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Norm O'Doherty
General Manager
Consumer Affairs Branch, AUSTEL
Jetset Centre
5 Queens Road, Melbourne, 3004

Report on Telecom Australia's Service Verification Tests (G.001)

Dear Norm

Please find attached my report on Telecom Australia's Service Verification Tests in accordance with consultancy agreement specified under contract number 2060.

Should you require any further information or assistance please do not hesitate to call me at the above number.

Yours sincerely

Michael Rumsewicz

Report on Telecom Australia's Service Verification Tests (G.001)

Michael P. Rumsewicz

Executive Summary

This report is provided in response to AUSTEL's request for external assistance in reviewing the engineering, methodological and statistical issues arising from Telecom Australia's Service Verification Tests (as documented in General Information Paper G.001, Service Verification Tests for Telecom's PSTN, Reference [1]).

Quoting from G.001, the service verification tests have been developed:

> *"... as the basis upon which a telephone service at the Service Delivery Point may be considered to be operating satisfactorily at the time the tests were conducted."*

The report focuses upon four areas as specified in the consultant's brief (Attachment 1):

- Reasonableness of national targets for call connection and call continuity / call dropout and how these are impacted by network modernisation.
- Reasonableness of performance targets for individual customers and how these are impacted by variations in network equipment type / generation and time of day traffic variations.
- Statistical validity of individual verification tests based upon test call sampling
- The acceptability of Telecom Australia's General Information Paper G.001 describing the tests.

The main findings of this analysis are:

- Telecom Australia's national targets for call connection are more stringent than internationally accepted guidelines (E.721).
- Telecom Australia does not appear to have a documented national call continuity / call dropout target (no specific reference is provided in G.001). It is recommended that such targets be developed in order to more comprehensively monitor customer grade of service.

- The individual customer performance targets employed by Telecom Australia appear to be reasonable given the current stage of network evolution. Tightening of these targets may be appropriate as network modernisation nears completion.

- Customer calling profiles (which provide the basis of the Service Verification Test test calling pattern) would be more accurately determined through the use, for instance, of Tekelec / CCS 7 equipment or, in the case of 008 / 1800 subscribers, customer billing records. The actual technique employed (including customer consultation as presently performed), however, should be determined on a case by case basis dependent upon technology, timeliness and resource constraints, with the additional proviso that customer confidence in the test be assured.

- The service verification tests performed by Telecom provide sufficient information to quantify, to a reasonable degree of accuracy, the call connection performance of the network. However, the statistical test being applied to the data is inconsistent with the goals of the testing as stated in Telecom's Customer Fault Management Process (000 841, Section 5.4.6) and AUSTEL's report, The COT Cases (April, 1994).

  An alternative statistical test, using the same data, is proposed in this report. We note that the alternative statistical test would also have been passed when applied to the data obtained in service verification tests performed to date.

- The General Information Paper G.001 overall provides an adequate and easy to understand description of service verification tests.

Beyond the scope of the consultancy brief, we also make the following observations:

- Service Verification Tests may at some stage need to be designed for other services (for instance, ISDN and mobile).

- In a multi-service deliverer environment it may be necessary to have an independent set of generic tests (endorsed by AUSTEL) to address difficult network faults in an equitable fashion across all service deliverers.

- In a multi-service deliverer environment, calls will be originated in a number of different networks to difficult network fault customers. In compiling testing profiles to mimic customer calling patterns, it may be necessary to send test calls through a variety of service deliverer's networks. Safeguards would need to be in place to protect the interests of the various parties with respect to information collected in such a fashion.