



Section 30R review of Chorus' Unbundled
Bitstream Access Service – draft determination

Submission | Commerce Commission

30 November 2016

Contents

Executive Summary	1
Introduction	3
The UBA service	3
Proposed LAP utilisation cap	3
ATM lifecycle management	5
Other issues.....	6
ATM additional charges.....	6
Transparency of Chorus' systems and service level terms	7

Executive Summary

1. We support the Commission's proposed approach – the UBA service should be “fit for purpose” and this means it continues to evolve to remain capable of meeting end user needs.
2. Where the Commission has decided not to amend the STD, the clarifying comments in the draft provide helpful guidance relating to expected UBA performance, role of ATM tail extension and possible changes to the operations manual, and should be confirmed in the final decision.

UBA service performance

3. The draft proposes that UBA should continue to be an uncongested service, and focuses on local aggregation path utilisation as a pragmatic measure to implement this objective. While we support the proposed approach, the proposed utilisation cap leaves Chorus with an incentive to maximise utilisation (subject to a small margin to address the risk that it inadvertently exceeds the cap) rather than to maintain a congestion free network. If Chorus were to operate the network at close to 95% utilisation, our experience is that the UBA service will be unusable at peak times for end users.
4. Therefore, we propose that the Commission should impose a requirement for Chorus to provide an uncongested network with the expectation that utilisation not exceed 80% on any local aggregation path (**LAP**) under normal operating conditions. This is consistent with Chorus' stated planning objective that ensures no link exceeds 70% utilisation under normal operating conditions¹, and RSPs reported 85% maximum utilisation targets. The Commission should impose an 80% LAP target (necessarily lower than the RSP reported targets), as RSPs are able to achieve aggregation benefits for handovers and core links.
5. Chorus should report utilisation of each LAP as proposed, and provide additional performance and capacity reporting on links exceeding 70% utilisation, i.e. it is from this point that capacity augmentation should be planned and congestion avoided proactively. This reporting should include link performance (packet loss) and expected capacity augmentation date. If the reporting suggests a systemic issue the Commission would then be able to implement more specific measures through a further section 30R review.

ATM based service

6. The Commission also proposes to revisit the ATM performance obligations following the RBI2 implementation. We support the Commission considering linkages between UBA investment and pricing, and RBI2 investment. The two are inextricably linked.
7. However, the RBI2 process could last an extended period and the outcome is not certain – leaving 19,000 end users sitting on poor performing services and resulting in uncertainty for Chorus and competing RBI2 investors. The RBI2 process will deliver the best outcomes where it can focus on areas that are not already commercially viable or funded through existing regulated pricing. Accordingly, the Commission should require Chorus to publish (or provide to it as part of its monitoring powers) ATM investment and asset lifecycle plans, setting out baseline plans and investment that RBI2 would be expected to build on. Further, it should set out the principles it will apply to the subsequent review – reversing out any RBI2 grants that displace or are a double up of FPP implied investment.

¹ Chorus Congestion Free Networks, Technical white paper, September 2016

8. In previous submissions we mentioned:
 - a. An ATM UBA pricing issue whereby Chorus was limiting UBA service throughput of the ATM based network to 75kbps per customer at the handover, applying a separate and additional charge for additional capacity above the 75kbps; and
 - b. That in certain cases Chorus imposed tail extension charges for some handovers that required RSPs to pay for expensive tail extensions from one exchange to another distant exchange, charges which RSPs cannot avoid.
9. We do not consider such additional charges are permitted under the STD and will be taking these issues up with Chorus. Nonetheless, for the benefit of the wider industry and smaller operators in particular, the Commission may want to clarify these matters in the final decision.

Introduction

1. Thank you for the opportunity to comment on the Commission's UBA s30R review of Chorus' Unbundled Bitstream Access service draft determination (**the draft**).
2. We support the proposed general approach set out in the draft - the UBA service should evolve over time so that it remains "fit for purpose". The UBA service should be uncongested and include the VDSL variant, and the new 10GE handover option reflects currently deployed technologies. Where the Commission has decided not to amend the STD, the clarifying comments in the draft provide helpful guidance and should be confirmed in the final decision.
3. In this submission we recommend that the Commission consider further the practical implementation of an uncongested service and provide for greater transparency of Chorus' ATM based service asset management plans.

The UBA service

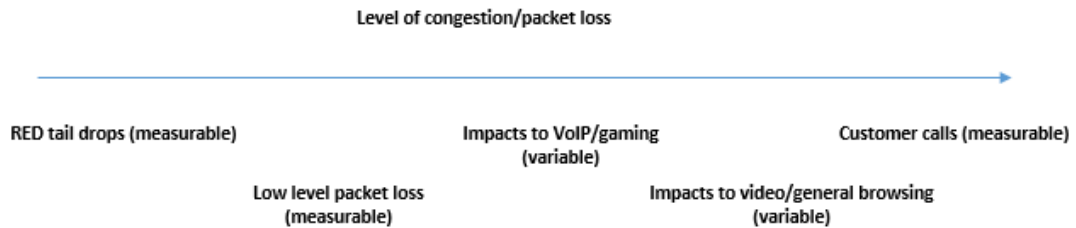
4. The draft sets out that a "fit for purpose" UBA service should deliver an appropriate quality of service suitable for a range of general internet use - the service should provide a platform on which access seekers can develop competing, differentiated retail services which meet the current and future needs of end-users.
5. End-users' needs have been changing over time, and therefore the regulated service should change over time as well. A regulated UBA service that keeps pace with end-users' needs will best meet the section 18 purpose. The way that the Commission has clarified that the UBA service should be an uncongested service and includes VDSL variants, and proposes to add a higher capacity 10xGE handover option does give effect to the purpose in a way we think is pragmatic and effective.
6. While we agree with the Commission's proposed approach, it may wish to consider further how it expresses the commitment to provide an uncongested network and addresses ATM lifecycle concerns.

Proposed LAP utilisation cap

7. The draft proposes to clarify that the UBA service is an uncongested service, and that Chorus should operate the service so that no LAP exceeds 95% average utilisation over a 15 minute (with a carve out for the ATM based DSLAM network). The Commission expects that Chorus will operate the network at lower levels of utilisation in practice. As noted in the draft, Chorus already operates a congestion free network, and RSPs supported the principle.
8. We agree that the UBA service should be an uncongested service, and that focusing on platform utilisation is a pragmatic way of reflecting this commitment. Competition and end user experience should not be impacted by congestion.
9. However, we recommend that the Commission consider further the proposed 95% utilisation cap. There is no bright line utilisation point at which end user performance starts to deteriorate. The nature of data traffic means that as measured utilisation of the link approaches capacity – i.e. average utilisation over a 15 minute period as a percent of the technical capacity of a link - the worse the end user experience becomes as traffic is peaky within the measurement period and demand will exceed link capacity. In other words, at higher levels of reported utilisation over a 15 minute period, within that period there will be an extended period over which end users will experience a significant service degradation. Generally, the shorter the measurement period – i.e. 5 minutes or less – the more reflective of actual performance the utilisation measure will be.

10. It's difficult to draw a direct link between link utilisation, packet loss and customer service experience. Generally, with congestion end users initially experience slower broadband speeds, and then poor video or gaming experience as latency and packet loss increases. In terms of operating the network, we can measure packet loss and customer calls, but impacts to VoIP/gaming and video/general browsing are highly variable. These differ by application and the tolerance of the customer to degradation, so we've never been able to put a number on what an "acceptable" experience is, i.e. the level of packet loss which is unacceptable.

Diagram 1: implications and measureable effects of congestion²



11. This measurement difficulty means that:
- a. Operators generally set maximum link utilisation based on practical experience of the relationship between utilisation and recorded packet loss, customer experience feedback (i.e. complaints) and service design objectives (i.e. the target quality of the service); and
 - b. The Commission should, accordingly, look to operators' commercial practice for evidence of what is necessary to support an acceptable end user experience.
12. Spark operates its network so that it triggers a project to augment capacity when link utilisation reaches 70% to ensure that no link exceeds 85% utilisation. Chorus also notes in its September 2016 white paper that it aims to keep link utilisation within the green sub 70% utilisation range, and if a link exceeds or is expected to exceed this range that capacity investment will be expedited to return the link to green as soon as possible³. The draft sets out that consistently RSPs operators dimension networks to remain at utilisation levels of less than 85%. The trigger for initiating a project to add capacity will vary by operator depending on demand growth and augmentation lead time.
13. While we support the proposed focus on utilisation, the proposed 95% cap is unlikely to be the most effective way to ensure Chorus maintains an uncongested network. The utilisation cap would leave Chorus with an incentive to maximise utilisation (subject to a small margin to address the risk that it inadvertently exceeds the cap) rather than to maintain a congestion free network. If Chorus were to operate the network at close to 95% utilisation, UBA service performance would be significantly worse than currently offers and our experience is that the UBA service will likely be unusable at peak times for end users.
14. Therefore, rather than an outlier cap, we recommend that the Commission consider measures that encourage Chorus to ensure link maximum utilisation remains below 80%. This could be by the Commission providing for all of the following:
- a. Setting out an STD requirement that Chorus provide an uncongested UBA service; and

² RED is random early discard.

³ Chorus Congestion Free Networks, Technical white paper, September 2016

- b. Setting out the expectation that – in practice – this implies that utilisation not exceed 80% on any LAP under normal operating conditions. This is consistent with Chorus’ planning objective that ensures no link exceeds 70% utilisation under normal operating conditions, and RSPs reported 85% maximum utilisation targets.

The Commission should impose a lower LAP target, as these links have less potential aggregation than obtained by RSPs for handovers and core links. The Commission should further take a conservative approach, initially setting a lower utilisation threshold, as actual UBA service performance will determine the maximum end user performance for the industry and risk limiting competition on the basis of service performance; and

- c. Requiring, in addition to Chorus individual LAP utilisation reporting as proposed, additional performance and capacity reporting on links exceeding 70% utilisation (it is from this point that capacity augmentation should be planned and congestion is possible). Weekly reporting should include link performance (packet loss) and when congestion will be resolved.
15. If the reporting suggests a systemic performance issue, the Commission could then consider more specific performance obligations through a further s30R review (informed by the above reporting).
16. If a further s30R review were necessary, the Commission could also consider a shorter reporting interval. A shorter reporting period than the proposed 15 minute intervals would be more reliable and preferable, but we appreciate the Commission has no data to determine the effect of this change. Accordingly, if the Commission were to come back to this issue in any case, Chorus should provide performance data over a variety of interfaces with a view to moving to 5 minutes if necessary to sustain an uncongested network.

ATM lifecycle management

17. The draft also proposes not to specify a performance obligation for the 19,000 end users remaining on the ATM based UBA service:

164. We requested further information from Chorus in order to greater understand the scale of congestion on its ATM network on 5 September.¹¹² The confidential information provided by Chorus showed that a large number of the 19,000 end-users remaining on Chorus’ ATM network currently experience congestion, or will in the near future.

18. Chorus will be required to report on specific LAPs with high utilisation. We agree, under all scenarios Chorus should be obliged to report on link utilisation, and packet loss and expected dates to add capacity. Proposed transparency and reporting of specific links nearing capacity will help with the day to day management of - and setting expectations for - impacted customers. However, the proposed approach leaves medium term service performance for the 19,000 customers in limbo, and the ATM based service potentially disconnected from FPP pricing and RBI2 initiative.
19. The Commission proposes to revisit the ATM performance obligations following the RBI2 implementation. We support the Commission considering linkages between UBA investment and pricing, and RBI2 investment. UBA service performance is inextricably linked to efficient FPP pricing, and to RBI2 grant funded investment. The UBA regulatory pricing model anticipates service performance that the ATM network does not currently support, and ongoing investment in modern technologies and fibre backhaul. Where price and service performance remain disconnected, the FPP price cannot be considered efficient.

20. The FPP price funds ongoing investment that should result in actual UBA service performance approaching the modelled performance over time. Otherwise, as InternetNZ noted at the workshop, UBA service performance would be disconnected from price and cannot be considered efficient or in the long term interests of end users. While we accept that the FPP provides little guidance on the rate at which this investment should be made, the Commission must be satisfied that over time the delivered service will align with the FPP model characteristics. In other words, if the Commission does not expect UBA service performance to approach that implied by the model over time, then the UBA FPP price cannot be considered efficient.
21. Accordingly, the Commission should expect Chorus to be investing year on year in this network to improve service performance, and this investment shouldn't replace - or be displaced by - RBI2 grant funded investment. RBI2 investment would build on commercial and existing regulatory funded investment - extending coverage or performance beyond that already implied and funded by current UBA pricing. Further, failing to take account of RBI2 grant funding – unless truly incremental to that implied by the FPP price - will result in double recovery and inefficiently high prices. Therefore, we agree the UBA relationship to RBI2 requires further consideration.
22. The Commission proposes to consider these issues after RBI2 decisions have been made. However, the RBI2 process could last an extended period and the outcome is not certain – leaving 19,000 end users sitting on poor performing services and uncertainty for Chorus and competing RBI2 investors. The RBI2 process will deliver the best outcomes where it can focus on areas that are not already commercially viable or funded through existing regulatory pricing.
23. Accordingly, the Commission should require Chorus to publish ATM investment and asset lifecycle plans, setting out baseline plans and investment that RBI2 would be expected to build on. Further, it should set out the principles it will apply to the subsequent review. For example, that it will reverse any RBI2 grants that displace or a double up of FPP implied investment.

Other issues

ATM additional charges

24. In previous submissions we mentioned:
 - a. An ATM UBA pricing issue whereby Chorus was limiting UBA service throughput of the ATM based network to 75kbps per customer at the handover, applying a separate and additional charge for additional capacity above the 75kbps; and
 - b. That in certain cases Chorus imposed tail extension charges for some handovers that required RSPs to pay for expensive tail extensions from one exchange to another distant exchange, charges which RSPs cannot avoid.
25. The draft helpfully clarifies that UBA service throughput should not be artificially capped, the regulated price is sufficient to compensate Chorus for upgrades to the UBA service and that no additional upgrade incentives are necessary. Further, any ATM operational matters relating to capacity management can be progressed through the Operational Manual clause 9 process.
26. We do not consider such additional charges are permitted under the STD and will be taking these issues up with Chorus. Nonetheless, for the benefit of the wider industry and smaller operators in particular, the Commission may want to clarify these matters in the final decision.

Transparency of Chorus' systems and service level terms

27. The Commission proposes not to make the operational changes on the basis that the UBA STD already sets out a process for Chorus and access seekers to resolve potential issues related to the UBA operations manual.
28. We had proposed to address transparency concerns relating to provisioning events, fault events, diagnostic tools and processes through operational changes and changes to the STD:
 - a. That address underlying Chorus incentives to minimise investment in operational processes. For example, the STD General Terms and price list make access seekers and end users responsible for reporting faults that cannot be confirmed to be present or attributable to the Chorus network, when we know that NFF volumes are driven by the quality of the access network and Chorus operational decisions. Our preference is to rebalance incentives so that the costs of Chorus operational and investment decisions are internalised to Chorus; and
 - b. To avoid Chorus withholding functionality that is available with deployed technologies. For example, Chorus indicated during the Boost proposal that it would withhold UBA network reporting and optimisation information unless access seekers agreed to take the commercial service.
29. We support the proposed amendments to clause 9, and the Commission has provided helpful guidance in terms of its expectation that UBA operational processes be 'fit for purpose' and The principles if would apply to operational matters put to it, i.e. its expectation that Chorus will make any information requested by access seekers available unless Chorus has relevant reasons not to do so, and the parties will work towards practical, efficient, flexible and balanced outcomes.
30. The Commission's proposed approach will support future discussion of operational matters. However, it's likely that without addressing the underlying incentives there will be residual issues that need to be referred back to the Commission. Accordingly, we recommend that Commission staff remain across any subsequent work to speed up resolution of possible residual matters.

END
