

Elite System Framework Data Sheet

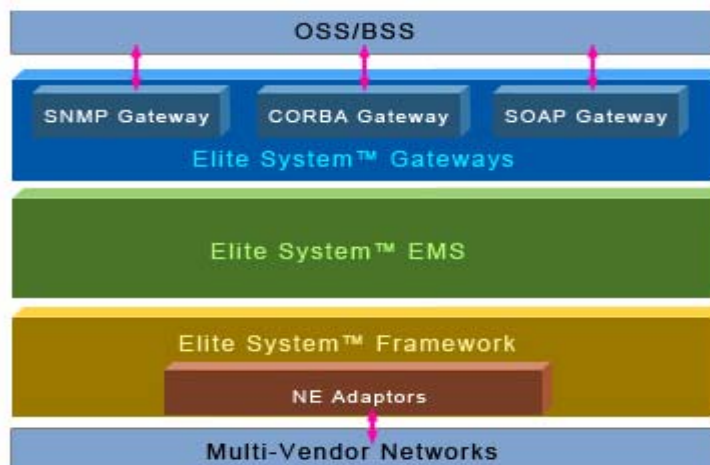
Introduction

Elite System™ is an industry leading network management framework that enables easy and rapid development of Element and Network Management System (EMS/NMS), Operational Support System (OSS), and other management applications. Network equipment vendors, service providers and system integrators can rely on Elite System™ for rapid development and deployment of any networking management applications with cost effective mode.

The industry leading Elite System™ management platform was developed using the patented XML Metadata technologies and based on over 15 years of providing management software to the word wide network equipment vendors and service providers. The unique architecture and XML Metadata based code generation enables Elitecom to significantly save the development time and cost to deliver the carrier grade EMS and NMS solutions.

Elite System™ product set contains the following three major products:

- ▣ Elite System Framework
- ▣ Elite System EMS
- ▣ Elite System Northbound Gateways



Benefits and Differentiators of Elite System

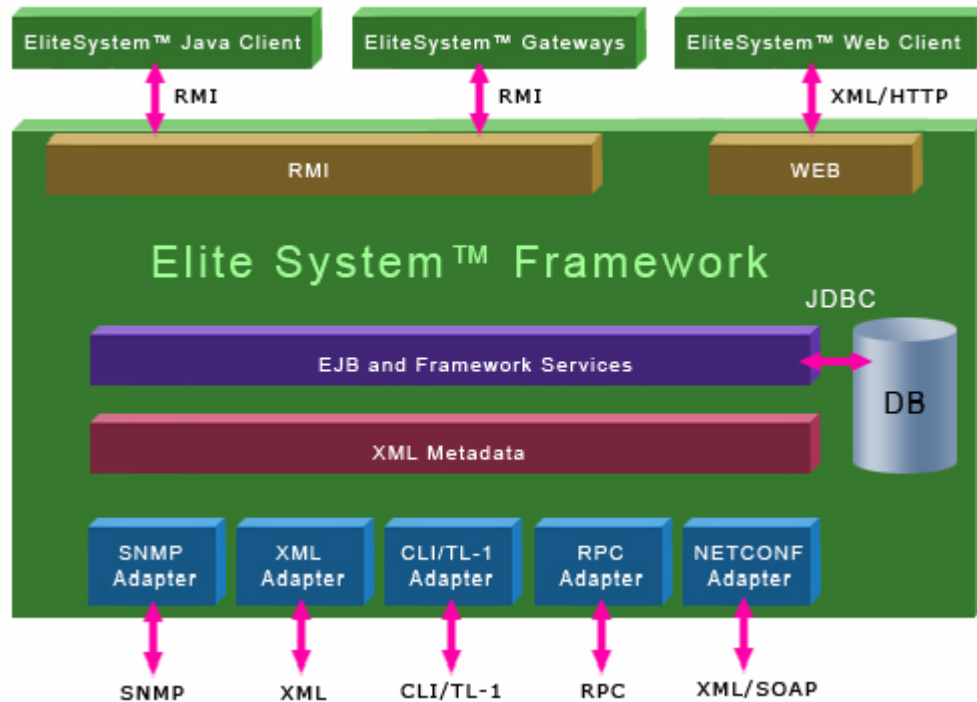
Telecom and Data communication industry today demands open standard based, scalable, reliable and highly available management solutions with rich features. The efforts and investment to develop and deploy such management systems are enormous and are often underestimated. Further many of the start-up companies in networking sector are lack of expertise and funds to build such management applications. Elite System™ makes it possible to deliver the superb and carrier grade management solutions that meet all carrier demands with the lowest cost and risk and quickest time to market.

Elite System offers following benefits:

- Accelerated Time-to-Market
 - Elite System provides framework infrastructures and off-the-shelf management applications that save significant development time and effort. Most of the applications can be used as plug and play.
 - The powerful platform and extensible API enables the easy customization and extension.
 - A typical Element Management System development cycle is shortened from one year plus to three months.
- Robust, scalable and carrier class
 - Supports a wide range of multi-vendor network devices and systems
 - Scalable to up to 100,000 network devices and hundreds of concurrent user sessions
 - Industry proven high availability management system with distributed architecture and redundancy support
- Open System
 - Standard based open architecture. Extensible by design and can easily incorporate new functions and quickly adapt to changing application challenges.
 - Easily integrate with OSS through CORBA, SNMP or XML/SOAP in the north bound
 - Support SNMP, CORBA, CLI/TL-1, RPC and XML/SOAP in the south bound to manage any type of network devices.
- Low Cost and Risk of Development
 - The efforts and risks involved with building the entire management software infrastructure are eliminated.
 - The development cost of a typical Element Management System using Elite System is less than 20% of the cost of developing the system in house.
- Reduce Operating Expense for Service Providers
 - Elite System automates complex network provisioning and upgrading operations to eliminate human error and save operating time.
 - Elite System comes with a unified, intuitive, easy to use GUI interfaces that enables the service provider to manage the network with simplicity and less error-prone.
 - Elite System saves service providers time and efforts significantly on system installing, deploying and upgrading with a total solution to support various hardware platform and network environment.

Elite System Framework Overview

EliteSystem™ Framework is a XML Metadata driven and J2EE based management infrastructure to rapid build any EMS/NMS and OSS systems.



Highlights:

- ❑ Metadata (XML) driven
 - Define business model using XML metadata
 - Automatically code generation based on XML. Developers only need to add business specific logic which is typically less than 15% of total software
 - Application is based on XML metadata repository using Java Reflection technology
- ❑ 100% in Java & O/S independent (Support Unix, Linux and all Windows platforms)
- ❑ Support both Java and Web client interfaces
- ❑ Fully distributed server components in multiple hosts for maximum performance and scalability
- ❑ J2EE compliant and support all J2EE services
- ❑ High reliability with long field lifetime and redundancy
- ❑ High scalability with tens of thousands of network devices support
- ❑ Supports any JDBC compliant DB
- ❑ Multiple types of northbound gateway support
 - SNMP
 - CORBA
 - SOAP
- ❑ Support almost any kinds of southbound interfaces to network device
 - SNMP
 - CLI/TL-1
 - RPC
 - CORBA

- SOAP/XML
- TR-069

Elite System Framework Components

Elite System Framework provides an application server on server side; and a GUI framework on client side.

The Elite System Application Server consists of an EJB Container and a number of standard EJB services like Naming, Transaction, Persistence, JMS, and Security. Elite System supplies additional services like Metadata Lookup, International and Redundancy.

Metadata Driven Application Server (EJB Container)

At the core of Elite System Platform is there a metadata based EJB Application server. Elite System uses generic beans (session bean and entity bean) and metadata-based models for all EMS/NMS application components. The metadata is specified using XML and stored as set of files

Elite System Services

Following services are provided at platform level:

Service Name	Description
Naming	Naming service enables server module registration and lookup
Transaction	Transaction Service enables server modules to implement transaction processing
Persistence	Persistence service enables JDBC based database access transparently.
JMS	JMS Service enables server modules to communicate with each other asynchronously. JMS service implements a subset of JMS specification in J2EE
Security	Security service extends EJB security model to provide instance level and attribute level access control
Metadata Lookup	Metadata Lookup provides a centralized access to metadata repository
Internationalization	Internationalization Service provides flexible multiple languages support on GUI screens
Redundancy	Redundancy Service enables Elite System server to run in primary/standby mode
Adaptor	Adaptor Services enables server modules to communicate with any network devices with standard and proprietary protocols.

Adaptor Framework

Elite System provides an external communication framework based on adapter infrastructure. An adapter uses appropriate protocol to send and receive data from an external system. The external communication framework makes the Elite System protocol neutral and provides seamlessly integration with external modules.

At southbound, Elite System provides adapter supports to SNMP, CORBA, XML/SOAP, RPC, TL1/CLI based Network Equipments.

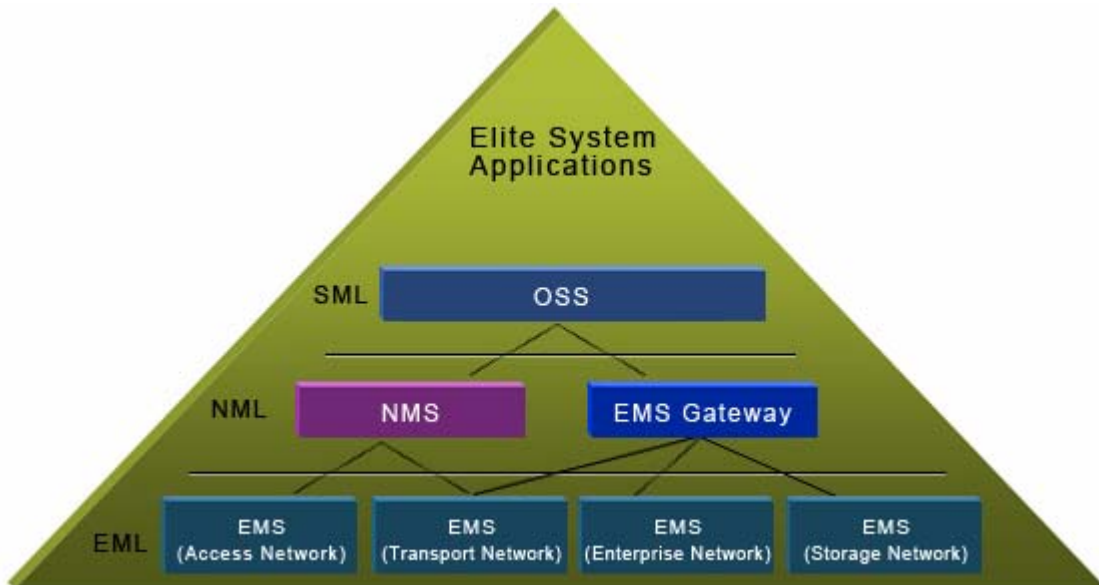
GUI Framework

The GUI framework consists of a set of metadata classes to define GUI building blocks using XML. A set of renderers provided by Elite System can render EMS/NMS applications GUI screens from the definition of components in these XML files.

Build Applications on Elite System Framework

Elite System Framework provides essential software services and infrastructure to build following management applications:

- ☐ Element Management System (EMS)
- ☐ Network Management System (NMS)
- ☐ Northbound Gateway
- ☐ Operation Support System (OSS)



Under the umbrella of Elite System product family, Elitecom has introduced the Elite System EMS and Elite System Gateways as separate products to be used as pre-built applications or customization base to build any vendor specific EMS/NMS and Northbound Gateways applications.

Elite System Framework Software Specifications

Following table lists the Elite System Framework software features and specifications:

Software Feature	Support
OS	Window XP Window 2000 Window 2003 Linux Redhat 4.0 and 5.0

	Solaris 8, 9 and 10
JRE (Java Runtime Environment)	JRE 1.4 (All Editions) JRE 1.5 (All Editions)
Database	Oracle 8,9,10 MySQL 4 and 5
GUI Client	Standalone Java Application Java Application with WebStart Web Client
Web Server	Apache/Tomcat Java Web Server
SNMP	SNMP V1, V2C and V3 SNMP V3 USM and VACM
XML Parser	Any JAXP compliant parser
Installation	InstallAnywhere Install as Service or Daemon option
Upgrade	Step-by-step GUI support Backward Compatible with DB Migration

Elite System Framework Hardware Specifications

Following table lists the Elite System Framework server hardware specifications:

Hardware Requirement	Support
CPU	1GHz or above
Memory	1G or above with 512M Swap
Disk	80G or above

Following table lists the Elite System Framework client hardware specifications:

Hardware Requirement	Support
CPU	800 MHz or above
Memory	512M or above
Disk	10G or above

Please note that higher hardware configuration may be needed for client and server hosts to support large scale networks.

www.elitect.com

Elitecom Technologies Corporation

All Rights Reserved