

# ICView™ Management System

**Convergent Networks' ICView™ management system is a suite of element, billing and subscriber management tools that enable carriers to effortlessly manage Cohesion™ Distributed Softswitch Architecture components.**

## Element, Billing and Subscriber Management Made Simple

The ICView management system is made up of three Web-based applications to manage carriers' Cohesion networks: the ICView Element Management System (EMS), the ICView Billing Mediation Platform (BMP) and the ICView Subscriber Management Portal (SMP). ICView facilitates new service deployment by providing the following functions:



**ICView EMS for service activation and assurance:** Network resource configuration, real-time health monitoring and utilization reporting on all Cohesion network elements to ensure availability and service quality.

**ICView BMP for service accounting:** Billing record collection and correlation from all Cohesion network elements such as the ICS2000 broadband switch and the ICSX feature server; and a data source for traffic analysis reports.

**ICView SMP for service fulfillment:** Subscriber line and profile provisioning on the ICSX feature server, such as Class 5 features, dialing plans and toll carrier administration.

ICView's design is based on the Telecommunications Management Network (TMN) model to meet Tier One carrier requirements. With standards-based northbound interfaces, the suite of ICView products readily integrates with carriers' operations support systems (OSS) to allow new services to be ordered, managed and billed for based on carriers' established policies and workflows. Security on the ICView applications and network elements provides access control, authentication, authorization and auditing to ensure the integrity and confidentiality of information carried on a Cohesion network.

## ICView Element Management System

The ICView EMS resides logically in the Element Management Layer (EML) of the TMN model, and provides the service activation and assurance functions. It simplifies operations management by providing a central point of control and visibility to the multiple applications for which the Cohesion network can be configured. From a Web browser, the network manager can perform fault, configuration, accounting, performance and security (FCAPS) management functions:

### Fault Management/Surveillance

- = Real-time alarm management and problem diagnosis

### Configuration Management/Provisioning

- = Central change control and backup of network elements for consistency and disaster recovery

### Accounting/Inventory Management

- = Up-to-date network inventory usage tracking for capacity planning

### Performance Management

- = Traffic and error statistics for resource usage monitoring and early problem detection

### Security Management

- = Role-based access control list, auditing, encryption and authentication\*

The ICView EMS supports both legacy and next-generation protocols to ensure interoperability with carriers' OSS. Network and configuration information can be exchanged between the OSS and ICView EMS via SNMP v1 and v3, TL1, XML, FTP, JDBC/ODBC, HTTP and CLI scripts. For example, the ICView EMS can download preferential routes from an OSS computing this information based on current traffic conditions and rating information, and then issue dynamic route changes on network elements to provide the most cost-effective and high-quality service to subscribers. This type of OSS integration enables carriers to apply the existing intelligence of their infrastructure to the new services and technologies introduced by a Cohesion network.

## ICView Billing Mediation Platform

The ICView BMP resides in the Network Management Layer (NML) of the TMN model, and performs the accounting function by collecting and correlating billing information from various network elements in the path of service delivery. It enables carriers to turn new services into billable revenue immediately with a flexible platform to convert call detail records (CDR) and PacketCable event messages into any format required by carriers' OSS, such as Bellcore Automatic Message Accounting (AMA) format based on GR-1100, GR-1083 and GR-508. It also provides valuable call traffic data for the ICView EMS to generate reports on capacity utilization, resource availability and calling pattern by time, trunk, subscriber and call type.

## FEATURES & BENEFITS

- ▶ **Comprehensive network management with FCAPS functions**
- ▶ **Web-based subscriber line and feature provisioning**
- ▶ **Billing record collection and conversion into AMA format**
- ▶ **OSS integration through commonly employed interfaces, including XML, SNMP, HTTP, FTP and TL1**
- ▶ **High-availability and redundancy**

Serving such critical functions in the network, the ICView BMP offers the following features to guarantee its reliability and security:

- = User-configurable interfaces via authenticated FTP or Radius\*
- = Real-time event message correlation and assembly to ensure record completeness and timeliness\*
- = High performance throughput to support billions of records per month
- = User-definable archive schedule and backup media
- = Customizable monitoring and reporting of alarms and statistics
- = Remote maintenance capability via command line interface and Web
- = Disaster recovery and automatic failover scheme\*

The ICView BMP employs a standard upstream interface to billing systems based on GR-1343, the Bellcore AMA Data Networking System (AMA DNS) specification. It assures interoperability with a variety of third-party billing systems to enable immediate revenue collection for new services provided by packet networks.

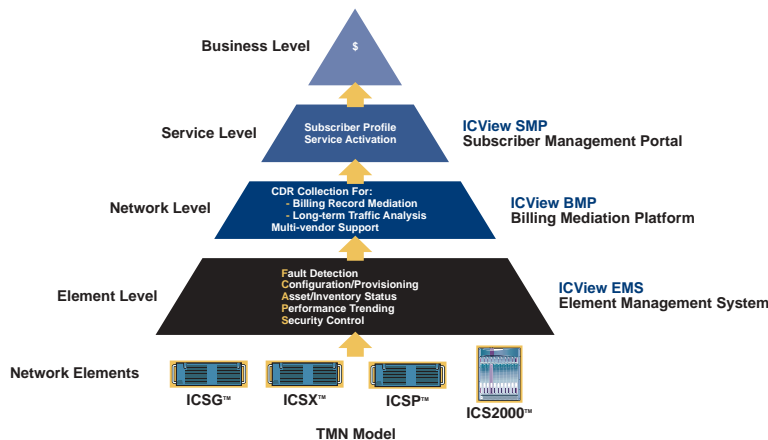
### ICView Subscriber Management Portal

The ICView SMP resides in the Service Management Layer (SML) of the TMN model, and provides the service fulfillment function for provisioning subscriber lines on the ICSX feature server. It has a user-friendly Web interface for managing subscriber profiles, directory number assignment and facility availability. An XML-based data model gives ICView SMP extensibility and flexibility, and allows new feature offerings to be quickly added to the customer order system and activated to begin service and revenue collection. To protect the confidentiality of subscriber information, the ICView SMP has role-based access control lists to grant operator privileges to specific subscriber domains and management functions. This access control capability can be extended to provide a self-care Web interface for subscribers to manage their own accounts and feature selection in the future.

### The Cohesion™ Advantage

At Convergent Networks, our cutting-edge technology is helping guide service providers to the next generation of broadband communications. The Cohesion™ Distributed Softswitch Architecture, including the ICS2000™ broadband switch, the ICSP™ service proxy, the ICSX™ feature server, the ICSG™ signaling gateway and the ICView™ management system, provides evolutionary, packet-based platforms for delivering multiple voice and data applications over ATM, TDM and IP networks. Unmatched in its scalability and versatility, Cohesion supports a revolutionary migration path for future service creation and delivery in the New Public Network. Our commitment to providing a complete solution to ensure service providers' success is further extended by CohesionPS,™ a comprehensive portfolio of professional and technical support services.

### ICVIEW™ SOLUTIONS BASED ON TMN MODEL



### ICVIEW™ MANAGEMENT SYSTEM SPECIFICATIONS

#### Server Platform

Sun Ultra, Netra and Enterprise series, 100Mb Ethernet card, graphics card, monitor, Solaris operating system

#### CPU, Memory and Disk Space Requirements

Requirements are dependent on the number of network elements to be managed by the ICView Management System

#### Client Requirements

Netscape Navigator or Internet Explorer

#### Database Requirements

ICView EMS: Oracle 8i Standard or Enterprise Edition database

ICView SMP: Oracle 8i Enterprise Edition database

ICView BMP: None

\* Future Release



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