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**Quality Excellence for Suppliers of  
Telecommunications Forum  
(QuEST Forum)**

**TL 9000  
Quality Management System  
Measurements Handbook  
GSI Example**

## 6.5 GSI Examples

### 6.5.1 Global Services Impact Philosophy

When considering the TL 9000 GSI measurement, it is important to remember that the intent of the measurement is to provide a more easily understood way of measuring service availability when the base line has moved into the greater than 99.99% range. The GSI measure shows the # of impact minutes (outage) for every million minutes of service. By using the one (1) million minute multiplier the measure will take a 0.000001% change in availability and assign it a more easily understood GSI value of 1.

### 6.5.2 Global Services Impact

TL Communications experienced three (3) critical outages in their IPTV service during a specific 30-day month (the reporting period).

- The first outage occurred in a core router and lasted for 5 minutes impacting 5,149 IPTV services units.
- The second outage occurred due to a card failure in a DSLAM and lasted 67 minutes impacting 287 IPTV service units.
- The third outage occurred as the result of a solar flare generated disruption of the source satellite signal that lasted 17 minutes and impacted 671 IPTV service units.

TL Communications has 937,953 active IPTV service units during this 30-day month (the reporting period).

Table 6.5.2-1 illustrates computation of the GSI measurement from the service impacting events described above.

**Table 6.5.2-1 Global Services Impact (GSI) For April**

Data Points	Subtotals	Calculation Results
<b>SMo = Minutes of Impact * Service Units Impacted</b>		
SMo1 = 5 * 5,149	SMo1 = 25,745	SMo = SMo1 + SMo2 + SMo3
SMo2 = 67 * 287	SMo2 = 19,229	SMo = 25,745 + 19,229 + 11,407
SMo3 = 17 * 671	SMo3 = 11,407	<b>SMo = 56,381</b>
<b>Smt = Minutes in the reporting period * Active Service Units</b>		
Smt = (30 * 24 * 60) * 937,953		<b>Smt = 40,519,569,600</b>
<b>GSI Result = (SMo/SMt)*10<sup>6</sup></b>		
GSI = (56,381 / 40,519,569,600) * 10 <sup>6</sup>		<b>GSI = 1.39</b>

Note: GSI includes outages (disruptions to service) regardless of root cause. This means outages caused by other service providers or third party suppliers are counted even if the service provider cannot control or influence service restoration.

A GSI result of 1.39 is equivalent to an Availability result of 99.999861%.

The data reported for the above example is shown in Table 6.5.2-2.

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**Table 6.5.3-1 Example 6.5.2 – GSI Data Table Report**

<b>Identifier</b>	<b>Value</b>
MeasurementID	GSI
SMod	56381
SMod	40519569600

#### **6.5.4 Frequently asked questions**

##### **6.5.4.1 What is a good GSI value?**

A lower GSI value is preferred.

**Table 6.5.2-1 GSI vs. Availability**

<b>GSI Value</b>	<b>Availability Equivalent</b>
1	99.99990%
10	99.99900%
50	99.99500%
100	99.99000%
500	99.95000%

##### **6.5.4.2 How do I find the Availability equivalent of a GSI value?**

$1 - (\text{GSI value} / 1,000,000) = \text{Availability}$