



*Performance from Experience*

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## Telcordia™ Network Element Provider Customer Solutions

Connecting your products to the global market



# In this changing environment, the constants are network integration and flow-through

In the circuit-switched world, the Operations Support System (OSS) architectures of the former Regional Bell Operating Companies (RBOCs) and other major service providers have been strategic components of day-to-day operations. To meet their customers' demands regarding service quality, availability, and reliability, service providers have required a high degree of automation for network operations. They have expected high flow-through levels for network equipment – from the operational environment down to the network layers.

In the new world of Next Generation Networks (NGNs), the situation is no different. The OSS re-architecture for NGNs does not lower service provider requirements for operational flow-through. With the introduction of additional, different connectivity protocols, it may be more important than ever for network element providers to ensure that new equipment will be easily integrated with service provider networks.

Meeting service provider needs is no simple task. Many new pieces of network equipment have untested operations capabilities. Many more network elements have unique physical requirements and non-standardized IDs. They contain varying amounts of internal memory for defining transmission parameters, software options, working connections, and translations.

## *Serving the success of network element providers*

Telcordia™ Network Element Provider Customer Solutions comprise a suite of services for enabling disparate technologies, products, and services to operate seamlessly together and with the underlying OSSs – as if they were made for each other. The Telcordia Technologies approach incorporates methods, practices, and techniques for analyzing, monitoring, and modifying Telcordia software, all to ensure the interoperability of your equipment and the changing network environment.

Telcordia Network Element Provider Customer Solutions are designed to help you:

- **Expand markets and product marketability** by helping products to achieve the flow-through objectives of service providers.
- **Meet time-to-market goals** through coordination of product releases. Telcordia planning can begin in parallel with your equipment engineering. Product plans and roadmaps are integrated quickly into the Telcordia processes.
- **Support high-volume sales** in the market environment for mass deployment of NGN equipment and systems.
- **Give network element providers complete control.** You determine what features are supported and when.

# Enhanced interoperability provides business benefits at every step

## ***Telcordia has your market-readiness solution***

Telcordia Network Element Provider Customer Solutions are designed to enhance your competitive position. Here are services that can be combined to make all the difference for network element providers – solutions for all points in the service provider transition from embedded to NGN OSSs. They include:

- COMMON LANGUAGE® Equipment Identification
- Telcordia™ OSMINE Services
- Telcordia™ Generic Feature Development Services
- The Telcordia NGN OSS Adapter Integration Approach
- Telcordia™ Consulting and Engineering Services
- The Telcordia Service Provider/ Network Element Provider (NEP) Liaison Office.

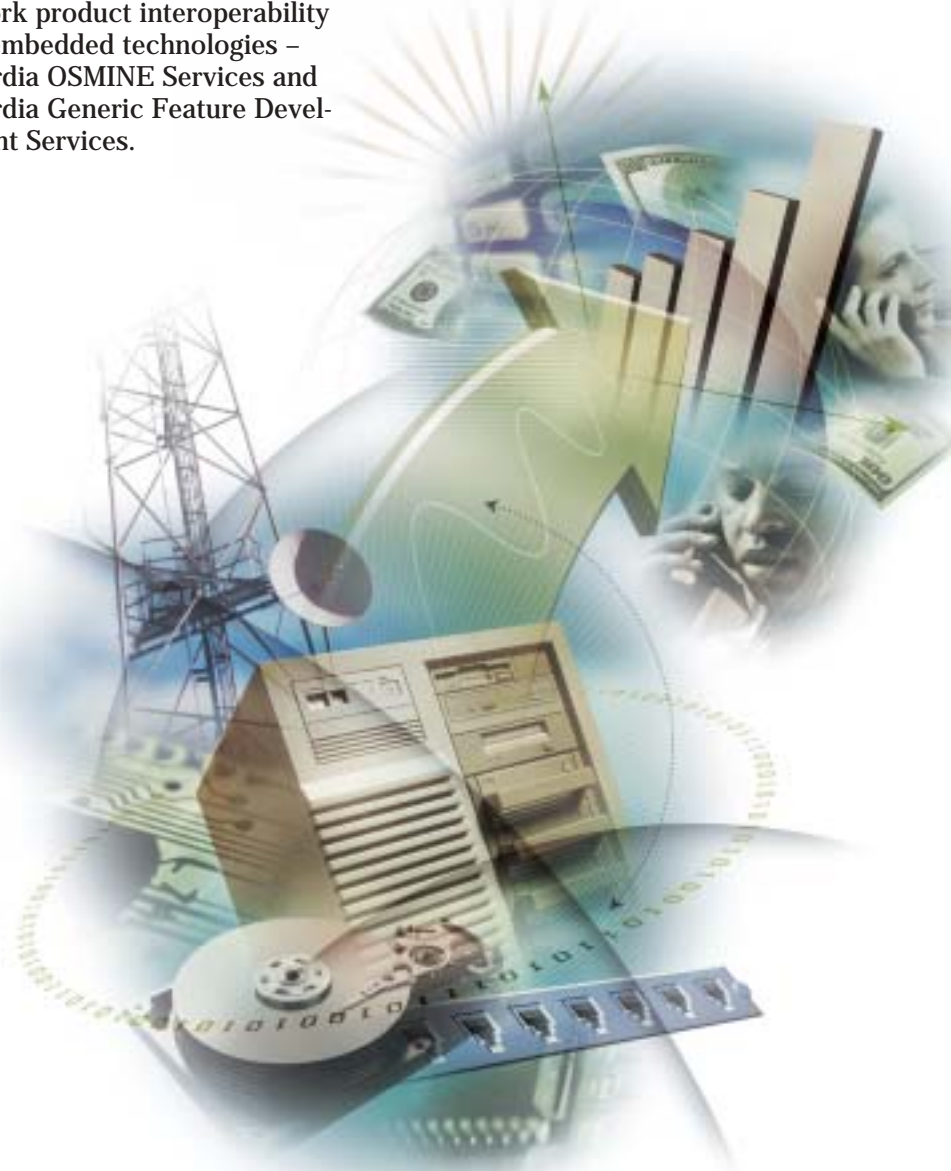
## ***COMMON LANGUAGE® Equipment Identification (CLEI™) Coding***

*The precursor to network-readiness gives network equipment a standardized ID*

Most network element providers request CLEI codes for switching, transport, loop, power, power tools, test, video, LAN, and WAN equipment – to prevent the problems that arise when network element providers and service provider organizations use different identification methods for the same piece of equipment. Small variations in equipment IDs can complicate service provider efforts, increasing manual work and forcing redundant rework.

As the result of CLEI services, unique sets of 10 characters make it easy to organize, track, and access vital information about network equipment across all technologies, from the circuit-switched environment to the newer packet-switched, xDSL, NGN, and wireless technologies. Errors and discrepancies are reduced. Process flow-through is promoted. The impact of manufacturers' product changes also can be easily identified and tracked – by the CLEI code, barcode labels, and associated records.

Once their CLEI coding is completed, network elements are prepared to benefit from the two related sets of services focused on network product interoperability with embedded technologies – Telcordia OSMINE Services and Telcordia Generic Feature Development Services.



# Integrating products in a multivendor environment

## **Telcordia™ OSMINE Services**

### *A four-stage process*

OSMINE Services comprise the analysis, monitoring, and modification needed to establish interoper-

ability between a network element and embedded OSSs.

The four stages may be performed in parallel as dictated by budgets, schedules, and business needs.

## Stage 1

- High-level review of product documentation
- Identification of impacted OSSs
- Definition of the scope of work
- Establishment of terms and conditions
- Estimates of prices and schedules
- Addendums to the Master Agreement

### **Request for Work**

*In the initial stage, the level of integration services to be performed is firmly established.*

## Stage 2

- Detailed review of product documentation
- Interface analysis and pre-testing
- Operations flows analysis
- Draft OSIA Report identifying incompatibilities/impacts
- Responses to Draft OSIA Report by equipment supplier and service provider
- Final OSIA Report

### **Operations Support System Impact Analysis (OSIA) Report**

*The OSIA Report identifies OSS incompatibilities and impacts, operations flows, and necessary and/or desirable feature enhancements to the Telcordia OSS and network elements. It also provides price and schedule estimates for preparing high-level product requirements. If a feature enhancement requires any changes to the OSS, the network element provider will be referred to the Telcordia Generic Enhancement Services program.*

## Stage 3

- Draft of "Detailed Requirements" for OSS modification
- Preliminary plans for product testing
- Response to network element provider and service provider draft requirements
- Final "Detailed Requirements" for Stage 4 work

### **Detailed Requirements**

*Telcordia prepares "Requirements for OSS Modification," the detailed document that reflects prices associated with code modification and the development of customized interfaces needed to support interoperability with the network element.*

## Stage 4

- OSS software modification
- Product testing
- Preliminary test report for review by the network element provider and the service provider
- Final test report
- Related support materials for the service provider

### **OSS Modification**

*Based on Stage 3, "Detailed Requirements," Telcordia develops OSS functionality, makes necessary interface modifications, and provides related support services. The OSS modifications and interfaces then are tested and prepared for delivery to the designated service provider.*

# Telcordia solutions span the converging network

## **Telcordia™ Generic Feature Development Services**

*Shared funding translates into shared success*

Generic Feature Development Services is a flexible cost-sharing model that enables multiple network element providers to share the funding of a generic enhancement effort that makes fundamental changes to existing Telcordia OSS software in order to accommodate new network product features.

The benefits of the Generic Feature Development Services model include:

- **Cost-effective implementation** of major modifications to Telcordia OSS software
- **Accelerated availability** of complete, network-ready solutions into the existing infrastructure
- **Time-to-market goals met** ahead of competition
- **Control** over the timing of feature delivery
- **Return on investment** possibilities through the rebate program.

Emerging technologies in packet-based networking may be addressed by the integration of the Telcordia embedded OSS and NGN product suite in order to provide seamless, end-to-end support across circuit- and packet-based networks.

Throughout the Generic Feature Development Services process, a highly experienced Telcordia solutions manager is the single point of accountability. Your Telcordia solutions manager provides: on-site

representation of your issues; oversight of the vital collaboration between your product development team and Telcordia operations support technical staff; and regularly scheduled “roadmap” meetings to exchange product roll-out information about your equipment and the planned Telcordia OSS technology support.

## **The Telcordia NGN OSS Adapter Integration Approach**

*Advancing deployment of the Next Generation Network*

The Telcordia NGN OSS Adapter Integration Approach helps ensure interoperability between network elements and OSSs, providing flow-through network management across all NGN technologies.

The key components of the Approach are:

- **Comprehensive basic services** that include equipment and network modeling for such specific

services as ADSL, ATM, VDSL, Voice Over IP, Enhanced Internet, Virtual Private Network, and Data Services supported by NGN OSSs.

- **A tiered approach** that offers adapter development options that span the full spectrum, from the basics up to fully automated adapters.
- **Utilization of industry standards** to help reduce integration effort and cost, and to improve time-to-market availability. For example, Telcordia is building to the ATM and DSL CORBA IDL specification, and implementation of the TMF 814 interface for optical equipment is planned.
- **Adapter programming capability**, being developed by Telcordia, to give service providers more flexibility and options for implementing new technology and services.

## **The Telcordia Service Provider/NEP Liaison Office**

*Telcordia has established a Service Provider/NEP Liaison Office for three-way, mutually beneficial communications, planning, and solutions between Telcordia consultants and engineers, service providers, and network element providers.*

*Through regular, frequent roadmap meetings, the Liaison Office helps with early identification of flow-through, generic feature, and other OSS requirements. The resultant information can prove valuable not only for synchronization of technology and OSS development, but also for addressing OSS requirements in RFPs.*

# Profit from industry leadership

## **Telcordia™ Consulting and Engineering Services**

*Reaching the right solutions for each network element provider*

Telcordia consultants are available to help smooth and speed your go-to-market efforts – beginning with product development, and continuing through marketing and deployment. The breadth of specific services includes:

- Product Design and Engineering
- OSMINE Services/OSS Readiness Assessment
- Regulatory and Carrier Market Environment Assessment
- Standards Knowledgebase
- GR Conformance
- OSMINE Services Support
- Component and Systems Reliability Analysis

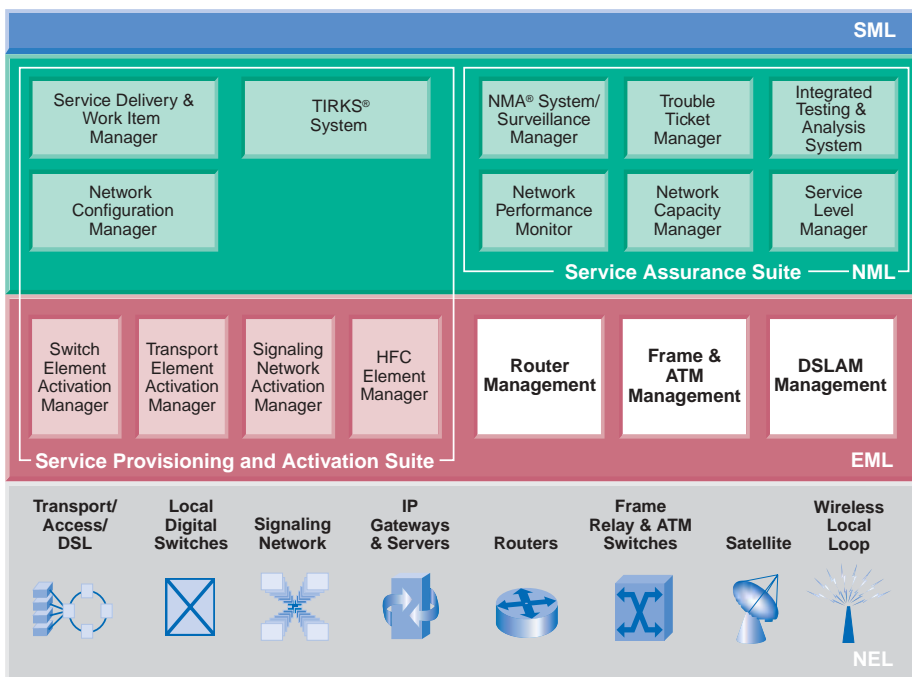
- Interoperability Testing and Analysis
- Test Lab Facilities
- Deployment Engineering, Testing, and Support
- Operations and Maintenance Support.

## **Telcordia Technologies focuses a world of experience on your network products**

It's little wonder that service providers, enterprises, and governments worldwide rely on Telcordia Technologies to provide the solid, yet fluid and flexible foundation network for efficient service creation and delivery, and for the deployment and integration of new technologies.

As a result of the unique Telcordia expertise, Telcordia OSS users have achieved up to 90% flow-through rates, and are among the most operationally efficient service providers in the world. Our OSSs are the foundation for the integrated flow-through that service providers are increasingly demanding in order to automate operations, administration, maintenance, and provisioning of services.

## TMN View of Impacted OSSs



# The systems that automate efficient operations

## Telcordia Heritage OSSs

**Telcordia™ Customer Centrex Manager** allows Centrex customers to rearrange their configuration without the aid of telephone company personnel.

**Telcordia™ FEPS** is a component of the Telcordia™ TIRKS System that provides a complete range of automated software tools for planning and provisioning interoffice facilities and transmission equipment.

**Telcordia™ Customer Network Manager** enables service providers to offer customers automated and integrated control over the configuration of leased private-line networks.

**Telcordia™ Integrated Testing & Analysis System** tests analog, digital, and ISDN switched circuits manually via an HMI and automatically via flow-through support. Flow-through is achieved by processing test requests

from Telcordia™ WFA/C, automatically querying Telcordia™ NSDB for circuit data, and returning test results and dispatch recommendations to WFA/C.

**Telcordia™ LFACS** is a component of the Facilities Assignment and Control System (FACS) that inventories and assigns local loop facilities.

**Telcordia™ MARCH® System** translates line-related service order data into switch positioning messages.

**Telcordia™ NMA® System** collects and analyzes information on network alarms and performance data and alerts a center if it detects trouble in the loop, interoffice, or switching systems.

**Telcordia™ NSDB** is a corporate data layer for customer and circuit data that stores message trunks, special services, carrier circuits, and non-designed services.

**Telcordia™ Transport Element Activation Manager** is a system for administration and memory restoration of network elements, such as digital cross-connect systems, automated digital terminal systems, and add/drop multiplexers.

**Telcordia™ SOAC** controls the flow of service orders within the FACS.

**Telcordia™ SWITCH® System** inventories and automatically assigns digital and analog switching machine facilities and associated central office equipment. It manages digital loop electronic technologies, allowing optimization across both loop and switching assignments.

**Telcordia™ TIRKS® System** plans, inventories, and assigns the circuit order control and circuit provisioning of interoffice equipment and facility inventory.

## Telcordia Next Generation Network OSSs

**Telcordia™ Network Configuration Manager** is a network inventory, design, and assignment system for managing equipment, facilities, circuits, and Next Generation Networks and services across multiple technology domains (ATM, frame relay, ADSL, cell relay service).

**Telcordia™ Network Performance Monitor** provides an integrated performance management solution for voice, data, wireless, and signaling networks, collecting data directly from the network elements and element management systems.

**Telcordia™ Surveillance Manager** provides a total, integrated view of the network across switch, transmission, signaling, and wireline loop network elements on a highly available, fault-tolerant platform. It provides real-time event correlation capabilities to arrive at "root cause" fault analysis.

**Telcordia™ Service Level Manager** will identify performance degradations by proactively monitoring the performance and availability of the operations and network before they violate vital customer Service Level Agreements (SLAs). The customer can create, monitor, and maintain their own SLAs.

**Telcordia™ Network Capacity Manager** provides an integrated view of network demand and capacity, including monitoring/data analysis, performance expectations, trending, network servicing, and capacity expansion.

**Telcordia™ Service Delivery** is a table-driven configurable workflow engine that manages the complex sequence of events needed to provision services.



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For more information about Telcordia Technologies, contact your local account executive, or you can reach us at:

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