

# Report on Survey of NREN Client/User Service Level Agreements

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Date: 20/3/07

Version 1.0

## Introduction

The TERENA Task Force on Life Cycle and Portfolio Management (TF-LCPM) undertook as a deliverable to look at the area of Service Level Agreements and how they are currently offered by NRENs to their clients or users. A survey targeted at members of the task force took place in August 2006. The Task Force aims to use the information gathered to provide a best practice process for NRENs who are considering introduction of SLAs. Ongoing collection and analysis of SLA terms is outside the scope of the group.

## Survey Format

The aim of the survey was to find which NRENs active in the Task Force had SLAs, to which services and client/user sectors these applied and what specific terms were included. For the purposes of the survey, an SLA is defined as a *formal* agreement between an NREN and client to provide a *specified* minimum level of service.

A sample of services was selected based on the service categories identified by the Task Force work area on Service Portfolios<sup>1</sup> and client/user segmentation based on the Terena Compendium 2006 Questionnaire<sup>2</sup>. The specific services selected were:

- Network & connectivity services
  - IP: research/education traffic
  - IP: commodity Internet access
  - Quality of Service/Bandwidth on demand
  - Point-to-Point Circuit (National)
  - Point-to-Point Circuit (International)
  - VPN
  - IPv6
  - Multicast
  - Helpdesk/NOC contact service
  - IP/DNS Registration
- Security services
  - CSIRT - CERT:
  - Authentication & "Mobility" services
  - Authentication & Authorisation Infrastructure
- Housing - Storage – hosting – content delivery services

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<sup>1</sup> [http://www.terena.org/activities/tf-lcpm/wa\\_portfolios/NRENServicecategories\\_v20060413.pdf](http://www.terena.org/activities/tf-lcpm/wa_portfolios/NRENServicecategories_v20060413.pdf)

<sup>2</sup> [http://www.terena.org/activities/compendium/TSec\(06\)019Compq.rtf](http://www.terena.org/activities/compendium/TSec(06)019Compq.rtf)

- Webhosting
- Hot Standby
- Housing /co-location facilities
- E-mail hosting
- Other

These selections were chosen to reflect a range of services with anticipated or actual NREN client/user demand for SLAs, services with possible international co-operation, services where an NREN might be considered to have competition from the private sector and advanced services not currently offered by the private sector.

The survey was circulated to members of the TF-LCPM mailing list in the form of a spreadsheet and respondents were asked to indicate for each service and client segment if they currently offered an SLA, currently offered a less formal agreement and/or were currently considering offering an SLA. Space for free text comments was included. For each SLA/equivalent agreement, respondents were also asked to provide the service terms of the agreement, how compliance to the SLA was measured in terms of the service definition and tools and what actions would be taken in the case of non-compliance. Finally, all respondents were asked if their NREN would be interested in trialling a TF-LCPM best practice process for SLA provision.

## ***Summary of Responses***

Eight NRENs responded with a good range of in-house and out-sourced services. Of these eight NRENs six already have SLAs in place for at least one service. The remainder had less formal agreements. No NREN covered or intended to cover all services to all sectors listed with an SLA. NRENs, with or without SLAs noted a measurably consistent high level of service was offered.

Some NRENs had different SLAs for different classes of customers. In addition, SLAs themselves are agreed with differing parties, e.g. with independent metropolitan area networks, directly with connected institutions/clients or with the governments and funding bodies in respective countries and were not restricted to those actually directly experiencing the service. Government departments and Schools were identified as areas where different SLAs most likely to be offered by NRENs to the rest of their client base.

CERT services were identified as the service for which most respondents either had or were considering an SLA offering. Other priority areas for SLA offerings were Support and IP Connectivity. Of services where the commercial sector is not considered active, NRENs had SLAs for IP research/education traffic and for Point-to-Point Circuits (National and International), either had SLAs or were considering SLAs. Only one respondent was considering an SLA on Authentication & Authorisation Infrastructure. Not all respondents offered hosting services so there were insufficient grounds for comparison.

Availability expressed in terms of percentage per month was the most common performance indicator for services. Most respondents did not provide a particular figure for committed availability but where available, all offered 99% availability or

better. Other performance metrics for connectivity services were latency/jitter/delay, Bit Error Rate and packet loss. Response time was considered an important metric for Support, if this was offered. Nagios, internally developed scripts, MRTG, Netview and HP OpenView were listed as tools used to track compliance, primarily for IP Connectivity.

Two NRENs listed financial penalties as the consequence for not meeting an SLA. Reason for Outage reports and formal undertaking to improve compliance were other consequences detailed by respondents.

One respondent was not interested in trialling a best practice process for SLAs.

## ***Conclusions***

Even with the small sample size, it was evident that there are wide differences in how NRENs offer or intend to offer SLAs, depending on their local operating environment. In terms of SLA development, there is a need to differentiate between basic services such traditional IP connectivity and new connectivity services such as point-to-point and VPNs. The driving force behind SLAs for basic services may be the existence of SLAs in the commercial sector for equivalent services and the requirement to demonstrate quality and value in that context either to clients or to funding bodies. The driving force behind SLAs for new connectivity services is international co-operation e.g. GRID computing, ESA initiatives, and harmonisation of standards in these areas.

There was consistency in the performance indicators offered for connectivity services, focussing on availability, and in some cases, performance but it was not possible to meaningfully compare precise terms due to the small response rate. This underlines the difficulty experienced by multidomain organisations to get a defined level of service and highlights a possible commercial sensitivity of the information. On the positive side, the high quality of research networks is demonstrable so providing high quality guarantees is a possibility for any NREN with this requirement.

These factors have influenced the future work of the TF-LCPM, as instead of offering a single best practice, a number of case study processes will instead be made available for NRENs to adapt and use for their own needs.