We have provided detailed comments explaining what we consider to be the appropriate interpretation of s 18 in our submissions on the FPP process.[21] In summary:

60.1 when the Commission is considering how best to give effect to the statutory purpose, s 18(1) is of primary importance, but this is informed and explained by s 18(2) and s18(2A);

60.2 the Commission is able to assume that the service description and standard access principles specified for the UBA service are consistent with s 18 (as was the case for the specification of TSLRIC); and

60.3 s 18 may not provide guidance on every decision made by the Commission.

61 For the reasons we gave in the FPP process, we do not believe that s 18 imposes on the Commission an obligation to identify the outcomes that would be achieved in a competitive market. This Spark submission in the FPP process[22] was not accepted by the Commission in its Final Determination,[23] and we think the Commission was right.

---

21 For example, Chorus "Submission on draft determinations for UBA and UCLL services" (20 February 2015) at page 168.

22 Spark "Further draft pricing review determination for Chorus' UBA and UCLL services" (13 August 2015) at [134], [140].

23 Commerce Commission (15 December 2015) at page 164.

62 We also support the Commission's view, given in the Final Determination, that regulatory predictability is consistent with the s 18 purpose statement.[24] In our view this supports a s 30R process and a STD that promotes certainty for us and RSPs.

63 Finally, a s 30R review is concerned with changes to the STD. In contrast, determining the FPP price involved setting the price for the current STD. We acknowledge that where the s 18 purpose would be best served by clarification of a particular matter which was developed in the FPP process, the FPP assumption may be relevant. But the scheme of the Act indicates the price should follow the STD terms and not the other way around.

Commercial variants – STD, clause 10

64 We agree with the Commission that the notification requirement in clause 10 of the UBA STD remains appropriate for reviewing the introduction of commercial variants. The current process appropriately balances oversight with commercial agility. A process requiring prior Commission approval before commercial products could be launched would lose this.

65 It is almost two years since we discussed with the Commission and RSPs our intention to launch the "Boost" range of differentiated commercial UBA services to promote increased choice and competition for broadband consumers. These services were notified under clause 10, following which RSPs expressed different views on the proposals and on what the UBA STD required us to do. The result was we did not proceed with the majority of those proposals. The notification process worked as it was intended.

66 Since Boost, we and the market have moved on. We're looking forward and we're focused on making the UBA service the best it can be as NZ transitions to fibre.

67 We continue to welcome any ideas from RSPs on potential commercial variants and remain open to offering these. However, from the submissions received on this issue and the discussion at the Commission's Workshop, there appears limited interest in variants from RSPs or consumer groups. This suggests that the Commission should not spend substantial effort on reform of clause 10.

68 We also think that the Commission needs to be cautious about moving from a notification requirement, which is consistent with transparency obligations and provides the Commission with opportunity to exercise the various statutory powers it has under the Act (to clarify the STD, commence a s 30R review, or take enforcement steps), to a more prescriptive regime that requires Commission approval before a commercial variant is introduced. We don't think this is consistent with the Act. That is:

68.1 the Act enables the Commission to prescribe STD which set the terms on which we must provide the regulated service;

[24] Commerce Commission (15 December 2015) at page 56.

68.2 the Commission has power to make further STDs, commence reviews of existing STDs under s 30R or clarify existing STDs;

68.3 however, the Commission does not have power to foreclose commercial offerings (which are specifically contemplated by s 30S of the Act). Setting a process in an STD which purports to regulate how we can offer services which fall outside the STD goes beyond what the Act contemplates for an STD.

69 Similarly, we don't think it is appropriate for the STD to require us to provide new features of the service which are not specified in the STD at an RSP's request.[25] Again, it is for the Commission to set the terms of an STD which sets our obligation to supply. If RSPs want a service with additional features, this can be the subject of commercial negotiations in the normal way.

10 GigE handover connection

70 We do not think it is necessary to amend the STD to include a 10 GigE handover connection.[26] This is a service that we already offer commercially, at a price that we understand is around the same level as the TSLIRIC price of the connection modelled by the Commission 6 months ago in the FPP process.[27]

71 We offer a 10 GigE service commercially and are happy to continue to do so. We are aware that RSPs may have questions around availability and we are happy to discuss this, and any other issues that we are not aware of, with RSPs and are confident that a commercial solution can be found.

72 If the Commission decides that a 10 GigE handover should be in the STD, then the price of the service must be based on TSLRIC, as required by the Act. It would be inappropriate to adopt a shortcut to this aspect of the service, such as adopting international or other benchmarks, such as the price for a 10 GigE handover connection on our UFB network. The price for that handover connection is not cost-based but instead was negotiated commercially with CFH as part of a broader arrangement on price for the range of UFB services. It is therefore not appropriate to take one element of that broader commercial arrangement and rely on it as a proxy for a TSLRIC-based price.

73 We understand that the Commission's FPP-modelled price is a fully developed TSLRIC cost, based on the information collected and analysis carried out in the FPP process. As the Commission has this figure to hand, there is no need to revisit the pricing.

74 If a 10 GigE handover option is added to the UBA STD, our obligation to provide a 10 GigE handover option should be limited to a pre-defined list of sites. We suggest this

[25] Spark (5 May 2016) at 10.

[26] Cf Spark (5 May 2016) at 12; 2degrees (5 May 2016) at 1; (5 May 2016) at [6.1]; Vocus (5 May 2016) at [61]; (5 May 2016) at 13.

[27] Note that the exact TSLRIC price confidential.

pre-defined list of sites is limited to 43, including the 30 UFB points of interconnect, rather than all 104 potential UBA handover sites.

75 This is because:

75.1 we do not plan to build network capacity to support 10GigE handovers at each potential UBA handover site. This would be network overbuild, as there is no need (or demand) for 10 GigE handovers at some sites;

75.2 we do plan to build network capacity to support 10 GigE handovers where there is demand for it. It makes sense that our obligation to provide a 10 GigE handover aligns to the 30 UFB points of interconnect. These are the areas that have the highest broadband density and are the most likely areas that RSPs will want a 10 GigE handover; and

75.3 if RSPs want to order a 10 GigE handover at a site outside the pre-defined list, they can do so, however there will need to be sufficient demand and a flexible lead-time from order to provisioning that enables us to build the capacity to support a 10 GigE handover at that site. The UBA STD Operations Manual already contemplates a lead-time of 3 to 6 months if equipment is not available. This will need to be extended if inter-nodal build is required in addition to hardware upgrades. There will be some sites where it is difficult to justify building the capacity to support 10 GigE handover at standard pricing.

Technology specific service specifications

76 There appears to be broad agreement between all parties that the STD should be technology neutral.[28] This enables innovative and efficient technologies to be adopted, and older technologies retired, without requiring amendments to the STD. We should be free to withdraw technology, and upgrade connections, where a superior alternative is available. The changes described in this section will mean that consumers get better broadband sooner by ensuring we're able to support their experience using up-to-date technology.

77 In the clarification to the UBA STD of 19 December 2011 the Commission stated that "*it is the service that is subject to regulation and not the technology of delivery of the service that is regulated*."[29] We agree and think there is scope to improve the STD by reinforcing its technology neutrality and ensuring we are able to manage our network and technology life cycles efficiently.

78 Accordingly, no amendments are required to the UBA STD to clarify that VDSL is included in the regulated service:[30] we provide regulated UBA over VDSL technology.

---

28 2degrees (5 May 2016) at 1; (5 May 2016) at [49]; Vodafone (5 May 2016) at 5; InternetNZ "Section 30R review of the UBA standard terms determination" (submission to the Commerce Commission, 5 May 2016) at [3.19].

29 Commerce Commission "Final clarification of the Standard Terms Determination on Chorus's Unbundled Bitstream Access Service" (19 December 2011) at [17].

30 Spark (5 May 2016) at 10.

Attempting to "lock in" VDSL into the UBA will inevitably limit the adoption of future technology – today's VDSL is tomorrow's ATM.

79 Although the current UBA STD is generally consistent with our preferred approach, there are a number of areas where particular technology is specified. This technology specific detail may be useful where these technologies are employed but it should be made clear that the presence of technology specific information does not give rise to an obligation to use, or make available, that particular technology. The alternative would be to remove technology specific content from the STD, so that it specifies the expected service outcome rather than the specific technical design input.

80 The proposed amendments to the STD set out in **Appendix A** retain the specific detail while ensuring it does not constrain withdrawal of legacy technologies. In particular the amendments:

80.1 add a provision to the Price List to clarify that the presence of technology specific prices (such as for STM-1 and STM-4 Handover Connections) does not give rise to an obligation to use that technology; and

80.2 amend Appendices C and G of the Operations Manual (which set out, respectively, the technical interface specification and optical fibre specification in a manner that is technology specific) to be sample specifications with actual specifications to be notified by us to the RSP.

81 In addition, it would be helpful to have a process by which we can withdraw legacy technologies and upgrade all affected connections. As noted above in the section on ATM, the process set out in s 17 of the UBA Operations Manual for network changes could be adapted for this purpose with minor changes. These potential changes are set out in **Appendix A**.

82 It would also be useful to have an explicit statement in the STD to make it clear that we aren't required to maintain legacy technologies at the request of access seekers. This would, for example, clarify our ability to grandfather ATM based UBA where Ethernet based UBA is available. The Commission could add a provision to the Service Description setting out that the type of DSL technology used to deliver the UBA service as determined by us. There might be other ways of ensuring legacy technologies are not entrenched and we're interested to hear about alternative ways the STD terms might be changed to achieve this.

APPENDIX A: SUGGESTED CHANGES TO THE STD

This appendix sets out in detail our proposed changes to the STD documents.

LINK UTILISATION REPORTING AND COMMITMENT

Service description

Add to the Service Description the following new clauses after existing clauses 3.13 and 4.11 (these could be new clauses 3.14, 3.15 and 4.14, 4.15 with other clause numbering adjusted accordingly; or 3.13A, 3.13B and 4.11A, 4.11B to avoid disrupting cross referencing):

3.13A Where the Basic UBA Service does not use ATM and is supplied using a fibre-based LAP, the Utilisation on that LAP will not, other than in exceptional circumstances, reach 100% for any 15 minute period in any month.

3.13B For the purposes of clause [3.13A], exceptional circumstances include (without limitation) a significant and temporary increase in End User demand in a Coverage Area that does not reflect the reasonably expected ongoing End User demand in that Coverage Area.

…

4.11A Where the Enhanced UBA Services are supplied using a fibre-based LAP, the Utilisation on that LAP will not, other than in exceptional circumstances, reach 100% for any 15 minute period in any month.

4.11B For the purposes of clause [4.11A], exceptional circumstances include (without limitation) a significant and temporary increase in End User demand in a Coverage Area that does not reflect the reasonably expected ongoing End User demand in that Coverage Area.

Also add the following definition to clause 1.3 in alphabetical order:

Utilisation *means the highest throughput during any 15 minute period divided by the capacity of the fibre-based LAP.*

Operations Manual

Add to the Operations Manual a new section [18] "*DSLAM Link Utilisation Reporting*"

18.1 Chorus will, each month, make available on a website accessible by the Access Seeker a report showing the Utilisation of fibre-based LAPs used to provide the UBA Service in the preceding month. This report will:

(a) Set out in aggregated increments the Utilisation (as defined in the UBA Service Description) of fibre-based LAPs in the preceding month (except where ATM is used);

(b) Specify any instances in which Chorus has relied on the exceptional circumstances exception in clauses [3.13A or 4.11A] of the Service Description and briefly explain the basis for such reliance;

(c) *Include plans for each LAP where the report shows Utilisation is greater than 95%.*

TECHNOLOGY NEUTRALITY AND RETIREMENT OF LEGACY TECHNOLOGY

Service description
Add a new clause [2.5] to the Service Description as follows:

2.5 *The type of DSL technology used to deliver the UBA Service is determined by Chorus.*

Price List
Add a new clause [1.7] to the Price List:

1.7 *Some items in this UBA Price List relate to specific technologies (e.g. STM-1 and STM-4 handover connections). The type of technology used to deliver the UBA Service is determined by Chorus and technology specific prices apply where Chorus has chosen to make that technology available. Chorus is under no obligation to use, or make available, a particular technology because it appears in this Price List.*

Operations Manual
Make the following changes regarding the Technical Interface specification to ensure the UBA service is technology neutral:

- Change the definition of Technical Interface in Appendix A of the Operations Manual to:

  Technical Interface means the technical interface specification needed to connect to the UBA Service as notified to the Access Seeker by Chorus. Sample technical interface specifications are set out in Appendix C.

- Change clause 5.2.3 of the Operations Manual to read:

  Prior to placing each individual Order with Chorus, the Access Seeker must ensure the Technical Interface specification is complied with.

- Change the title of Appendix C to "*Sample Technical Interface Specifications*".

- Add a note to the start of Appendix C of the Operations Manual which reads:

  The specifications set out in this appendix are samples only and the technical interface specifications for the UBA Service notified to the Access Seeker may differ. Chorus is under no obligation to make the UBA Service available using the specifications set out in this appendix.

Make the following changes regarding the Optical Fibre Specification to ensure the UBA service is technology neutral:

- Change clause 13.2.1 of the Operations Manual to read:

  An Access Seeker will supply its own Handover Fibre. The Handover Fibre must meet the Optical Fibre Specification as notified to the Access Seeker by Chorus. Appendix G sets out sample Optical Fibre Specifications.

- Change the title of Appendix G of the Operations Manual to "*Sample Optical Fibre Specifications*".

- Add a note to the start of Appendix G of the Operations Manual which reads:

  The specifications set out in this appendix are samples only and the optical fibre specifications for the UBA Service notified to the Access Seeker may differ. Chorus is under no obligation to make the UBA Service available using the specifications set out in this appendix.

Amend section 17 of the Operations Manual as follows:

17 Technology and Network Changes and Re-Mapping

17.1 ***Notice of Technology or Network Change***

Technology and Network Change Process

17.1.1 The locations of Handover Points ~~and~~, Coverage Areas and type of DSL technology used to deliver the UBA Service are determined by Chorus taking into account various factors including:

(a) network architecture and design requirements including network robustness and logical and physical diversity requirements;

(b) the availability of local and national backhaul capacity by technology;

(c) the number of data switches required to support the required volume of End User services; ~~and~~

(d) DSLAMs and throughput capacity and the location of the DSLAMs in the network~~.~~; and

(e) Technology lifecycles and the need to manage the network efficiently.

17.1.2 A list of current Coverage Areas and their associated Handover Points will be made available to Access Seekers via a secure web portal. Chorus may, from time to time, make changes to the existing Coverage Areas or Handover Points and/or introduce new Coverage Areas or Handover Points depending on various factors including (but not limited to) the growth of broadband services demand, any increase in broadband coverage and changes in network architecture and design requirements. Similarly, the data switch to which a particular DSLAM connects may change for the same reasons. Chorus will advise Access Seekers of these changes as set out below.

17.1.3 Subject to clause 17.1.4, Chorus will provide Access Seekers with 12 months' Notice (or earlier by agreement with affected Access Seekers) of the following network changes that have an effect on the Access Seeker's UBA Service:

(a) changes to Coverage Areas by deletion or boundary change or addition of new Coverage Areas; ~~and~~

(b) changes to Handover Points by deletion or move or addition of new Handover Points; and~~.~~

(c) changes to the type of DSL technology (e.g. L2TP to Ethernet; or ADSL to ADSL2+ or VDSL) that is used to deliver the UBA Service taken by the Access Seeker in any Coverage Area.

17.1.4 However where the only change is an increase in geographical availability or coverage of the UBA Service, Chorus will not be required to provide 12 months Notice. Chorus will instead provide Notice of any increase in the area of geographical availability or coverage of the UBA Service as soon as reasonably practicable following an increase and will provide Notice to all Access Seekers at the same time.

Implementation

17.1.5 Chorus will consult with each Access Seeker affected by a technology or network change as described in clause 17.1.3 and will develop an implementation plan for each affected Access Seeker.

APPENDIX B: DETAILED SUBMISSIONS ON NON-RECURRING CHARGES

1 We are committed to delivering great outcomes to broadband consumers in New Zealand. We think that the best way of driving good outcomes for broadband consumers is for the STD to provide balanced incentives to Chorus and RSPs to work together efficiently to resolve provisioning and fault issues. We are actively considering whether there is more information that we can provide to RSPs or further things we can be doing that will improve consumer experience, and we think that it is a good idea for those discussions to continue in the TCF.

2 In this Appendix, we set out our view on some of the RSP's concerns and requests in more detail.

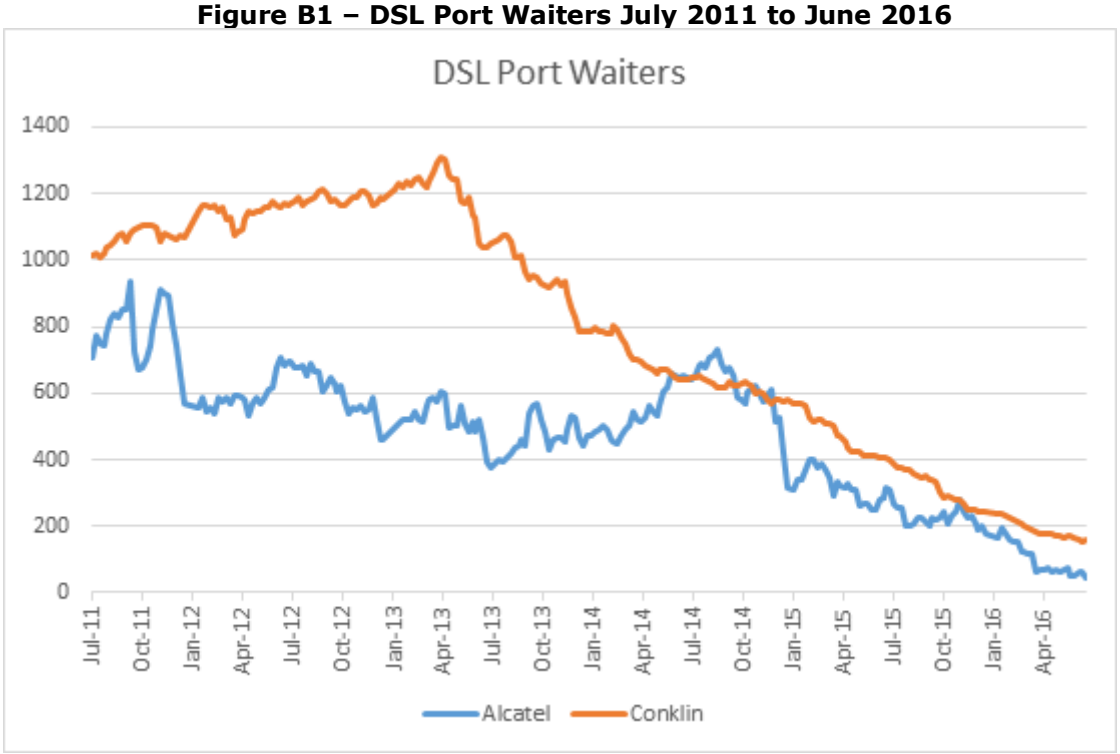
Provisioning

Information on availability of ports

3 We already provide RSPs with information at the time of pre-qualification that tells them if there are existing broadband waiters at exchanges or cabinets. A number of RSPs have asked that Chorus also provide, at the time of pre-qualification, advice on the availability of ports.[31] We are happy to provide this if the utility justifies the cost.

4 We have made significant improvements in reducing the volume of DSL port waiters, so we are not sure how big a problem this really is for RSPs. The volume of DSL port waiters has decreased over the last three years from around 2000 to 200 (as shown in Figure B1 below).

Figure B1 – DSL Port Waiters July 2011 to June 2016



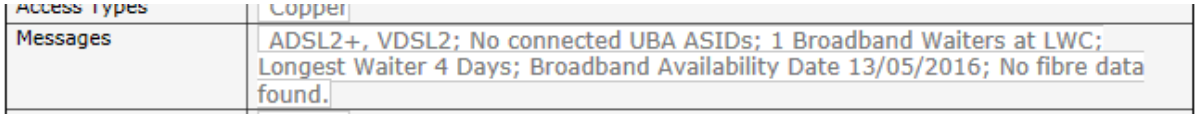
[31] Spark (5 May 2016) at 2.

5 We already provide RSPs with information that tells them if there are existing broadband waiters at exchanges or cabinets:

5.1 although it is not required by the STD, our automatic pre-qualification will identify in the "messages" field if there are existing broadband waiters. An example is shown in Figure B2 below.

5.2 our Service Delivery Managers also provide RSPs with a weekly port waiters list, which lists (1) open service orders for the RSPs' customers who are waiting for DSL ports, and (2) a list of cabinets which have open orders waiting for broadband ports.

Figure B2 – Pre-qualification information on Broadband Waiters



6 While there is a limited gap in the information we provide today – we don't currently provide information on where no current waiters exist but spare ports may not be available – we can investigate the viability of amending the existing voluntary weekly report our service delivery managers provide to RSPs to include capacity constrained cabinets (not just where open orders exist). We could then load this report onto the secure customer website. We note that today, only 59 (out of over 8000) sites have no capacity and no waiters.

7 It is worthwhile bearing in mind that any reporting system will always be a snapshot at a point of time and any availability may be taken by a confirmed order since the report was run.

Information on connection type

8 RSPs receive a lot of information to guide them on which connection type is likely to apply. RSPs have also suggested that Chorus also advise, at the time of pre-qualification, the type of connection necessary to provision the circuit or further information that enables RSPs to understand the likely need for a site visit.[32] Gathering this further information would have a high cost, and it isn't clear to us that it would be cost-benefit justified.

9 The information provided to RSPs includes:

9.1 whether a remote connection or a truck roll charge applies. However, RSPs will not have confirmation at the time of pre-qualification which type of truck roll applies. This is because, practically, we will not know until the technician investigates whether a visit to the cabinet/exchange or customer premises is needed. We can't provide that information any earlier because our systems do not record and track availability of UBA intacts, house wiring and service lead-ins (which can be impacted by third parties without our knowledge).

9.2 whether there is a working circuit at an address and information on what type of connection will be required in different circumstances. RSPs can use this information to guide them on the likely truck roll scenario. For example, it

[32] Spark (5 May 2016) at 14.

may depend on how the RSP orders the service (new connection or transfer), what other services are ordered (if UCLFS is ordered a jumpering at the cabinet or exchange will be required) and what services are able to be provided to the premises. These factors will determine whether the service companies need to roll a truck to the exchange, cabinet, or customer premises to carry out the work.

10 To provide confirmation of which truck roll applies at the time of pre-qualification would require us to audit and track availability of intacts, house wiring and service lead-ins, at every premises that does not have a working service (approximately 200,000 premises) along with system development to retain and recall this information. We do not currently hold this information, some of which (such as the status of home wiring) is in the control of the broadband consumer with whom the RSPs have the direct relationship. Gathering this information and ensuring that it remains accurate would have a high cost for the industry, whether gathered by RSPs or us. We often will not know if premises wiring or a service lead-in has been removed (by the consumer or another provider).

11 We understand is that RSPs are concerned about the number of truck rolls. We have done a lot of investigation with some RSPs on the quantity of site visit disputes since December 2014 and a number of issues have been identified and resolved. Where these related to unnecessary site visits caused by system and process faults, they have been remedied and RSP credits processed. We have also been working with a number of RSPs to help them ensure they are requesting the right order types so that new connection orders are minimised. If there is a complaint, we will investigate and, if we discover that it is valid, put it right.

Information on service performance following completion of a site visit or failed provisioning event

12 Spark has suggested that the technician certifies at the completion of a site visit or failed provisioning event that the service was tested, performing to expectations and stable (including measured performance).

13 Currently, technicians complete a sales and service advice note for all connection orders requiring a site visit, recording the provisioning activity completed. We are looking at developing further tools, based on the development of fibre test tools, which we are happy to talk to RSPs about.

Information on status of home wiring (whether Chorus has installed a splitter) and clarity around wiring (splitter standards)

14 Spark has suggested that Chorus provide, at the time of pre-qualification, advice on the status of home wiring (whether Chorus has installed a splitter). We disagree. The splitter is not part of our network and its presence or absence is beyond our control. To gather this information would require a physical audit, which would quickly become out of date.

15 Spark has also asked for more clarity around wiring (splitter) standards. We have a documented splitter and premise wiring standard that we provide to our service partners. We are happy to provide this to RSPs.

Amendment to pre-qualification charges

16 It follows from our comments on Spark's proposals in relation to providing further information in relation to pre-qualification that we also disagree with the suggestion

that we should not be able to charge for costs that we actually incur when this information is not available.

Amendment to connection charges

17 We also disagree with Spark's proposal that only remote connection charges should apply to sites previously connected to the network.[33] This does not reflect how our network (or the FPP modelled network) actually operates, and would distort incentives on both Chorus and RSPs to act efficiently.

18 While there are situations where an existing UBA connection remains intact and only a remote connection is required, there are a number of situations where a truck will need to be rolled to either the cabinet/exchange or the broadband consumer premises.

19 An exchange/cabinet visit will always be required where there is a change in the service from the last service to be used at the site, for example:

19.1 UCLL to UBA (and vice versa);

19.2 adding Baseband Copper to UBA (where the POTS jumper is not present);

19.3 UCLL to Baseband Copper plus UBA; and

19.4 use of a partial intact, where the connection is intact from the ETP at the site to the cabinet/exchange but not connected to Chorus equipment.

20 A site visit to the broadband consumer's premises will be required where:

20.1 the connection being used is not connected to the ETP. This may occur because, for example, the existing connection is still being used by another RSP (i.e., it has not been relinquished), the site is not currently connected to Chorus' network (the service lead could have been reused to connect to another party's network), a second connection is requested, or the site has not previously been connected to Chorus' network;

20.2 premises wiring/modem installation is requested;

20.3 the order is for VDSL or UBA New Connections (where connection and wiring ordered); and

20.4 the premise has a fibre connection with integrated wiring at the ETP. If the broadband consumer chooses to revert back to copper, the premises wiring will require reconfiguration.

21 Spark's submission is effectively that Chorus should always retain an intact connection to each broadband consumer's premises awaiting a potential UBA order. It is efficient network management to make use of available intacts. It is the most efficient and timely means of providing or restoring service to a broadband consumer. It would not be efficient for us to leave premises connected in case the copper was required for a particular broadband consumer if it could be used elsewhere, particularly in the context of UFB investment in fibre and in future broadband consumers may migrate to fibre and no longer require a copper connection. If RSPs wish to "reserve" a copper pair in

[33] Spark (5 May 2016) at 15.

this way they have the option of maintaining the circuit by continuing to pay a monthly rental fee.

22 We are also concerned that if only remote connection charges should apply to sites previously connected to the network, RSPs might lose incentives to act efficiently in their ordering practices, for example by ordering new connections rather than arranging transfers of existing lines. Our experience suggests that, prior to connection charges being payable in December 2014, this was a common practice. However, it is inefficient, in that it requires technician resources to arrange a connection when a remote connection would have been available.

23 Conversely, Chorus is already incentivised to minimise unnecessary truck rolls. That is because the Commission has set non-recurring charges below our actual costs.

24 Nothing in this is inconsistent with the assumptions made in the FPP process. While the Commission's *UCLL model* has in theory enough capacity to be able to connect every building (at least within areas which were not subject to capital contributions), the model does not account for changes over time, which (over time) will lead to a need for re-arrangements. Put another way, the Commission's model is static – it is a snapshot of demand in time – and does not necessarily provide guidance as to how an efficient network operator would manage change over time.

25 Further, a remote connection could not in any event be used to connect any premises even if an intact connection was present because the UBA model does not provision an active modem port in the cabinet or MDF for each address in NZ, but only one per unit of UBA demand. There are not enough spares to leave ports connected to all premises that previously took UBA but don't any more.

Faults

Information about network performance and faults

26 We think that submissions seeking specific and detailed information to be provided in relation to Chorus' network performance and faults[34] raise matters of detail that are best dealt with in the TCF so that we can better understand RSPs' concerns and determine whether there are ways in which those concerns can be addressed.

27 We note that RSPs are already given significant information in relation to faults which facilitate communication with broadband consumers as well as, in appropriate cases, enabling questions to be raised about charges:

27.1 notification of expected restoration time;

27.2 notification of fault resolution, details of the charge;

27.3 ABR report weekly, details expected charges and notes from technicians.

28 However, we are supportive of further industry efforts in this area and will play a constructive role. Discussion of potential solutions to operational issues involves pan-industry considerations of costs and benefits to all stakeholders. Given these costs, we think the industry should go through the exercise of defining the problem and ensuring

[34] For example, that Chorus should provide information on service performance, an explanation for cancellations and specific times for appointments, and that Chorus should provide remote visibility of customer line performance and access to alarms and notifications.

solutions are proportionate to problems. We agree that a TCF working group is a suitable forum for this, with Commission involvement to ensure a competition and efficiency lens is applied.

29 We think that this discussion can be advanced without impacting the s 30R process – if any changes are needed, they are more likely to be changes to the Operations Manual, which doesn't require a s 30R review.

Amendments to fault charges

30 We do not think that amendments are required to charges for Cancellation and No Fault Found Services. We are concerned that those amendments would reduce incentives for parties to behave efficiently. We need to ensure there are the right incentives on Chorus and RSPs to ensure efficient use of technician resources.

31 At the highest level, RSPs' concern appears to be not with the level of faults on Chorus' network, but with charges payable where a fault is registered, but no fault is ultimately found on the network. In this context, RSPs seek:

31.1 that the onus of demonstrating that where no fault is found the issue was caused by issues outside its network be placed on Chorus in order to recover the No Fault Found charge; and

31.2 that a No Fault Found or Cancellation charge not be payable where the network is not performing to "specification", irrespective of whether a fault is found on Chorus' network or the circumstances in which the broadband consumer cancels the request for assistance.

32 Faults may be caused by a number of issues outside of our control. To incentivise efficient behaviour, each party should be responsible for investigating whether the fault lies on the piece of the network that is under their control. RSPs have the tools and techniques (via SPM) to investigate whether the cause of the fault is on their network. RSPs also have the direct relationship with the broadband consumer so are best placed to determine whether there is a problem with the CPE or the premise wiring. RSPs can do this before they log a fault with us.

33 Reversing the onus would mean that the burden on Chorus would shift from establishing something that is within its control – that the fault did not originate on its network – to establishing something that is not – that there is a specific fault that can be identified as originating in either RSP equipment, CPE, or premises wiring. In situations where Chorus has found no fault in its network, we have no ability to confirm the cause of the customer complaint. It could have been within the broadband consumer's domain and they have realised and fixed it themselves but not cancelled the fault.

34 If there is no charge for No Fault Found where the fault was not on our network the incentives on RSPs will be misaligned. RSPs will not face incentives to carry out adequate investigation before passing fault claims along, and we will be put to the expense and time of chasing these faults down; expense and time that could have been spent fixing real faults in our network.

35 Conversely, we already face the right incentivises to minimise faults on its network and reduce unnecessary truck rolls. That is because its monthly rental charge reflect operating costs which have an efficiency adjustment applied to its actual operating

costs to reflect reduced fault rates, and the Commission has set non-recurring charges below our actual costs.

36 Finally, on the proposal that no charge should be payable when the service is not operating to specification, we consider that this is inappropriate. The UBA service is a best efforts network service. It is a FS/FS service, where actual line speed will be influenced by a variety of factors beyond our control, e.g., distance from equipment, house wiring or local electrical interference. There is therefore no "calculated line speed" currently specified by the STD. For similar reasons to those we explained in relation to throughput, we do not consider it appropriate to specify such an "expected speed" for any given line. It is unclear whether this is technically feasible but, even if it were, it would require extensive work to determine an appropriate methodology given the number of factors (including those outside Chorus' network) which can affect performance.