

Service Level Indicators and Targets

REN SERVICE AGREEMENT - ANNEXURE C



The REN service to a Site of the INSTITUTION comprises the following services:

- **Intra-NREN Connectivity:** direct connectivity with Sites of all Participating Institutions;
- **Commodity Internet Access:** access to the Internet worldwide via peering and transit connections within South Africa and abroad;
- **REN Connectivity:** access to research and education networks and routes worldwide; and
- **Support:** network performance management services

Service Level Indicator (SLI) (Name, Description and Measurement)	Service Level Target
Service: Intra-NREN Connectivity	
<p>SLI Name: Availability</p> <p>SLI Description: The percentage of time over the calendar month for which "Layer 3" (IP) connectivity is present along NREN to NREN paths. It denotes a Site's capacity to transmit and receive datagrams in volumes consistent with the Site's order quantities (and, where appropriate, the order quantities of a destination site).</p> <p>SLI Measurement: A single path is unavailable for a given duration if "Layer 3 connectivity" is not present for the given duration, as reported by a Monitoring System or Service Desk. The aggregate availability of this single path in a given month is the percentage of time "Layer 3 connectivity" was present.</p> <p>Where a period of unavailability is followed within four hours or less by another period of unavailability that is demonstrably related to the preceding period then the intervening period of availability will be ignored for purposes of calculation.</p>	<p>≥ 99%</p>
<p>SLI Name: Reliability</p> <p>SLI Description: The average number of periods of service unavailability per month,</p> <p>SLI Measurement: As for availability, but counted as number of service breaks rather than percentage of downtime.</p>	<p>≤ 2</p>

<p>SLI Name: Mean Time to Restore (MTTR)</p> <p>SLI Description: The average of times in the given month taken to restore Intra-NREN Connectivity service losses due to failure of infrastructure directly providing the service itself.</p> <p>SLI Measurement: The TTR is the time taken to restore Intra-NREN Connectivity service starting at the point a loss of Connectivity Service was confirmed by a designated site contact and ending at the time the Connectivity Service was detected as restored. For the purposes of this SLI, a loss of service is confirmed if either (a) a report of such loss has been lodged by a site contact with TENET's service desk or (b) TENET's SOC has obtained confirmation from a site contact of the loss of service. TENET's SOC is obliged to respond to network alerts and seek such confirmations during SOC Support Hours.</p> <p>The MTTR is an average of TTRs for the service outages occurring in the given month.</p>	<p>≤ 8 hours</p>
<p>SLI Name: National Latency</p> <p>SLI Description: The average time, measured across a significant sample, for the transmission of IP datagrams from any point on the NREN to any other point and back again. This is sometimes called the "round-trip latency", as opposed to the "one-way latency".</p> <p>SLI Measurement: Normally measured by ICMP "echo request" and "echo reply" messages, appropriately graphed.</p>	<p>≤ 50 ms</p>

Service: Commodity Internet Access and REN Connectivity

(each taken in its own right)

SLI Name: **Reachability**

SLI Description:

The percentage of time over the calendar month for which "Layer 3" (IP) connectivity is present between all "TSN CE to Internet Demarcation Point" paths through the NREN.

"Layer 3" IP connectivity refers to the ability of the network to forward IP (or ICMP) packets from the CE of a Participating Institution to an "Internet Demarcation Point" which defines the point at which packets leave the NREN and break out onto the Commodity Internet.

SLI Measurement:

A single "TSN CE to Internet Demarcation Point" path is unavailable for a given duration if "Layer 3 connectivity" is not present, as reported by a Monitoring System or Service Desk.

The aggregate availability of this single path in a given month is the percentage of time "Layer 3 connectivity" was present.

The Service Availability of "Commodity Internet Access" for a given month is the average of the aggregate availabilities for each "TSN CE to Internet Demarcation Point".

≥ 99%

SLI Name: **International Latency**

SLI Description:

The average time, measured across a significant sample, for the transmission of IP datagrams from the gateway router at the point of exit in South Africa to the gateway router in Europe, *and back again*. This is sometimes called the "round-trip latency", as opposed to the "one-way latency".

SLI Measurement:

Normally measured by ICMP "echo request" and "echo reply" messages, appropriately graphed.

**≤ 260
ms**

<p>SLI Name: Mean Time to Restore (MTTR)</p> <p>SLI Description:</p> <p>The average time over the given month taken to restore Commodity Internet Access and REN Connectivity to the CE router of the institution.</p> <p>SLI Measurement:</p> <p>The TTR is the time taken to restore Commodity Internet Access and REN Connectivity to the institution, beginning at the point a loss of International and ReN connectivity was confirmed by a designated site contact and ending at the point service restoration was detected. For the purposes of this SLI, a loss of service is confirmed if either (a) a report of such loss has been lodged by a site contact with TENET's service desk or (b) TENET's SOC has obtained confirmation from a site contact of the loss of service. TENET's SOC is obliged to respond to network alerts and seek such confirmations during SOC Support Hours.</p> <p>The MTTR is the average of TTRs for service outages occurring in the given month.</p>	<p>≤ 8 hours</p>
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Service: Support

SLI Name: **Call Responsiveness**

SLI Description:

Proportion of service desk calls within a calendar month that are responded to within 30 minutes of being placed.

SLI Measurement:

A call is deemed to have been responded to if either TENET or its appointed service desk operator have provided acknowledgment of and feedback to the call via email or telephone within 30 minutes of the call having been placed with the service desk.

≥ 99%

SLI Name: **Availability**

SLI Description: The proportion of time in a given month for which the Service Desk was available for call placement.

SLI Measurement:

The Service Desk is deemed to be Available if a call may successfully be placed (via email or telephone) with no more than 5 minutes spent "On Hold" in the Service Desk PABX queue or the Service Desk Mail System queue.

Service Desk Availability is subject to the following exclusions, w.r.t. which the availability target will not be affected.

- a) Loss of Availability due to Force Majeure
- b) Downtime due to scheduled and announced maintenance

≥ 99%