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Vanessa Oakley
Acting Assistant General Counsel
Competition and Regulatory
Telecom New Zealand
PO Box 570
Wellington

Grant Forsyth
Manager, Regulatory and Industry Affairs
TelstraClear Limited
Private Bag 92143
Auckland

Dear Grant and Vanessa

**TelstraClear Bitstream Application
OSS and Technical Workshop Agenda and Questions**

1. The Commission will hold a two day workshop on the TelstraClear Bitstream Application on 21 - 22 July at the Commission's premises in Wellington.
2. This workshop follows on from the Commission conference held on 4 - 5 July. At that conference, the Commission advised that it intended to hold a further public workshop on two matters: (i) the technical issues relating to the delivery of the bitstream access service, and (ii) Operational Support Systems ("OSS").
3. The following table sets out the Commission's proposed agenda for the workshop. This schedule may be amended during the workshop should further time be required to discuss each issue. Regular breaks will be provided during these sessions.

| Day One - Thursday 21 July 2005 | |
|--|---|
| 9.00 – 12.30 | Technical aspects of the bitstream access service |
| 12.30 – 1.30 | Lunch |
| 1.30 – 5.00 | Technical aspects of the bitstream access service (continued) |
| Day Two – Friday 22 July 2005 | |
| 9.00 – 12.30 | OSS |
| 12.30 – 1.30 | Lunch |
| 1.30 – 5.00 | Technical aspects of the bitstream access service (continued) |

4. The workshop is intended to be relatively informal and will be held with Commission staff. Commissioners will not be present. In respect of technical matters, the Commission has engaged John Emanuel from Azimuth to provide technical advice. John will also attend the workshop.
5. The workshop will be restricted to discussion of the technical issues with respect of the bitstream service and proposed OSS within the scope of the application. It is not proposed that the initial pricing principle, price discrimination or the relevant market and competition analysis be discussed.
6. The workshop will be run on a thematic basis, with each party having an opportunity to present on the questions raised. A list of questions that Commission staff propose to discuss at the workshop is attached. As the questions are indicative only, the parties are invited to provide submissions on the broader matters addressed by the questions and not simply on the question itself.
7. Where a party makes reference to, or quotes from, or otherwise relies on documentary evidence, Commission staff request that the party supplies that documentary evidence to the Commission and attendees at the workshop.
8. Please advise us in advance if you intend to present Restricted Information (as defined under the TelstraClear Bitstream Application Confidentiality Order) at the workshop.
9. It is intended to be a public workshop and accordingly parties with a material interest to the bitstream proceedings are also invited to participate. A copy of this letter and questions will be provided to all interested parties and placed on the Commission's website.
10. The proceedings will be recorded and a copy of the transcript will be made available to both parties. That recording will be the definitive record of the workshop proceedings.
11. Can you please confirm who will be attending the workshop from your organisation prior to 18 July 2005.

Yours sincerely



Osmond Borthwick
Manager
Network Access Group

PROPOSED OUTLINE FOR THE TELSTRACLEAR BITSTREAM WORKSHOP

TECHNICAL ASPECTS OF THE BITSTREAM ACCESS SERVICE

1. In the draft determination, the Commission's key conclusions were that:
 - Telecom would be required to provide a bitstream access service to TelstraClear with a non rate-shaped downstream speed up to the maximum capacity of the DSLAM, and an upstream speed of 128kbps;
 - Telecom would be required to supply TelstraClear with bitstream access with no material difference between the network characteristics supplied to TelstraClear and bitstream used by Telecom to supply its own retail services; and
 - Telecom would be required to provide reporting of key service parameters to ensure consistency of service is achieved.
2. The parties have identified specific network management issues that arise from the service specification set out in the Commission's draft determination. For the purposes of the workshop, the Commission has identified those areas that it considers to be the key technical issues and the following provides a preliminary view on how the Commission proposes to deal with such issues in its determination.
3. In addition to discussion of these issues, the Commission intends to discuss the key service parameters necessary to measure consistency with its determination, and the nature and scope of the auditing process.

UTILISATION OF SHARED RESOURCES

4. The Commission's preliminary view is that the key technical issues can be reduced to a set of specific issues that arise from TelstraClear's access to the following shared resources:
 - cable sheath spectrum; and
 - the DSLAM and the connection between the DSLAM and its parent ATM switch.

Cable Sheath Spectrum Management

5. ADSL systems working in a cable interfere with all other systems working in the same cable. The degree of interference depends on the transmitted signal power, the length of the exposure in the cable and the proximity of the cable pairs in respect to the bitstream service.
6. Although ADSL systems are designed to cope with this interference operators must manage the way they set-up ADSL systems so that they can optimise a trade-off between reach, quality of service, speed and customer numbers. Both parties have identified that management is necessary to minimize the adverse impacts of interference.

7. In countries with unbundled local loops, operators must generally live within a transmit level versus frequency “mask”. Typical masks are described in the following two standards:

- ANSI T1.417 – 2003
- ACIF C559: 2005

Limiting the transmitted power usually limits the practical reach of an ADSL system.

8. The Commission understands that Telecom follows a spectrum conservation approach, by limiting the operating speed of the ADSL link to the value of the contracted service speed to maximize reach.

Potential spectrum management solution

9. In its cross submission, TelstraClear suggested that lines with a noise level exceeding 42dB could be rate limited. The Commission’s preliminary view is that this approach is based on a cable pair qualification process and would not address the spectrum management issue identified by both parties.

10. The Commission seeks parties’ views on:

- a transmitted power management regime based on:
 - speed and distance
 - operating procedures designed to minimize interference
- Transmission issues including an impact on Telecom’s existing long line customers

Interleaving

11. Telecom submits that when interleaving is turned off it is possible that a customer modem / DSLAM will transmit at a higher power and cause additional interference. The Commission seeks further clarification of the likely nature and extent of this risk.

12. In its cross-submission, TelstraClear suggests that this issue can be dealt with at the workshop as a part of a general spectrum management approach. One possible approach would be that interleaving “off” should be available for below a particular downstream speed for example of 1.0Mbps and less.

13. The Commission seeks parties’ views on whether such an approach would mitigate the risk.

DSLAM Shared Resources

14. Telecom has submitted that unconstrained access to DSLAM resources can affect service to its various customer segments, and that there are design, management and cost issues that arise from the proposed shared access.

15. The Commission seeks parties views on:

- the nature of these design, management and costs issues; and
- How sharing of resources can be managed (four options are provided below)

Physical separation

In its cross submission, TelstraClear submits that 'Prudent management practice would include using separate DSLAMs for *best efforts* and higher grade services as TelstraClear expects Telecom increasingly will with the introduction of services such as One Office.'¹

Logical separation of best efforts and other traffic

The Commission understands that, with the exception of Telecom's Nokia DSLAMs, it would be possible to logically separate higher-grade services from best efforts services.

Logical separation of Telecom and TelstraClear best efforts traffic

The Commission understands that it would be possible to establish a separate virtual path (VP) for TelstraClear's bitstream access traffic from the DSLAM to the first ATM switch. The initial bandwidth of the VP would be set to the peak information rate (PIR) of the fastest virtual circuit.

Under this scenario, Telecom would have to initially provide for example a 5 Mbps VP, for just one customer. (i.e. 3 to 5% of the available bandwidth). Over time, as TelstraClear's market share increased, this matter ceases to be an issue as many customers will share the VP.

Sharing of a best efforts virtual path

In the first instance efficient network usage might require that TelstraClear and Telecom traffic share a single VP between the DSLAM and the first ATM switch where Telecom manages traffic flows in this VP.

PROPOSED REFINEMENT TO SERVICE PROPOSAL

16. The Commission's preliminary view is that:

- the bitstream access line speed should be allowed to go to the lower of the:
 - copper cable capability;
 - spectrum management cap; or
 - DSLAM backhaul capacity.

¹ TelstraClear, Cross-submission on draft determination, para. 72

- the minimum speed per end user at peak congestion should be set to an **average allocated throughput per user** (set at individual DSLAMs);
- the L2TP Access Concentrator (LAC) congestion manager should be set to an agreed nominal PIR value; and
- Interleaving “off” should be available for speeds of 1.0Mbps and less.

17. The Commission seeks the parties’ views on:

- whether such an approach is likely to mitigate the issues of interference and reach to customers a long distance from the exchange;
- whether there would be any material difference in the serviceability of distant customers in later years as cable fill and therefore noise increases as the result of provision of a circuit using the proposed TelstraClear bitstream service, rather than provision of broadband by Telecom to its retail customers;
- whether such an approach would be operationally practicable having regard to the access provider's network;
- whether the use of an “average of the minimums” provides incentives for innovation (for example, TelstraClear can itself choose to sell low contention business grade services, or high contention rate residential services);
- whether the minimum speed at peak congestion set at an average should be:
 - not materially different from Telecom’s minimum speed at peak congestion averaged over its internet-grade best efforts customers; or
 - not less than 32kbps consistent with the bitstream access service description.
- whether such an approach would preserve incentives to optimise bandwidth usage on the UBS component of the end to end service;
- how such an averaging process might be managed initially where TelstraClear does not have a significant number of customers, or single customer, at each DSLAM;
- whether it is necessary to create exceptions for Nokia DSLAMs;
- the time it would take to implement such an approach in the respective networks;
- whether an independent third party should project manage the implementation of the proposed approach (similar to that used by Ofcom to implement local loop unbundling).

NETWORK MEASUREMENT

18. In its draft determination, the Commission's preliminary view was that Telecom should be required to provide reporting of key service parameters to ensure consistency of service is achieved. Appendix A set out a list of the proposed network performance measurement parameters including:
- Contention ratio;
 - Jitter (also known as *Delay Variation*);
 - Packet loss;
 - Latency (also known as *Packet Transfer Delay*);
 - Bitstream additional limits on access principles (a), (b) & (c);
 - Interleaving; and
 - Service availability.
19. Telecom noted that, on the basis of the Commission's draft determination, it would not be feasible to compare the proposed service on the basis that the characteristics of the proposed service will not map onto a Telecom retail service, and accordingly, such measurement would be invalid.
20. The Commission understands that profiling for the provisioning of the last ATM to the DSLAM is done at the Broadband Remote Access Server (BRAS) on the last ATM, where the virtual paths are set up for each profile ie UBR, PON, and other services. The Commission also understands that the BRAS in Telecom's ATM's are capable of setting modifying the traffic flow of IP packets depending on their destination.
21. The Commission seeks the parties' views on the following:
- the minimum measurement metrics necessary to demonstrate that there is no material difference between the network based characteristics supplied to TelstraClear and bitstream used by Telecom to supply its own retail services;
 - any network characteristics that are material for an access seeker to deliver and market the bitstream service to end-users;
 - whether parameters such as Latency, Jitter, and packet loss be measured on a one way trip i.e. to the end user;
 - the location at which the metrics should be measured;
 - the time period the parameters should be measured over;
 - the frequency of measurement e.g. quarterly, six monthly;
 - the appropriate sample size; and
 - the nature and scope of an independent auditor.

OPERATIONAL SUPPORT SYSTEMS

1. In the draft determination, the Commission set out the following principles:

...Telecom is accordingly required to provide a level of operational support to TelstraClear, whether manual or automated, such that there is no material difference in provisioning or fault repair in regard to the experience of retail customers whether retail services reliant on bitstream access are supplied to TelstraClear or Telecom.²

The Commission expects that any further detailed implementation matters required to be dealt with to give effect to the overall OSS standard set by the Commission will either be agreed by the parties or will be dealt with by the TCF churn code. In respect of any residual operational support issues that the parties are unable to agree upon, either party may seek further resolution from the Commission.³

2. At the conference, Telecom advised that it would be publishing on its website an update on the OSS roll-out in July.⁴ Telecom is requested to provide an update on the date of the project deliverables for existing work and proposed future enhancements of eOR for broadband including B2B such as those set out in Annex E of Telecom's 8 June cross submission.

Commission staff intend to discuss in further detail each item of Annex E at the workshop.

3. Is there any technical limitation that would inhibit Telecom from providing an electronic file transfer system similar to that which the Commission understands is currently in place for resale of business and residential lines for the bitstream service? i.e. using a batch transfer in xml format.
4. What are the current processes for fault handling for wholesale customers? How are faults handled for retail Jetstream customers? To what extent is faults handing automated?
5. On what basis are the decisions made in respect to the cost effectiveness of implementing additional functionality and user requests for the eOR system?

TelstraClear is invited to provide comment on the reasonable functions and capabilities not currently available in eOR for broadband as per Annex E which are justified in terms of scope and operational efficiency to do so.

² Commerce Commission, TelstraClear Bitstream Draft Determination, 21 April 2005, p. 54

³ *ibid*, p. 55

⁴ Conference Transcript, 5 July 2005, Mark Corbitt, p. 273