



ELETTRA
SUITE

ELETTRA Suite NMS Network Management System, added value for a TETRA network

DESCRIPTION

The ELETTRA Suite NMS product line is our new generation of TETRA Network Management Systems (NMS), designed to allow administrators to identify and resolve problems before they impact on network services. Its key features are:

- high level of scalability
- an open Unix based platform
- Sun UltraSPARC processor based hardware
- fully-redundant option
- enhanced security.

The system is characterized by an easy-to-use graphical user interface (GUI) and a high level of scalability to increase operational efficiency, taking advantage of a customer-driven development process.

Its modular architecture distributes services over the network, enabling the load of management tasks to be balanced.

The operator can proactively analyse the network, guaranteeing service continuity within strictly defined constraints.

The NMS GUI uses a standard Windows -based look and feel. It is implemented using the Java 2 toolkit. This provides support for "pluggable" looks and feels, including Microsoft Windows emulation, OSF Motif emulation and a Java platform-neutral look and feel (also known as "Metal").

The GUI provides on-line, context-sensitive help, whose textual

aspects can be adapted to a number of languages.

The interaction between the NMS and supervised network elements takes place via Manager-Agent paradigm, with the Manager running in the NMS and the Agent in each supervised network element.

Manager and Agents comply with CORBA standard and communicate via IIOP protocol (Internet Inter-ORB Protocol) transported over TCP/IP.

Although the Manager operates over a native MIB (Model Information Base) compliant with ITU-T M-3100, it also manages MIB-II database accessed via SNMP protocol.

This enables the easy and fast integration of third party devices in the NMS application, with the benefit of having a centralised point of control for the entire hybrid network.

The Subscriber Management functionality allows the NMS operator to configure subscribers into the ELETTRA Suite system and to define allowed facilities and services interacting with the subscriber database. It is also possible to backup the Home Local Register for late upload, preventing data loss.

Several Windows-based NMS-clients can be supported by the server, with services accessed via traditional Internet browser.

The quantity of clients supported by a NMS-server depends only on the server models, which differ from one another only for hardware performance and resilience capability.

Availability of NMS-clients fully exploits the capability of the NMS application of partitioning the entire TETRA network in domains, with the benefit for the NMS Administrator of assigning a specific domain to a well identified operator (NMS-client) for easier management of the TETRA network.

The NMS helps network managers to perform the following tasks:

- Monitoring the network for faults, isolating the source and root cause of network faults, and instigating corrective action
- Maintaining, monitoring and adapting the configuration of elements in the network
- Commissioning new network elements
- Monitoring and analysing network performance

It supports access from multiple concurrent users, maintaining the integrity of management information.

The high level of modularity and scalability within the product family enables it to manage any of a wide range of TETRA networks, from single site to region/nationwide, as described in the table below.

Application components and database servers can be distributed over multiple hosts and replicated to support scalability, allowing evolving/substituting without needing to upgrade the entire NMS system.

The NMS x50 product family is characterized by the following capabilities:

- Easy-to-use GUI
- Centralized management of the network at one site
- Control of all TETRA and transmission elements
- Optimal Quality of Service and operations
- Lower costs and less downtime visiting sites
- Mission-critical configuration support
- Possibility to integrate third-party components

MAIN FEATURES

To optimise network operations, the system supports the following main features:

- **Fault management**
 - Alarm management
 - Alarm event processing
 - Alarm synchronisation
 - Alarm history
 - Alarm display
 - Trouble ticketing
- **State management**
 - State presentation
 - State propagation
 - State synchronization

- **Event management**
 - Event storage
 - Event display
 - Event synchronization
 - Network element event management
- **Subscriber management**
 - Define/modify/delete individual subscribers.
 - Define/modify/delete static/dynamic groups of subscribers.
 - Define/modify/delete group membership.
- **Configuration management**
 - Control-configuration of physical resources
 - Control-configuration of logical resources
 - Support for configuration activities
 - Configuration audit
 - Configuration display
 - Compatibility with multiple versions of managed elements
 - Network discovery
- **Software management**
 - Software distribution
 - Software activation
 - Configuration file distribution
 - Inventory management
 - Software compatibility management
- **Performance management**
 - Performance management configuration
 - Performance data collection
 - Performance data processing
 - Performance data display
- **Accounting management**
 - Call log record collection
 - Call log record display
 - Accounting data extraction and storage
 - Accounting data display
- **Security management**
 - User access management
 - User management domains
 - VPN management domains
 - Operator activity logging
 - Network element access control

Product Name	Managed Network Size	Max number of TETRA carriers	Max number of Access Network Elements	Max number of Clients
ELETTRA Suite NMS-50	Local & Small Metropolitan, Typical Metropolitan	100	40	4
ELETTRA Suite NMS-150	Large Metropolitan, Typical Regional	600	200	10
ELETTRA Suite NMS-350R	Typical Regional, Large Regional, National	3,000	1,200	20