DataSheet

Dimetis BOSS LINK Manager®

Moves Real Time Video Over Any Network, On Demand, Quality Assured

The ability to provision, activate, and confirm high quality, high bandwidth video transmissions over wide area networks with disparate equipment and incompatible element/network control systems is a slow and inefficient process. As a result, higher revenue producing and higher margin video service availability continues to be very limited for carriers and broadcasters.

Dimetis BOSS LINK Manager® unifies network management across broadcast and telecom networks, enabling transfer of real-time, on-demand high bandwidth video with high quality, resulting in greater revenues with higher profit margins. Dimetis BOSS LINK Manager® is a technology and protocol agnostic Broadcast Operations Support System that provides a wide range of features and functionality, including point-to-point and point-to-multipoint connections for IP, HD-SDI, SDI, ASI, T1/E1, Ethernet VLAN & VPN, VPLS and VLL QOS environments. All network transmissions can be precisely configured, scheduled, bandwidth-managed and tracked, with automatic rerouting on path failures or conflicts. Dimetis BOSS LINK Manager® improves the management of service planning, enabling deployment in multi-service, multi-vendor, multi-technology/protocol environments.

System Level Features	System Level Benefits
Media integration platform	Unifies telecom and broadcast environments Integrates and automates provisioning, monitoring and quality assurance, reducing manual effort and error
Manager of managers or point solution	Hardware and software agnostic Coordinates with separate OSS/NMS/EMS/M&C platforms or interfaces with them as a media-centric management system
Linear and non-linear services	Supports all types of live video and media file transfers at various bandwidths
Real time inventory system	On-demand, ad-hoc management of high bandwidth services Guarantees closed-loop media assurance and fulfillment processes
Network visualization interface	Provides a graphical “big picture”, reducing operational complexity and error potential Filters and simplifies tables and technical details until needed
NGOSS, SOA-based design	Supports real-time processing and increases operational flexibility. Allows customization/adjustment of processes with seamless interface to external environments
Ad-hoc, virtual subnet provisioning	Provides immediate or scheduled virtual network user control.
Auto reroute intelligence	Guarantees fault-tolerant connectivity, supporting a variety of configurations
AJAX compliant clients	Zero footprint simplifies field control and management, allowing faster, lower cost upgrades

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Product Features

Network Configurations

- Nodes, Sites, local loops, customers

Provisioning

- On-demand/scheduled self provisioning

Network Maintenance Support

- Schedule maintenance for all inventory elements
- Reroute modeling for scheduled maintenance

Tiered User Authorization

- Distinct authentication levels

Consolidated Archive/History

- Logs, monitors & captures all connection events
- Summarizes/Exports log reports

Billing Data Export

- Periodic provisioning of XML-Files

SOA-Based Design (Service Oriented Architecture)

- Interface to outside applications & OSS
- Write own rules and applications

Bandwidth Management

- Aggregate, available & used bandwidth

Consolidated Inventory Management

- Cross-platform integration of any vendor
- Control, configuration & setup of all devices
- Fault monitoring with root cause analysis
- Real-time bandwidth & QOS control of any device

Order Management (Scheduling)

- Connection, bandwidth & transmission definition
- Consolidated booking of all network elements
- Automatic conflict resolution

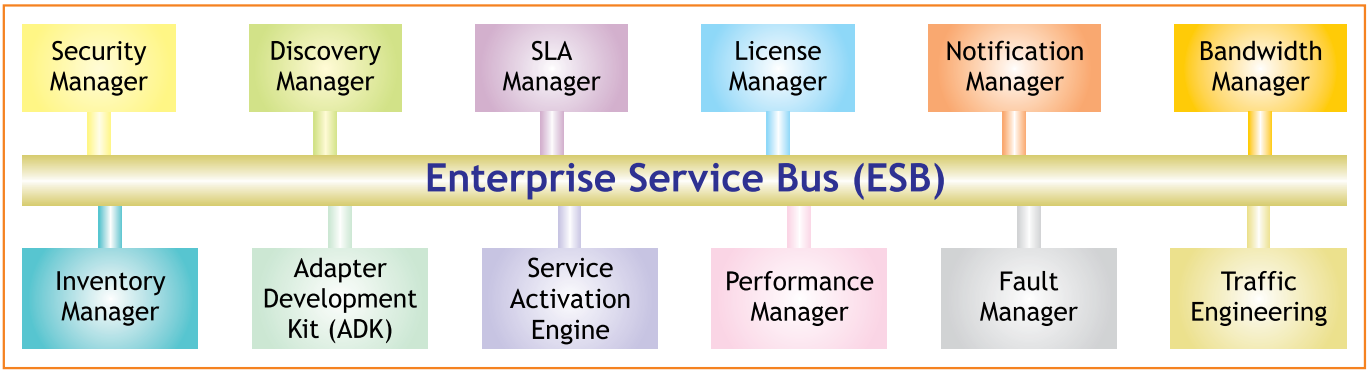
Connection Activation

- Permanent or on-demand with scheduling
- Network node and element control
- Manual or automatic modes with auto reroute on fault

Network Element Monitoring

- Node, port and connection monitoring
- In-band or out-of-band control
- SMS, text message & graphical display alarms
- User-definable (DWDM networks, media servers, etc)

Architecture Diagram



Dimetis BOSS LINK Manager® is Service Oriented Architecture (SOA) - based and is New Generation Operations Systems and Software (NGOSS) compliant supporting Tele Management Forum (TMF517) requirements.

Dimetis BOSS LINK Manager® consists of the following modules:

Security Manager

Security Manager authenticates users logging into the system and provides authorization details depending upon the access control list or permission provided to the user.

Discovery Manager

Discovery Manager provides the capability to discover the network elements irrespective of category. This is achieved through Device Adapter implementation which fetches different device data and updates the

database. It also supports scheduled discovery, auto discovery, and asynchronous discovery of network elements.

SLA Manager

SLA Manager defines, manages, monitors and takes corrective actions based on the performance of the network. The SLA Manager defines SLA at all layers including Device Level, Service Level, and Business Level.

License Manager

The License Manager enables users to define the licensable features and other licensable components. It allows users to encrypt or decrypt licensed content and also validates licensable attributes.

Notification Manager

- **Notification Engine**

  Notification Engine subscribes to all the BOSS Link Manager® modules and any external systems for notification through the JMS mechanism. It uses a configuration file to find out the list of notification sources and information needed to subscribe to the sources. On receipt of a notification, the Notification Engine executes a set of rules. Notification Engine also forwards the received notification to any external/internal systems to which it is registered.

- **Rule Engine**

  Rule Engine is responsible for executing the rules when thresholds defined by the modules in the BOSS LINK Manager® for various parameters are exceeded. Notifications are sent by the Notification Engine and executed by the Rule Engine for corrective action.

Bandwidth Manager

Bandwidth Manager enables bandwidth calculations and hides the complexity from the end user. Two types of bandwidth relationships are supported: Parent-Child and Peer-Peer.

Inventory Manager

- **Network Builder and Network Topology**

  Network Builder and Network Topology enable users to build and visualize networks. The administrator provides Network Builder the permission to define the features for each element in the network. Network Topology provides users the capability to define the device association across the sites and also the bandwidth relationship.

- **Equipment Template Builder**

  Equipment Template Builder provides functionality to support new devices. It allows users to define the hierarchy of the device object, parameters for each device and facilitates entry into the Inventory Management System. Most of the devices follow the hierarchy of System->Node->Rack->Shelf->Slots->Cards->Ports and each template will cater to a specific type and version of device.

Adapter Development Kit (ADK)

ADK enables users to develop device adapters to support new device types. It supports features such as static-binding, defining device capabilities [functionalities such as services] and provides performance statistics, etc.

Service Activation Engine

The Service Activation Engine handles configuration and activation of the product, service & resource and also executes the service templates/path per subscriber. It involves defining the work flow and the service catalog to include the services for activation. The Workflow Engine defines a service and its parameters according to adapter capabilities. The service catalog represents a single or aggregated group of components and related parameters that can be marketed and sold to customers.

Performance Manager

The Performance Manager enables periodic collection of quality metrics that characterize the performance of the network resources over service intervals. It also facilitates the visualization of trends that indicate periodic or gradual degradation of physical resources.

It allows users to set performance thresholds and raise alarms. The Performance Management module is made up of three main functional components – Data collection and storage, Monitoring, and Reporting.

The Fault Manager

The Fault Manager detects, isolates, prioritizes, and corrects malfunctions in the network. Fault Manager has an inbuilt fault correlation mechanism, which reports the root-cause and then takes corrective action.

Traffic Engineering

The Traffic Engineering module interacts with the Bandwidth Management module and suggests the best suitable service activation path based on bandwidth availability, number of termination points and other factors. The Traffic Engineering module allows users to calculate the possible service path, given a source & destination point.

Hardware Requirements

Software Instance	Hardware Required (Minimum)
Oracle 10g	2 GB memory, 80 GB HD (Scalable) with dual processor, server machine
Activation engine	2 GB memory, 80 GB HD with dual processor, server machine
Inventory engine	2 GB memory, 80 GB HD with dual processor, server machine
Activation and Inventory	2 GB memory, 80 GB HD with dual processor, server machine
Activation and Inventory with Oracle	4 GB memory, 160 GB HD (Scalable) with dual processor, server machine

Software Environment

Database	Oracle 10g | MySQL-5.0.27
Java	1.5.10
Application Server	JBoss-4.2.2 | (Tomcat-6.0 + OpenJMS) | BEA | IBM | TIBCO
OS Platform	Sun Solaris 9.0 |Linux – Fedora, Redhat or SuSe | Windows XP/2000/VISTA

System Features

Application Servers	JBoss | BEA WebLogic | IBM WebSphere | TIBCO | TOMCAT
Middleware	Java Servlets
JAVA	J2SE [JDK 1.5] | Eclipse 3.3.0 IDE for Java | Graphical ToolsGWT 1.4.2 | Adobe-Flex 2.0
Database	MySql | Oracle 10g

Headquartered in Dietzenbach, Germany, Dimetis is a leading software and hardware Systems Integrator, providing standards based Broadcast OSS solutions. With more than 25 years experience, Dimetis has an extensive customer base. Its products and services have been deployed to many of the world's largest broadcasters, telecommunication providers and media carriers.

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