

18 July 2014

Public

Submission in response to the Commerce
Commission's issues paper relating to assessing
Chorus' new UBA variants – Boost HD and Boost
VDSL (7 July 2014)

Submission

- 1 Thank you for the opportunity to provide submissions on the Commission's Issues Paper dated 7 July 2014 regarding Chorus' new UBA variants – Boost HD and Boost VDSL.
- 2 Chorus has presented the new UBA variants in an effort to drive innovation in services ultimately provided to end-users. Chorus believes there is untapped demand for services of a higher quality that support HD video. Boost HD and Boost VDSL have been designed to facilitate RSPs targeting that demand with innovative services not available today.
- 3 The new UBA variants are commercial offers that are intended to supplement the existing regulated UBA service, enhancing Chorus' portfolio so that end-users are able to access greater value. Chorus is undertaking extensive consultation on the proposed new UBA variants. That is an essential part of ensuring that these services are best configured to benefit end-users. Meanwhile, regulated UBA will remain a critical component of Chorus' portfolio. Any end-users that do not choose to take the new UBA variants continue to be well-served by regulated UBA.
- 4 Chorus believes that the new UBA variants are exactly the kinds of commercial services that the regulatory regime under the Telecommunications Act was designed to accommodate and encourage. Chorus wishes to be a proactive wholesaler and is excited about the dynamic efficiency benefits likely to result from the launch of these services.
- 5 In this process, Chorus is seeking confirmation from the Commission that the level of differentiation inherent in the new UBA variants (relative to regulated UBA) is sufficient that they should be treated as sitting outside the existing UBA STD. It is difficult to identify any downside for end-users in allowing the market to test and value the new UBA variants. If Boost HD and Boost VDSL do not represent value, then RSPs will not support them. Obviously, Chorus' aspiration is that the launch of the new UBA variants is an important step towards end-users deriving greater value from services provided over Chorus' network.
- 6 In these circumstances, Chorus encourages the Commission to support this initiative, including having regard to proposed traffic management on BUBA over Ethernet (as already occurs for BUBA over ATM). That will ensure that regulated UBA performs in line with (and slightly above) the level of service provided by Chorus today. Chorus considers a finding by the Commission that the Boost services are materially differentiated, and that there is no reason to intervene further at this time, would be both consistent with previous decisions and, most importantly, benefit end-users in the long term.

Structure of this submission

- 7 These submissions are presented as follows:
 - **Section A:** Introductory comments briefly highlighting contextual matters that Chorus considers important;

- **Section B:** Chorus' view of the questions the Commission is thinking about (specified at paragraphs 14 and 15 of the Issues Paper); and
- **Section C:** Chorus' comments regarding the matters in respect of which the Commission is interested in views (specified at paragraphs 16, 17 and 18 of the Issues Paper).

Section A: Introductory comments

- 8 The UBA STD delivers a regulatory scheme which provides for:
- 8.1 A "basic" UBA service (BUBA).¹ This is a "best efforts" service that runs at full speed, subject to the prevailing technical conditions, without any service guarantees other than that average throughput must exceed 32kbps during any 15 minute period on demand². Chorus' view, as acknowledged by RSPs, is that the service it provides comfortably does this. Like the name suggests, the regulated UBA service remains sufficient for basic needs, such as internet browsing.
- 8.2 "Enhanced" UBA services (EUBA 40/90/180) that offer additional increments of real time traffic using "QoS" to provide a higher quality experience for end-users in the context of voice services.
- 9 As it has turned out, the demand anticipated for high quality VoIP services to replace "legacy" PSTN voice did not eventuate. Accordingly, there has been no material uptake of EUBA 40/90/180. This has also meant that Chorus has not secured any additional revenues through the price premium (relative to BUBA) associated with these services.
- 10 In many ways, Boost HD and Boost VDSL represent the next generation of "enhanced" services. They are premium services (relative to BUBA) that are directed towards the anticipated end-user demand for streaming HD video. In that regard, Chorus will use techniques such as traffic management and dynamic line management so that Chorus can commit contractually to Boost HD and Boost VDSL having a range of key features (described further in **Appendix A**), including:
- 10.1 For Boost HD, minimum average throughput of 5Mbps and minimum line synch rate of 6Mbps/600kbps; and
- 10.2 For Boost VDSL, minimum average throughput of 10Mbps and minimum line synch rate of 12Mbps/1Mbps.³

¹ Note that BUBA was originally defined as an ATM service only, but it has since been expanded to include an Ethernet equivalent service known as EUBA0 – for simplicity, in this submission we refer to both the ATM-based BUBA service and EUBA0 as "BUBA"

² The throughput metric in the UBA STD is "99.9% probability of providing any provisioned End User a minimum uplink and downlink average throughput of 32kbps during any 15 minute period on demand."

³ Chorus' original intention was that the service commitment would be a throughput for both Boost services of >5Mbps. This is reflected in Chorus' notice dated 14 May 2014. Following consultation, Chorus now intends to offer a service commitment for Boost VDSL comprising a minimum throughput of >10Mbps, a line synch rate of

- 11 Chorus believes that these service levels will be critical in facilitating an RSP's ability to offer innovative and reliable new services based around HD video content. That cannot happen now because, although BUBA will from time to time support HD video content, it will not do so reliably.
- 12 Clearly, part of the attraction for Chorus is the commercial opportunity to achieve a premium over the regulated BUBA price, in an environment where the interim benchmarked price to be applied from 1 December 2014 generates a material reduction in revenues. Still, regardless of the ongoing regulatory pricing conversation, Chorus remains of the view that offering distinctive premium services such as Boost HD and Boost VDSL is a positive step towards facilitating the delivery of innovative services by RSPs to end-users.
- 13 Chorus believes that it does not have the luxury of sitting back and waiting for RSPs to make specific requests for innovative services. The delay in actioning any such request results in inefficiencies. Chorus wishes to be proactive in anticipating end-user needs and developing workable commercial services for RSPs to meet those needs. Chorus will make all services available to RSPs on an open access basis; the choice whether to take the services and how to use them to compete in the retail market will be for the individual RSP.
- 14 In any event, the market will no doubt make its own assessment of the value that Boost HD and Boost VDSL represent. If, in fact, the additional service levels do not represent incremental value for end-users over and above that delivered by BUBA, the new UBA variants will not be supported by RSPs – just as EUBA 40/90/180 have not been supported.
- 15 A similar market exercise occurred with the launch of "WVS" in 2010. The Commission concluded that the UBA STD did not apply to WVS because the service included a range of features not included in the regulated UBA services, including increased commitments in terms of throughput and line speed as well as compensation being payable to the extent that these standards were not met. Accordingly, WVS was launched at a premium price. But the market did not support WVS at that price at that time and the offering effectively lapsed. Subsequently, VDSL services have been provided within the context of the UBA STD.

Section B: Questions the Commission is thinking about

The extent of new investment required to offer the proposed new UBA variants

- 16 It is not the case that Chorus thinks about investment in discrete silos of regulated UBA services and the new UBA variants. The requirements will be viewed in the aggregate having regard to Chorus' obligations to continue to deliver regulated UBA services as well as Boost HD and Boost VDSL.
- 17 If demand for Boost HD and Boost VDSL reaches the levels anticipated by Chorus, the extent of new investment required over and above the current baseline will be

12Mbps/1Mbps, and an increase in the downstream line speed from 10Mbps to 12Mbps. This will allow an RSP to deliver 2 HD channels.

significant. Chorus has separately provided the Commission confidential details of this investment, which relates primarily to the following items:

- 17.1 Upgrading handover nodes;
 - 17.2 ISAM configuration development, and ASAM to ISAM migrations;
 - 17.3 Line optimisation;
 - 17.4 Reporting systems and tools;
 - 17.5 Technician training;
 - 17.6 Prequalification tools;
 - 17.7 Fulfil, assure, bill systems enhancements; and
 - 17.8 Staff to provision the new services.
- 18 Chorus does have some ability to manage its investment in response to uptake. So, if there is in fact little or no demand for Boost HD and Boost VDSL (just as today for EUBA 40/90/180), the additional investment required will be relatively modest. If there is no demand for Boost, Chorus will simply remain focussed on delivering the regulated UBA services, albeit having absorbed the upfront costs associated with launching Boost HD and Boost VDSL, such as service and process development costs.

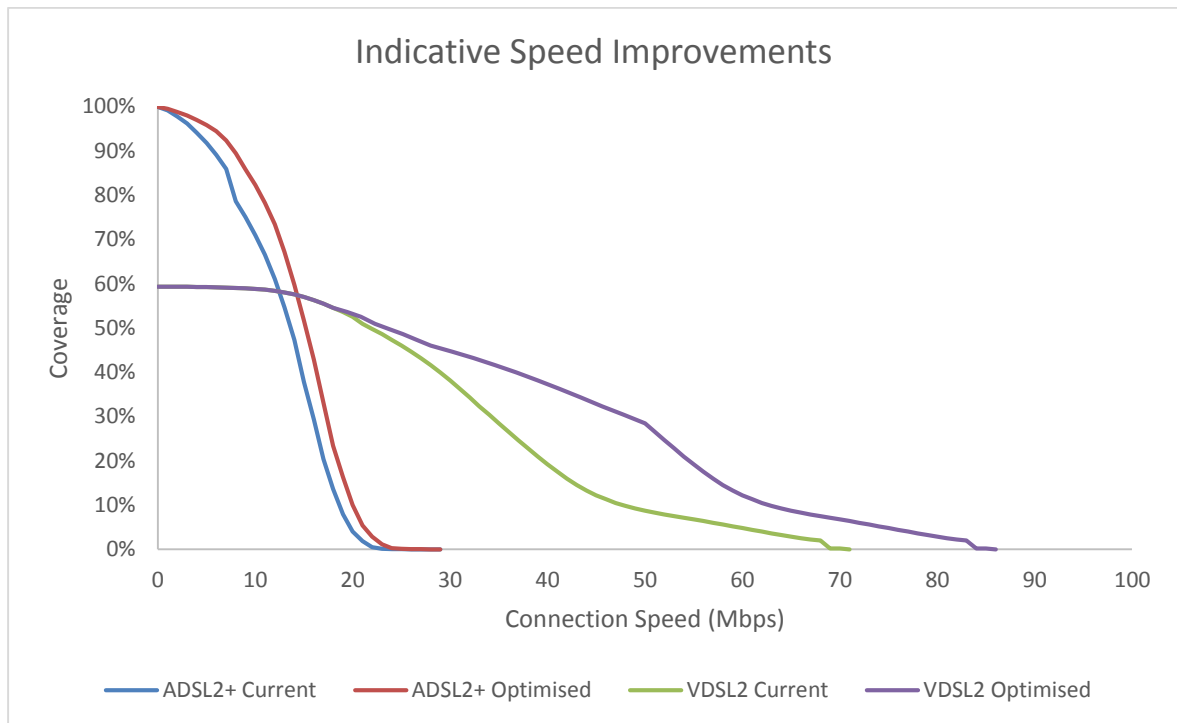
The extent to which the new UBA variants would be substitutes or complements to the regulated UBA services

- 19 Currently, putting aside unbundled lines (over which Chorus has no visibility), an end-user connected to Chorus' copper network wishing to stream HD video content over the internet has to do so off the back of an RSP service based on BUBA. But Basic UBA is what it sounds like: basic. Its "best efforts" nature means that there are no guarantees (other than that there will be a minimum average throughput of 32kbps during any 15 minute period on demand) and, although it may run so that end-users can watch HD TV one minute, the next minute that might not be the case.
- 20 The new UBA variants are partial substitutes in the sense that an end-user taking service from an RSP based on either Boost HD or Boost VDSL will be able to do all the things that an end-user taking service based on a regulated UBA service would be able to do. However, the reverse is not true. Boost HD and Boost VDSL are directed towards demand that is not currently being actively supported. Similarly, fibre services were introduced ahead of demand, and uptake is now occurring.
- 21 Boost HD and Boost VDSL are specifically tailored to the emerging challenge of meeting end-user demand for streaming HD video and using the telecommunications network as a supplementary distribution network to existing broadcast networks. They do that by being configured so as to guarantee higher speeds and a minimum average throughput of 5Mbps for Boost HD and 10Mbps for Boost VDSL. This will help give an RSP the confidence to invest in delivering streaming video at peak times (such as 7pm to 9pm).

With a guaranteed average 10Mbps throughput, RSPs can deliver 2 HD channels. In **Appendix A** to this submission, we set out in detail the service characteristics of Boost HD and Boost VDSL that distinguish those services from both the BUBA and EUBA services regulated by the UBA STD.

- 22 Chorus believes that these service levels will unlock an RSP's ability to offer innovative and **reliable** new services based around HD video content. That can happen sometimes now with BUBA – but not **always**. The risk will always be that BUBA will from time to time – most likely at peak times when the demand (and therefore value) is greatest – disappoint.
- 23 Having said that, the regulated UBA services will continue to play a critical role in the market so that RSPs can provide an appropriate service to end-users who do not see additional value in the services that the new UBA variants will support. It also provides a clear reference point from which the market is able to assess the value delivered by Boost.
- 24 There are companies that measure internet performance received by end-users today, and we acknowledge that some RSPs believe that these tests show that end-users receive the Boost level of service today. However, these tests need to be put in context. TrueNet's measurement, for example, is based on file download sizes of 300kB for ADSL and 1MB for VDSL (which they describe as "typical web browsing"). These files are significantly smaller than would be required for HD video streaming.
- 25 Similarly, the Google Video report has relatively low thresholds for classifying a line as "HD capable" (i.e. HD = 720p and 1080p = 2 - 3.5Mbps and 90% of YouTube videos with "auto selected" achieve 720p or higher over a 30 day period).
- 26 Services like Netflix and Premier League Pass use more conservative codecs, so HD requires around 3.5 -4.5 Mbps. Netflix specifically recommends a 5Mbps internet connection to get HD. Boost is designed for a range of HD content providers.
- 27 The investment in line speed and traffic management will also improve line speeds experienced by end-users for Boost as compared to today, as shown by the following graph⁴:

⁴ Chorus is still working through the practicality of doing line management on ADSL.



The extent to which the proposed changes are consistent with the section 18 purpose statement

- 28 The proposed changes promote competition for the long-term benefit of end-users because they cater directly to demand that Chorus believes exists, is set to grow, and currently cannot be properly met by RSPs. Leaving end-users to stream HD video content over a best efforts service not designed or fit for that purpose sells end-users short.
- 29 The broader implications in the context of content markets are potentially transformational to the extent that a genuine alternative platform for consuming HD video will emerge.
- 30 It is true that Chorus sees Boost HD and Boost VDSL as premium services and, accordingly, it is likely that end-users will be willing to pay more for services supported by Boost HD and Boost VDSL. But that would reflect the higher value being delivered over and above that inherent in BUBA. Chorus notes that RSPs currently sustain a premium for VDSL services over and above ADSL, which reflects the improved performance of broadband services provided over that technology. Chorus is more confident that a premium would be able to be realised for the new UBA variants due to the additional features noted at **Appendix A**. In any event, if Chorus is wrong and Boost HD and Boost VDSL do not represent additional value, then the market will simply not support them and no harm will be done.
- 31 In short, there is only upside here for end-users who will have options in front of them that they currently lack, assuming that at least a segment of the RSP community accepts the challenge of exploring this market opportunity.

Whether the proposed changes are permissible under the STD

- 32 The proposed changes are permissible under the UBA STD. The Commission has previously recognised that offering commercial variants with different service characteristics at a differential price is permissible provided the commercial variants are sufficiently differentiated from those provided pursuant to the UBA STD. Those differences have been explained earlier in this submission and are set out in more detail in **Appendix A**.
- 33 The other changes to the provisioning of the UBA STD service on which Chorus is currently consulting on are also consistent with the obligations under the UBA STD to provide a basic “best efforts” service in accordance with the specified performance standards. Our detailed reasoning on this topic is set out in **Appendix B** to this submission.

The impact of the proposed withdrawal of the VDSL regulated service on RSPs and end-users

- 34 Chorus is consulting on the potential withdrawal of the VDSL regulated service in parallel with the consultation on the new UBA variants. As part of that consultation, Chorus is considering how it will approach the provision of regulated UBA services over VDSL. It may be that VDSL remains as an option for regulated UBA services, albeit without the specific features of Boost. Either way, a VDSL service will be available to RSPs.
- 35 Even if VDSL is no longer used to deliver regulated UBA services, the impact on RSPs and end-users will be minimal. The key point is that BUBA will remain a credible basic service for those end-users that continue to use it and not the new UBA variants. Traffic management will ensure that, notwithstanding the provision of the new UBA variants, its performance will not deteriorate from that provided by Chorus today, and in fact will be slightly higher than today’s observed average. In addition, to the extent that RSPs currently position VDSL as providing an appropriate basis upon which to price discriminate in retail markets, that opportunity will continue in the form of Boost VDSL, which will, for all the reasons already stated, be a truly distinctive service in terms of its suitability for the provision of a service that properly supports HD video.
- 36 In addition, Chorus will ensure that any migration required from VDSL to ADSL based service for regulated UBA is seamless. Chorus is working with RSPs to ensure there is minimal disruption to any RSP’s service.

The impact of the proposed bandwidth management on the regulated service

- 37 Chorus appreciates that RSPs (and end-users) will want a degree of comfort that, notwithstanding the introduction of the new UBA variants, the regulated UBA services will remain fit for purpose for those end-users who do not value the additional features of Boost-based services. Accordingly, Chorus proposes to use traffic management both to deliver the specific characteristics of the new UBA variants and also to assist in ensuring that the regulated UBA services remain fit purpose. The practical impact of Chorus’ traffic management will be that:

- 37.1 Boost HD and Boost VDSL both consistently maintain throughput performance appropriate to the delivery of HD video context (i.e. >5Mbps and >10Mbps respectively); and
- 37.2 the regulated UBA services will not be compromised beyond a level currently provided on average by Chorus today. In practice, this means Chorus will provide aggregate bandwidth at every handover based on a formula of 250kbps per end-user connection, which is slightly higher than today's observed average throughput. This type of traffic management occurs on the regulated UBA services provided over ATM today.
- 38 If end-users with high bandwidth usage (such as those who stream HD video) take the Boost services, end-users who remain on a regulated UBA service should notice no impact on the experience they receive. In other words, the regulated UBA service, in particular BUBA, will remain fit for purpose – a basic service suitable for activities such as internet browsing.
- 39 By contrast, without the new UBA variants and the traffic management that is required to deliver it, the experience of regulated UBA services could deteriorate over time. That is because BUBA, in particular, will be a “one size fits all” service with increasing numbers of end-users consuming greater network capacity to the detriment of other classes of user with more modest needs. While the service provided by Chorus today will be unchanged, bandwidth growth (which is driven by RSP and end-user behaviour) is likely to cause the end-user experience to decrease.
- 40 Without capital or funding constraints, or a mandate to earn commercial returns, Chorus could of course continuously invest funds to augment the network to cope with increased demand for bandwidth. If this is intended by the STD, this needs to be clear – and the UBA service would need to be priced accordingly.
- 41 Chorus believes such a “one size fits all” regulated UBA approach would be inefficient and not benefit end-users in the long-term. It would eliminate the substantial dynamic efficiency benefits inherent in incentivising Chorus to develop and offer commercial services in parallel with any regulated services. The provision of targeted premium services such as the new UBA variants alongside the regulated (genuinely “basic”) BUBA service sends appropriate price signals to both RSPs and end-users to the effect that network capacity is finite. It helps Chorus recover its costs efficiently and it reduces any cross-subsidy across end-user groups.

Section C: Views on specified matters

Are there any aspects of Chorus' proposal which we have not covered or have covered inaccurately?

- 42 There are a number of additional features of Chorus' Boost proposal not referred to in the Issues Paper:
- 42.1 For Boost HD, the proposed minimum downstream/upstream line speed is >6Mbps/600kbps (i.e. the commitment applies to both the downstream and upstream speeds);

- 42.2 For Boost VDSL, the proposed minimum downstream/ upstream line speed is now >12Mbps/ 1Mbps (i.e. the commitment applies to both the downstream and upstream speeds and the downstream line speed commitment has been increased from >10Mbps to >12Mbps);
 - 42.3 An obligation to provide sufficient network capacity to meet frame delay/loss and minimum throughput;
 - 42.4 Optimisation of line profile settings;
 - 42.5 Improved pre-qualification tools to support the provision of video and other demanding applications;
 - 42.6 Proactive reporting;
 - 42.7 Installation fees are included in the price of the Boost services; and
 - 42.8 Installation of Boost VDSL will be made fibre-ready in Chorus' UFB areas.
- 43 There are also a number of features referred to in the Issues Paper that Chorus wishes to clarify as follows:
- 43.1 The minimum throughput commitment for Boost HD is a minimum downstream average throughput of 5 Mbps during a 15 minute period;
 - 43.2 Following consultation, the minimum throughput commitment for Boost VDSL is now a minimum downstream average throughput of 10 Mbps during a 15 minute period (not 5Mbps as stated in Chorus' notice dated 14 May 2014 and reflected in the Issues Paper);
 - 43.3 Chorus' initial proposal was that RSPs would need to take a separate handover for regulated and Boost services. Following feedback, we have also put forward two alternative options that would allow RSPs to take a single handover in each location where they choose to have a presence. Either Boost VDSL could be delivered to a BUBA handover (but without the service commitment) or RSPs could have commercial handovers but nominate a percentage of lines where the RSP delivers a capped service, that would receive a "capped service rebate", back to the regulated price. Chorus is also considering options to provide, a free 1 Gig Ethernet handover for regulated UBA services in each of the proposed 26 coverage areas. Chorus is still in consultation and is working through the options of what will best enable choice for RSPs but also ensure that investment required by Chorus can be managed.
- 44 On 10 July 2014, Chorus held a Dialogue session for the industry to answer questions raised in relation to the proposed new UBA variants. A copy of the Dialogue presentation is **attached** to this submission to provide further context.

What innovations do the new UBA variants bring to the broadband markets?

- 45 As already noted, the key innovations will be RSP plans targeted at end-users wishing to consume consistently high quality HD video content over the internet. This will not happen without effort from the RSPs, who may need to invest in their networks in order to make them capable of delivering (and marketing for) HD video. The new UBA variants facilitate such plans – but they do not force them to happen. In many ways, it might be easier for RSPs not to have to face the dilemma of whether to introduce such plans. Some RSPs may be content to operate from a level playing field, with less product differentiation of products for end-users from which they cannot be criticised for not offering innovative services directed towards HD video (or other applications that demand a high quality network). Chorus believes end-users will benefit from RSPs having the choice and therefore the opportunity to innovate. Even if only some RSPs take up the opportunity, that will still deliver choices that end-users currently do not have.
- 46 It was the prospect of downstream innovation that the Commission identified in the context of Decision 611 as distinguishing BUBA from EUBA 40/90/180. In particular, the Commission noted (at para [171]) that:

Each Enhanced UBA services [sic] enables Access Seekers to supply a particular set of retail services. The increase in the capacity of tagged real-time services, with the additional services it can deliver requires that each Enhanced UBA service should have a separate monthly charge.

- 47 As noted above, Chorus is incentivised to be a proactive wholesaler. That involves looking to overseas markets for applications that are popular and encouraging their development in New Zealand. Any delay in waiting before actioning any request for such services results in inefficiencies. Chorus wishes to anticipate end-user needs and develop workable commercial services for RSPs to meet those needs.

What is the expected level of demand for the new UBA variants?

- 48 Chorus has worked through scenarios where demand for the new UBA variants is anywhere between 0% and 80% of total UBA uptake. In reality, though, it is hard to know. Chorus believes the commercial logic underpinning the new UBA variants is sound and so is optimistic that there will be strong demand.
- 49 Of course, the RSPs will be able to offer direct insights to the Commission as to their own intentions around using and competing with the new UBA variants. The reportedly favourable end-user response to Slingshot unblocking Netflix, BBC iPlayer and Hulu available suggests that there is strong demand for accessing HD video content over the internet.⁵ Chorus is seeking to meet that demand with services that are fit for purpose and drive a satisfactory end-user experience. RSPs currently have no option but to make this content available over a BUBA-enabled line. Chorus believes that greater uptake will be achieved with the availability of services tailored to this need.

⁵

http://m.nzherald.co.nz/business/news/article.cfm?c_id=3&objectid=11293212

To what extent do you consider the new UBA variants as substitutes or complements to the regulated UBA?

50 We refer to paragraphs 19 to 27 above.

To what extent will the proposed changes to regulated UBA impact on your business?

51 Chorus assumes this question is directed to the impact on an RSPs' business, rather than Chorus' business. In that regard, as noted above, the new UBA variants need not impact an RSP's business in any way other than to present an option through which a genuinely differentiated service offering may be presented to cater for the expected rise in demand for streaming HD video over the internet. One legitimate response would be to ignore Boost HD and Boost VDSL and provide services to end-users only through BUBA.

52 Alternatively, an RSP may see the new UBA variants as representing an opportunity to provide innovative higher value services to end-users with particular demand characteristics. It will not be costless for RSPs to provide such services alongside those provided currently. There will be additional costs not just in marketing the new services, but also in terms of the investment required in systems to provision and bill the services. No doubt such costs will be carefully measured against the market opportunity with the competitive positioning of other RSPs also potentially a relevant factor.

53 One particular commercial issue that has already been identified is the need to incur the cost of purchasing additional handovers from Chorus – particularly if both regulated UBA services and Boost are taken in the same area. Ultimately, it is in Chorus' interests to generate conditions under which the new UBA variants are successful in the market and so Chorus is looking to engage constructively to understand this issue and address it. For this reason, Chorus is consulting on alternatives, as outlined above.

To what extent will the proposed changes to regulated UBA influence the take-up of new UBA variants?

54 The proposed changes to regulated UBA services should not affect take up of the new UBA variants. BUBA will remain a compelling service for any end-user not wanting to pay extra for the specific features inherent in Boost HD or Boost VDSL. If anything, the changes to the regulated UBA services operate to **protect** it from deterioration beyond current levels where end-users are on plans that are fit for their particular circumstances. In particular, if the changes were not made in terms of traffic management, there would be a risk that the performance of regulated UBA services would deteriorate further, potentially increasing uptake of the new UBA variants.

55 Chorus sees traffic management as an essential component of delivering a sustainable solution from both a commercial and regulatory point of view. Chorus recognises that BUBA needs to remain a robust service fit for the "basic" purpose short of that for which the new UBA variants are directed. The changes to the regulated UBA services ensure that this happens.

To what extent do you view the throughput requirements in the STD as a minimum?

- 56 Chorus considers that the throughput requirements in the STD are a minimum performance specification. However, Chorus currently exceeds these minimum specifications and will continue to exceed them. Our detailed analysis of the UBA STD is set out in Appendix B to these submissions.

APPENDIX A
ANALYSIS OF SERVICE CHARACTERISTIC DIFFERENCES BETWEEN BOOST SERVICES AND REGULATED SERVICES

| | UBA | Boost HD | Boost VDSL |
|---|---|--|--|
| Availability | 100% of DSL capable lines | ~90% of DSL lines | ~60% of DSL lines |
| Minimum line synch rate (pre qual) | BUBA: 64kbps synch rate requirement | 6Mbps downstream / 600kbps upstream | 12Mbps downstream / 1Mbps upstream |
| Min throughput | 99% probability of a 32kbps average over 15mins | 5Mbps commitment over 15mins | 10Mbps commitment over 15mins |
| Traffic management | Basic UBA over ATM: 150kbps (75kbs current average) Basic UBA over Ethernet: 250kbps (200kbps current residential average) x number of customers | None applied | None applied |
| Handover locations | 90 | 26 | 26 |
| Tail extension steps | 8 | 5 | 5 |
| Tail extension Traffic class | Best Efforts | Differentiated | Differentiated |
| Home wiring | Uses existing | New composite cable installed ETP to modem if site visit ordered | New composite cable installed ETP to modem as standard |
| Assure | Truck roll can be ordered by RSP, no fault found may apply | Truck roll at no charge if service commitment not met | Truck roll at no charge if service commitment not met |
| Installation | Remote \$15.85, non-site \$73.51, site visit \$169.73, modem install \$38.01 | Remote & non-site and basic modem install included. Site visit charged if applicable. | All install charges included in offer (fibre ready) |

APPENDIX B

ANALYSIS OF PROVISIONING CHANGES COMPLIANCE WITH UBA STD

B1 In this Appendix, we provide a more detailed analysis of whether the proposed changes to the way in which the regulated UBA service is provisioned by Chorus are consistent with the UBA STD.

Is the throughput requirement in the UBA STD a minimum?

B2 The UBA STD specifies a minimum level of performance that Chorus' regulated UBA service is required to meet. While Chorus may exceed that service level in practice, that does not form part of the statutory service standard which Chorus is obliged to provide.

B3 Accordingly, in relation to the specific changes to Chorus' regulated UBA services that Chorus is currently consulting on:

B3.1 The application of traffic management to ensure minimum throughput specifications are exceeded is consistent with Chorus' obligation to ensure that the minimum throughput requirement is met, and with the overlay of concepts such as "international best practice" and "good faith" in the UBA STD.

B3.2 The withdrawal of VDSL technology to provide the regulated UBA service is a choice which Chorus is entitled to make. The ADSL technology which is currently used for the majority of the regulated UBA services meets and exceeds the requirements of the STD, and will continue to do so (in particular given the application of traffic management).

The throughput requirement in the UBA STD

B4 In relation to throughput, the STD specifies the following service standard in relation to BUBA (in clause 3.13 of Schedule 1):

99.9% probability of providing to any provisioned End User a minimum uplink and downlink average throughput of 32 kbps during any 15 minute period on demand.

B5 Clause 3.1 of Schedule 1 Service Description describes the BUBA service as follows:

The Basic UBA Service provides an Access Seeker with an internet-grade 'best efforts' bitstream service and enables an Access Seeker to offer its End Users DSL enabled services.

B6 The limitation of the BUBA service to a "best efforts" class of service is consistent with the minimum throughput specified. The concept of "best efforts" is used in the telecommunications sector to describe a low specification quality of service that is "no guarantees". Consistent with this, in the STD, BUBA is a "best efforts" service, as is the "internet grade" limb of EUBA, which is itself defined as a class of service that:

will achieve a 99.9% probability of providing to any End User a minimum downlink average throughput of 32kbps during any 15 minute period on demand, irrespective of whether the Real Time CoS is in use or not.

- B7 In contrast, the enhanced limb of the EUBA service is “real time” class of service designed to support some latency sensitive applications.
- B8 This aspect of the UBA STD was clearly understood during the development of the UBA STD. In particular, Telecom stated:⁶

the most appropriate way to describe the throughput specification is as a minimum commitment. By its very nature, best efforts internet means that the throughput will vary from time to time. Any specification other than a minimum commitment stops being best efforts.

- B9 Telecom also drew the Commission’s attention to the relationship between minimum throughput specification and a “best efforts” service:⁷

Capacity required depends entirely on how Access Seekers sell and manage their services and ultimately on End User behaviour. Currently, Telecom can ensure it always complies with the Service Specifications for the UBS service by dimensioning 32kbps per End User. If the throughput specification was to change to a 90% probability of 1Mbps, Telecom can only ensure it always complies with the throughput specification by dimensioning 1Mbps per End User, which is 30 times more than the current requirement. 1Mbps would then effectively become the new minimum commitment, which is not a best efforts internet grade service

- B10 The Commission has previously, and correctly in Chorus’ view, recognised the throughput specification for BUBA, and “internet grade” throughput specification for EUBA, as providing minimum performance specifications consistent with a “best efforts” service.
- B11 In the Commission’s 2010 VDSL Determination, the Commission commented that VDSL incorporated certain features (including a higher minimum average throughput) that were sufficient to distinguish it from the UBA service:⁸

The Commission has considered the submissions and cross submissions and concluded that WVS [VDSL2] incorporates a number of features not included in the regulated UBA Service Description. These features include an increase in the minimum average throughput from 32kbps to 96 kbps, and a warranty from Telecom that the minimum line speed thresholds will be 15Mbps download and 5Mbps upload, with compensation payable in the event this standard is not met. In the Commission’s view these more onerous obligations on Telecom are sufficient to differentiate WVS from the regulated UBA service.

Submitters suggested that higher throughput metrics alone were not a sufficient differentiator from UBA. The Commission does not agree. The UBA Service Description specifies 32kbps as a minimum, compared with 96kbps for WVS. Currently Telecom is providing an average throughput of 45kbps for the regulated UBA service, which is well above the minimum required,

⁶ Telecom UBA Standard Terms Proposal (11 July 2007), para 99.

⁷ Telecom UBA Standard Terms Proposal (11 July 2007), para 102.

⁸ See paragraphs [5] and [12] of the Final Decision of the Commerce Commission on the applicability of the UBA STD to Telecom’s Wholesale VDSL2 Service, 20 December 2010.

but significantly below the level required under WVS. The more onerous throughput obligation applying to WVS is sufficient to differentiate it from the regulated service.

- B12 This commentary is entirely consistent with Chorus' view that the UBA service provided in accordance with the UBA STD does not have to exceed the minimum service levels prescribed in that STD.

Other service standards

- B13 The Commission has indicated (at paragraph [15.1] of the Issues Paper) that it is also thinking about whether Chorus' proposed changes to regulated UBA services are permissible under the general service standards specified in Schedule 1 to the UBA STD, including "international best practice" (cl 2.3, 8, and cl 5(b) of Schedule 1 of the Act) and "good faith" (cl 2.2.1) requirements in the UBA STD.
- B14 In Chorus' view, the general concepts of "international best practice" and "good faith", while important, do not speak directly to the specific service standards dealing with throughput: that is, in the case of BUBA, of a "best efforts" service with minimum throughput as defined in the service standard.
- B15 As is clear from the terms of clause 2 of Schedule 1 to the UBA STD, the good faith obligation does not seek to impose additional requirements in relation to the specifications of the service provided by Chorus, but instead relates to the way in which Chorus carries out its obligations under the UBA STD:

The Parties must... carry out their obligations under the UBA Terms in good faith

- B16 Similarly, in relation to the "international best practice" requirement, the relevant access principle⁹ is:

Access principle:

- (b) *Principle 2: the service must be supplied to a standard that is consistent with international best practice:*

- B17 The UBA STD defines the UBA Service in terms of the metrics that the Basic UBA service will achieve (along with metrics for the Enhanced UBA variants), including a throughput requirement for BUBA. Access Principle 2 requires that the means by which Chorus chooses to supply this minimum throughput (as "*the service*") is at a standard consistent with international best practice. Clause 6(1)(c) of Schedule 1 of the Act confirms that these Access Principles are not intended to require an access provider to depart from its "*existing legal duties ... to provide a defined level of service to users of the service*". In the context of the UBA STD, that defined level of service in relation to the throughput characteristic of the service is as set out in the service standards.
- B18 An interpretation of these general service standards that required Chorus to provide a service of higher specifications than those expressed in the service description would be

⁹ Act, Sch 1, cl 5.

inconsistent with both the express specification of those standards in the UBA STD, clause 6(1)(c) of Schedule 1, and also with the UBA STDs structure and purpose.

- B19 An additional (and vague) requirement that Chorus must meet an unspecified minimum average throughput or overall speed for BUBA at whatever level “international best practice” or “good faith” dictates sits uneasily alongside the specific minimum standard – particularly in the absence of any Commission guidance on what international best practice might mean in this context – and would not promote the certainty that the STD regime was designed to foster.
- B20 In particular, in relation to issues of average throughput and overall speed, the suggestion that the general obligations might impose an obligation to do more than the specific standard cannot be reconciled with the provision for regulated UBA variants (i.e. the BUBA and EUBA services). The UBA STD expressly provides for a number of Enhanced UBA Services, each at different (increasing) real time throughputs (UBA STD, Sch 1, cl 4.10) and for correspondingly higher prices (UBA STD, Sch 2). Some or all of these services may be redundant if an indeterminate international best practice or “good faith” obligation to provide higher levels of throughput were to dictate the specifications for BUBA (at the lower price).
- B21 In other words, the existence of the EUBA services (with higher throughput specifications and class of service commitments) demonstrates that Chorus has always been able to deliver UBA at higher average throughput levels than the standard set for BUBA. But it has never been suggested that mere fact means Chorus must deliver the BUBA service at those higher average throughput level. The Basic / Enhanced construct in the UBA STD would be incoherent if that was the case.
- B22 Finally, such an interpretation would be inconsistent with the section 18 purpose statement. As the Commission has previously recognised, in its VDSL Determination, an important aspect of promoting competition for the long term benefit of end-users is the promotion of dynamic efficiency. In the context of the UBA STD, dynamic efficiency is promoted by providing the access provider (in this case Chorus) with incentives to invest and innovate through the delivery of commercial services that respond to and test market demand, and thereby complement the regulated UBA services. If the UBA STD is interpreted in a way that prevents access providers from innovating, because any increases in average throughput must be provided to all end-users provisioned using regulated UBA services, incentives to invest will be correspondingly diminished.

Traffic Management

- B23 While the current regulated UBA services provided over Ethernet service are not actively managed, that occurs in a context where no significant commercial UBA services are offered by Chorus. Where commercial UBA services are offered over the same network resource, appropriate management will ensure that the throughput requirements specified in the UBA STD are met. That is particularly the case if the network is managed to enable a throughput that is materially higher than the minimum levels.
- B24 Traffic management used in a manner that establishes a performance “floor” for regulated UBA services that exceed the minimum level mandated in the UBA STD effectively guarantee ongoing compliance with those particular aspects of the UBA STD.

B25 In this context, the application of traffic management to ensure minimum throughput specifications are exceeded are entirely consistent with the overlay of concepts such as “international best practice” and “good faith”.

B26 In this regard:

B26.1 there has been no suggestion that traffic management is anything other a universally accepted tool for prudently managing a network such as the copper network operated by Chorus in accordance with international best practice; and

B26.2 there has been, and will continue to be, good faith engagement with the Commission and RSPs as to the level at which any traffic management would occur. Chorus took the same consultative approach with RSPs when a VDSL based regulated UBA service was introduced with business rules last year.

B27 Certainly, the overlay of these concepts cannot be interpreted to imply an ever more onerous service standard that has not otherwise been mandated through the existing UBA STD, itself designed to be a self-contained code. That would undermine the fundamental design of the Act whereby regulation (or changes to regulation) can only occur through robust processes (e.g. section 30R) provided for in the Act.

B28 We also note that Chorus actively manages traffic in the context of ATM-based regulated UBA services today, which has been accepted as standard practice.

Use of VDSL technology to provision the regulated UBA services

B29 The UBA STD is currently drafted in deliberately technology neutral terms. Schedule 1 of the Telecommunications Act 2001 defines Chorus’ unbundled bitstream access services in technology neutral terms as “a digital subscriber line enabled services ... that enables access to, and interconnection with, that part of a fixed PDN that connects the end-user’s building...”.

B30 Consistent with the Act, clause 2.2 of Schedule 1 of the UBA STD describes the UBA service as a “DSL enabled service” (where DSL is defined as a Digital Subscriber Line: UBA STD, Sch 1, cl 1.3). Again, the DSL technology which is used to provide the service is not specified.

B31 In its final decision on the request for a review/clarification of the application of the UBA STD to VDSL technology dated 16 April 2010, the Commission said:

40 ... This requirement is, and was intended to be, neutral in terms of the form of DSL service provided.

41 The intent of the STD is clear. Telecom must provide access to BUBA and EUBA in accordance with the terms of the STD. The DSL technology which Telecom elects to use to deliver BUBA and EUBA is a decision for Telecom alone. There is no compulsion to use VDSL to deliver the regulated BUBA and EUBA services, except where they have chosen to make it the only DSL technology available in an exchange or cabinet to deliver the regulated service.

- B32 Chorus agrees with this interpretation of the UBA STD.
- B33 Accordingly, so long as the technology deployed by Chorus is a DSL based technology capable of meeting the minimum performance specifications discussed above, the choice of technology is a matter for Chorus. ADSL technology can, and is accepted to, meet those specifications.
- B34 Further, and as discussed above, if traffic management used in a manner that establishes a performance “floor” for regulated UBA services exceed the minimum level mandated in the UBA STD, then that would effectively guarantee ongoing compliance with those particular aspects of the UBA STD.
- B35 For completeness, the obligation in the UBA STD Service Description that the Basic UBA (BUBA) service have “*a maximum downstream line speed and a maximum upstream line speed*” (clause 3.6) does not require Chorus to provide regulated UBA services using VDSL technology unless that technology is the only available technology over which a particular line can be provisioned at an exchange or cabinet, so long as the minimum specifications are otherwise met.
- B36 Clause 3.6 relevantly provides that:
- The Basic UBA Service available under this service description is a DSL enabled service which has a maximum downstream line speed for data traffic sent to the End User and a maximum upstream line speed for data traffic sent from the End User.
- B37 Chorus of course accepts, as is implicit in cl 3.7, that the “*maximum upstream or downstream line speed*” is the “*maximum ... line speed for data traffic that the DSLAM can support*” subject to the constraints set out in cls 3.7 and 3.8. In other words, Chorus must provide a DSL service that has an unconstrained upstream and downstream line speed.
- B38 This requirement reflects the Commission’s rejection, in its Decision 611, of a proposal by Telecom to adopt UBA services with differential line speeds at different prices.¹⁰ The Commission preferred specification of a single “*FS/FS Basic UBA service*” with differentiation to occur at the retail level.
- B39 However, while clause 3.6 of Schedule 1 means that Chorus cannot constrain the speed of a DSL service provided over a particular line, the choice of technology in respect of a particular line remains with Chorus. If Chorus elects to deliver a regulated UBA service using VDSL technology, then it will be required to provide the service in accordance with the UBA STD, including clause 3.6. However, Chorus may elect to deliver regulated UBA services over ADSL technology. Delivering a line using VDSL technology will in practice only be required if the line can only be provisioned using VDSL technology – i.e., because the cabinet or exchange to which the end user is connected only has VDSL technology installed.

¹⁰ Commerce Commission Standard Terms Determination for the Designated Service Telecom’s Unbundled Bitstream Access (Decision 611, 12 December 2007) at [58] – [108].

- B40 The alternative interpretation is that the reference to “*maximum ... speed*” refers to a maximum theoretical speed capable of being achieved by “available” technology, either in the sense that technology is available at a cabinet or exchange (so that a regulated UBA service could be provisioned using this) or is available in the broader sense of being available for purchase.
- B41 The potential for varying concepts of “availability” on the alternative interpretation itself indicates against its validity. To repeat, the UBA STD is intended to be a self-contained code which provides the access provider (in this case Chorus) and RSPs with reasonable certainty as to their respective rights and obligations. The alternative interpretation would not provide this.
- B42 Importantly, the alternative interpretation would also give rise to consequences that are difficult, if not impossible, to reconcile with the purpose of the Act.
- B43 First, at present RSPs effectively require Chorus to provide BUBA over ADSL unless and until they have identified an end user prepared to pay a premium for VDSL. On the alternative interpretation, Chorus would breach the STD by complying with this request. Chorus would therefore be prevented from providing to its customers what they were seeking – an ability to discriminate between ADSL and VDSL based services at the retail level.
- B44 Second, on the alternative interpretation, once Chorus has invested to install VDSL technology, Chorus would be in breach of the STD unless it instantaneously migrates every end-user to VDSL. That would prevent RSPs from executing any efficient price discrimination strategy as between ADSL and VDSL, as they have been able to do to date. It would also leave Chorus with no incentive to invest in VDSL, as it would not result in the market being conditioned to paying extra for (more costly) speed. Such a result would be inconsistent with promoting dynamic efficiency, or competition for the long term benefit of end-users, a matter recognised by the Commission in the VDSL Determination.
- B45 For completeness, we note that the Commission’s rejection in Decision 611 of price discrimination in relation to line speed cannot be read as a general rejection of price discrimination at the wholesale level. Nor can, or should, cl 3.6 be read as preventing price discrimination. That price discrimination between commercial and regulated services having different performance characteristics (other than maximum speed) is consistent both with the express inclusion of the BUBA and EUBA variants in the UBA STD, and also the Commission’s VDSL determinations.