



Service Level Management and Agreement

What is Service Level Management (SLM)? SLM is "the disciplined, proactive ways used to ensure that adequate levels of service are delivered to all users in accordance with business priorities and at acceptable cost." Effective SLM depends on the service provider providing the particular service that the customer needs at agreed upon service levels.

SLM allows service providers and customers to set up pre-defined service expectations and performance measurement mechanisms to ensure that expectations are met. A Service Level Agreement (SLA) is the driver behind SLM's. SLAs are written contractual agreements between the provider and customers. Currently, customers will no longer accept SLAs that are complex, difficult to track and enforce. Simplicity is the key driving force for the success of an SLA.

Every SLA must have a clear definition of the products and services involved, and the expected SLA's must be based upon a given, clearly documented set of performance metrics, measurement / monitoring points, events and actions. The measured results, viewed as the Quality of Service (QoS) provided, is compared to the pre-defined SLA. Responsibilities in terms of actions, severity classifications, and response time commitments should also be clearly defined in the SLA. The quantified SLA monitored results and triggers will be used to determine the billing rates or to calculate the discounts due to the customer when service level commitments are not met.

Lucida Insight™ Integrated Network Management (INM)

SLAs can only be offered if the network offering the products and services is well understood and the overall network performance is well characterized. This is essential so that the service provider is well aware of the network's performance limits under all conditions.

Current TDM and WDM networks rely extensively on ring-based architectures to deliver high quality network performance. This may appear to be adequate from an overall general service delivery perspective; however, the equipment vendors' definition of a service is not the same as a service provider's definition. Hence the need for service level agreements arises.

Lucida Insight™ Integrated Network Management (INM) is a comprehensive and flexible management approach for various network technology, and vendor's proprietary Network Management Systems (NMS) interfaces.

Lucida Insight™ platform provides the essential correlation of network performance across the backbone, metropolitan or regional and local access networks to establish performance metrics. Along with these metrics, Lucida Insight™ enables the service provider to determine the limits of performance so that SLAs can be profitably structured to suit the service provider's revenue goals, as well as offering the customer very flexible, simple SLAs. Some of the performance management characteristics that Insight™ monitors and correlates are BER, SES, SEFS, ES, BBE, UAS and LDOP (if the network elements and the EMS's support it). The Insight™ platform also correlates information from across the network for MTBF and MTTR metrics resulting from events and actions, as well as network and service faults and alarms, to generate appropriate actions and triggers for business management and billing at a specific customer level, based upon established SLAs.

Given that not all service providers have deployed Network Management Systems (NMSs), overall network management is difficult and in most cases never deployed. Instead, most have stayed with Element Management Systems (EMSs). This makes it very timely for service providers to adopt business centric network management at a very competitive and attractive price using Lucida Insight™ platform. Currently, service providers want to be able to manage their

networks seamlessly, be they TDM (SDH or SONET), WDM, Wireless or IP.

Lucida Insight™ platform provides a unique, easy to use Excel spreadsheet directly linked to various EMS databases. Lucida Insight™ automatically collects, aggregates and correlates network and service performance metrics over different data sources distributed across the network. Only essential, business critical information is monitored, aggregated and correlated, and transferred to Lucida Insight™ SLA Manager. This also includes identification of customers and facilities. These actions are all managed and executed through specific application libraries.

Lucida also provides Lucida Insight™'s Software Developer's Kit (SDK), which provides an easy way to integrate different databases from different EMS's and other repositories that hold critical information for correlation. Lucida also provides Professional System Integration Services to help customers to achieve implementation goals with a reasonable cost and in a short timeframe.

Lucida Insight™ Service Level Management (SLM)

Lucida Insight™ SLM Application and Libraries provide an easy use Excel template to manage customer's SLM within the network. Lucida Insight™ SLM provides applications to collect, aggregate and correlate specific service-related information from the following data sources:

- ?? Customer Management Systems
- ?? Network Operations Centers
- ?? Service Problem Notification Centers
- ?? Billing Systems
- ?? Customer's Integrated Network Management System (INMS), or Lucida Insight™ INM Application Libraries

Lucida Insight™ SLM provides a very simple and flexible SLA template for Customers to specify and customize the requirements for the SLA, as well as for the service provider to implement the SLA, through a real-time, Web-based Excel template. This flexible definition and operation will allow easy user fine-tuning and modifications of the SLA template for any

specified application and also for service bundling. Customers view their SLA's via the Internet and a standard Web browser.

Lucida Insight™ SLM Application Library will interface with the Lucida Insight™ INM to provide a comprehensive monitoring system and supporting process for reporting on its service offering. SLAs should be considered a strategic tool for service providers in offerings to customers. SLAs help build trust and enhance relationships with your customers. SLA structuring, implementation and monitoring is achieved through extensive use of application libraries. This offers great flexibility in SLA implementation, modification and management

Lucida Insight™ INM and SLM platforms allow customers to define what data you need through drop-down menus on the spreadsheet. Then Lucida Insight™ automatically loads mission-critical data into your spreadsheet, as a pre-defined template or in any manner you define through a web based Excel spreadsheet. Any real-time data you choose to display is automatically updated in real-time as you work, without requiring a Web browser refresh. You can then freely manipulate these values in the spreadsheet, adding any formulas, new, or linked data through standard spreadsheet functions for empowered analysis and decision-making. You can then store this spreadsheet locally as an Excel spreadsheet or on the Lucida Insight™ server for archiving, sharing, or future reference.

Lucida Insight™ Core features

Lucida Insight™, Release 1.3, provides the base platform on which any number of business applications may be built. This release also includes specific real-time support for IP VPN's.

Lucida Insight™ R1 features provided:

1. Real-time database, which stores and manages your key business information
2. User-defined, web-enabled spreadsheet directly linked to the real-time database
3. Sorting and filtering functions that allow you to control what data is loaded into the spreadsheet from the database
4. Upload data from Excel to corporate database

- Library functions that automatically collect network utilization, performance, service quality, and customer information
- Historical trend data/graphs of utilization, performance, and service quality
- Business-action triggers, such as automatically sending out e-mail or sending a cell phone message based on a user defined event thresholds
- Graphs of key metrics tracked in the spreadsheet, with historical trends for utilization, performance, and service quality
- Software Developer's Kit (Java class APIs)

- End-to-end Performance
- Trending (various)
- Network Performance Metrics & Triggers
- Service Performance Metrics & Triggers
- Business Action Triggers
- Billing Triggers

INM Correlation libraries provided:

- | | |
|---------------------------|--------------|
| 1. Alarm | 2. Fault |
| 3. Facilities Performance | 4. Circuit # |
| 5. Customer | 6. Service |
| 7. Product code | 8. GIS |

Platform Requirements

Server :

- ?? Pentium III 400MHz or higher (1-2 CPU)
Win NT 4.0/2000Server/2000Advanced Server
DBMS (Oracle8/9, PostgresSQL, etc.)
- ?? Sun UltraSPARC 300MHz or higher (1-2 CPU)
Solaris8, DBMS (Oracle8/9, PostgresSQL, etc.)
- ?? Linux

Client :

- ?? Win 2000/XP/CE
- Internet Explorer 5.5+, Microsoft Excel

INM and SLM libraries provided:

- Network Performance
- Fault Information & Data
- Customer Information & Data
- Service Information & Data
- Account Information & Data
- Service Trouble Ticket
- Restoration Information
- Billing Information
- Service Performance
- Business Action
- Service Action

Service Management & SLA Templates provided:

- | | |
|-------------------|----------------------|
| 1. Customer | 2. Marketing |
| 3. Sales | 4. Maintenance Group |
| 5. Service Center | 6. Operations Group |

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INM & SLA algorithms & triggers provided:

- MTTR
- MTBF

