Netrac

OSS/BSS Suite of Products

Service **Inventory** **Fault**

Performance **xDR Analysis** **Planning** **Provisioning** **Security** **Mediation**

Proven OSS & BSS
for Convergent Networks

TTI Telecom

Your Network Management Partner

Who We Are

TTI Telecom was founded in 1992 to provide integrated and advanced Operations Support Systems (OSS) and Business Support Systems (BSS) for telecom service providers. At TTI Telecom, our philosophy is straightforward: Develop cutting-edge products and solutions that automate service fulfillment and empower service providers to effectively monitor and manage convergent networks.

Netrac Suite of Products

The Netrac OSS/BSS suite of products is designed for multi-vendor, multi-technology wireline and wireless networks that span all domains, including switching, transport, access, IP, 2G, 2.5G and 3G. Our products and solutions are flexible and scalable, capable of supporting tier-1 carrier networks serving millions of subscribers.

Netrac is composed of nine families of products that can be used in various combinations to build a full-fledged solution or to address specific needs in areas such as root cause analysis or automated service activation. All the Netrac products are pre-integrated, have a common user interface, and share a single database. The Netrac products have well-defined APIs and support open standards, speeding deployment and helping to reduce costs.

The Netrac Difference

We believe that an OSS/BSS is a major enabler, and that the right OSS/BSS can help a service provider to attract and retain customers and enhance its competitive edge. That is why we engineer each one of our products and solutions to specifically fit service providers' technical needs and business requirements. With Netrac, service providers can:

▸ Rapidly introduce any equipment into the network, regardless of vendor or technology

▸ Ensure 24/7 network availability by pinpointing and solving network problems quickly and efficiently

▸ Improve service performance through real-time traffic monitoring and quality of service analysis

▸ Speed return on investment by optimizing network resource utilization

▸ Automate service provisioning, freeing network personnel from performing time-consuming manual activities

▸ Reduce operational costs by streamlining business processes and maximizing efficiency

Netrac OSS /BSS Suite of Products
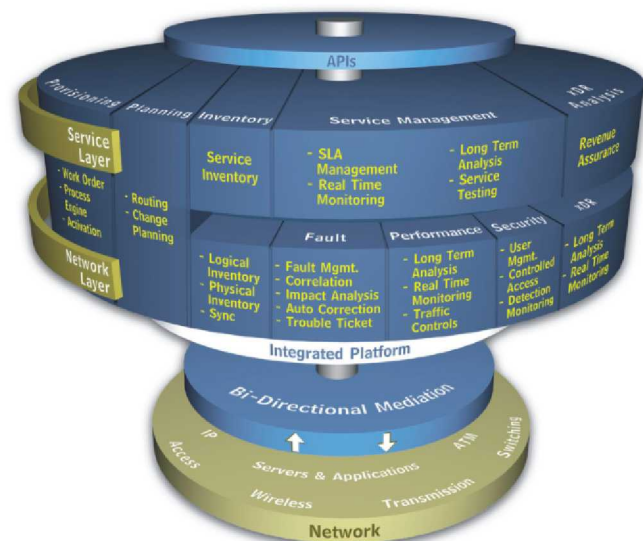
Service Management

The Service Management family monitors and manages services from a customer-facing perspective. It maps the matrix of relationships between network elements, supported services and customers, helping service providers to understand how each layer affects the others.

SLA Manager - Defines, tracks and manages service level agreements (SLAs) by collecting and calculating key quality indicators. SLA Manager produces SLA compliance reports that can be accessed by customers via secure Web access, and its exceptions window warns network personnel of impending SLA violations so they could take appropriate corrective action.

Service Monitor - Monitors service performance in real-time across all domains, and pinpoints service degradations before they escalate into crises.

Service Analyzer - Performs long-term analysis of services and presents this information in Web-based reports that enable network users to understand historical service performance and improve service planning.

ServiceTest - Proactively measures the performance and availability of services from the end-user's viewpoint via testing probes.

Key Benefits

▶ Detects potentially service-impacting problems before they become crises

▶ Helps avert SLA violations by warning network staff of impending violations

▶ Monitors quality of service delivered to customers in real-time in order to enhance customer satisfaction

▶ Performs long-term analysis of service behavior for improved service planning and design decisions
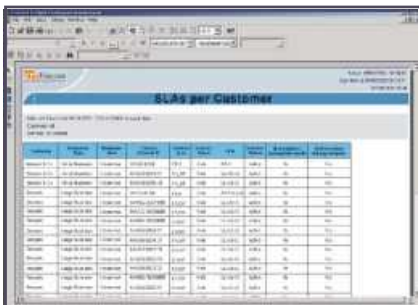
SLA Reports per Customer
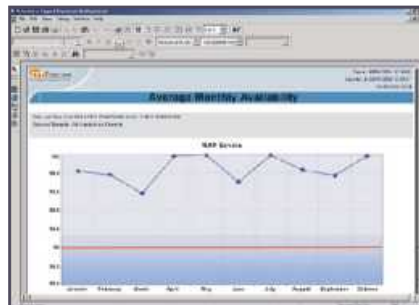
Monthly Availability of WAP Service

Inventory Management

The Inventory Management family provides an accurate physical, logical and service view of the network. It serves as a single repository of up-to-date inventory data that can be accessed by other OSS applications, such as Provisioning, Fault, Performance, and Service Management.

Physical Inventory - Offers an end-to-end view of the physical network. Enables users to define, track and manage all the entities in the underlying network.

Logical Inventory - Documents, models and graphically presents the logical connections between network entities. Models all existing and emerging technologies and sub-network 'clouds'.

Service Inventory - Enables operators to create and model existing and new services.

Sync - Automatically synchronizes the inventory database with the actual network, providing up-to-date information on available network resources and service capacity.

Key Benefits

▸ Increases the accuracy of planning, design and engineering work

▸ Improves network capacity planning, bandwidth allocation and circuit layout

▸ Speeds time-to-service by minimizing order fallout

▸ Optimizes network utilization by identifying under-utilized or "stranded" resources

▸ Eliminates data inconsistencies by providing single database of record
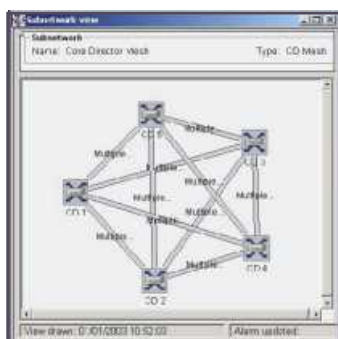
Subnetwork Logical View

Fault Management

The Fault Management family detects alarms across multi-domain networks and lowers the mean-time-to-repair.

Fault Management (FaM) - Performs alarm filtering and reduction, and presents alarms from the entire network on a single screen.

Correlator+ - Pinpoints the root cause of network faults using network-wide topology data and conditional rules.

NetImpact - Detects services and customers impacted by network failures.

FaultPro - Proactively solves network faults by automatically sending predefined commands to the network elements in response to alarms.

Netrac Trouble Ticket (NeTkT) - Manages trouble tickets from creation through resolution, and facilitates application of known solutions to recurring problems.

Key Benefits

▸ Lowers mean-time-to-repair and increases network uptime

▸ Significantly reduces the number of alarms that controllers must handle

▸ Speeds problem resolution by rapidly determining the root cause of a problem

▸ Prioritizes repair activities according to affected customer or service

▸ Automates resolution of problems, freeing NOC staff to make better use of their time and expertise

▸ Efficiently solves network problems and customer-reported troubles by automating the creation of trouble tickets

Geographical Display of Alarms

Performance Management

The Performance Management family performs real-time and historical analysis of network behavior to help improve overall quality of service in the network and optimize resource utilization.

Performance Management Module (PMM) - Captures and analyzes performance counters and xDR records (e.g. CDRs, IPDRs, RADIUS) in order to provide an accurate picture of network health and utilization. PMM presents traffic information in Web-based reports that help network staff understand network and service status at a glance and predict future network behavior.

TrafficView - Proactively monitors traffic behavior in near real-time using performance counters and xDR records. TrafficView detects traffic exceptions in the network based on dynamic, self-adapting user-defined thresholds.

Traffic Control Handler - Enables authorized personnel to send controls to the network to re-route or limit traffic in response to traffic exceptions.

Key Benefits

▸ Enhances quality of service via accurate collection and analysis of traffic information

▸ Increases network utilization by detecting under-utilized network equipment

▸ Enables proactive response to traffic exceptions in near real-time - before services and customers are affected

▸ Web-based predictive trending and forecasting reports improve network planning
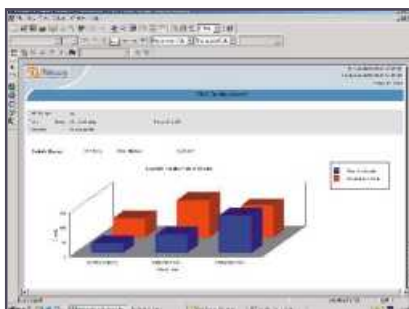
Traffic Distribution per Trunk Group
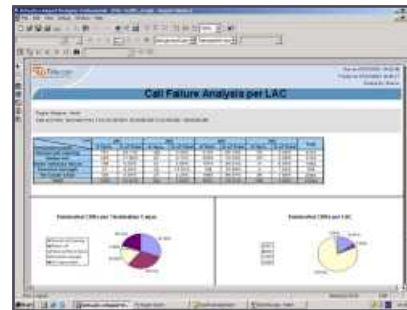
Call Failure Analysis per Local Area Code

xDR Analysis

The xDR Analysis family collects and processes xDR records (e.g. CDRs, IPDRs, RADIUS) for quality of service and marketing-related analysis, as well as fraud detection and billing verification purposes.

CallExpert - Transforms xDR records into meaningful information that can be used for network and service monitoring, quality of service, call failure and traffic trends analysis.

Billing Verification - Identifies errors in the billing process by comparing xDR records generated by different network sources and alerting network users to discrepancies in xDR comparison ratios.

FraudDetect - Detects fraudulent activity in the network by comparing suspicious usage patterns with predefined profiles.

Key Benefits

Prevents large-scale revenue loss by identifying and reporting suspected fraudulent activity

Eliminates revenue leakage by detecting billing discrepancies

▸ Ensures customer satisfaction by tracking the quality of service delivered to end-users

Planning

The Planning family automatically designs and assigns service routes, and enables network users to plan and implement mass changes in the network.

Route Builder - Auto-designs service routes end-to-end while taking into account business rules and technological constraints. Route Builder also assigns network resources and capacity to the designated routes.

Change Planner - Enables users to plan changes in the network, including circuit and facility changes, internal and external connection changes, and mass changes.

Key Benefits

▸ Turns up new services more quickly by accelerating the service design process

▸ Automates the implementation of mass changes in the network, reducing costs and increasing staff's productivity

▸ Enables co-existence of the actual network and the planned network

Provisioning

The Provisioning family automates the service provisioning process end-to-end across multi-vendor, multi-technology networks. This shortens service-time-to-deliver, helping service providers meet customer and business demands.

Work Order - A powerful workflow engine that models and automates complex provisioning processes, and coordinates huge volumes of service requests - ensuring that all provisioning activities are executed at the right time and in the appropriate order. Work Order provides information on the status of work orders to users across the organization.

Activate - Automatically activates services end-to-end by sending commands to the network elements, regardless of vendor or protocol.

Key Benefits

▸ Improves the efficiency and accuracy of the provisioning process

▸ Helps operators realize revenues sooner by fulfilling new service orders faster

▸ Speeds service delivery by replacing time-consuming manual operations with automated activities

▸ Frees network staff to focus on provisioning exceptions rather than on the entire provisioning process

Service Fulfillment User Worklist

Security Permission Definitions

Security Management

The Security Management family ensures secure access to the network elements. It protects the network from security violations by quickly detecting internal and external security threats, and alerting administrators to take appropriate actions.

SecureCentral - Automates the process of downloading user security profiles to the network elements.

SecureNE - A centralized gateway through which authorized users can view, access, and send information to the different network elements based on their security permissions.

SecureDetect - Detects intrusion attempts and security violations, and sends warning notifications to security administrators.

Key Benefits

▶ Provides centralized and secure access to the network elements

▶ Simplifies monitoring of security events by consolidating security incidents on a single screen

▶ Reduces administrator workload by automating the creation of user security profiles

▶ Lowers network downtime and minimizes revenue loss by rapidly detecting security threats

Mediation

The Mediation Layer provides bi-directional, multi-protocol connectivity to the network. It collects and formats network element and element manager output, and distributes it to other applications. It also enables users and applications to send commands to the network.

Device Expert (DvXpert) - Collects, parses and formats network data, and sends it to Netrac and third-party applications in the form of network events, performance measurements, usage records and configuration information. DvXpert's device libraries facilitate rapid implementation of new devices in the network.

Network Command Interface (NCI) - Enables users and applications to send commands to the network elements, regardless of the elements' command language and syntax. Commands include operational, provisioning, activation and corrective commands, as well as traffic controls.

Billing Mediation - Ensures that xDR records (e.g. CDRs, IPDRs, RADIUS), the source material for billing applications, are accurately collected, processed and distributed to external billing systems.

Key Benefits

▶ Enables monitoring and managing multi-technology, multi-vendor networks via one centralized platform

▶ Gives freedom of choice to incorporate any vendor device in the network

▶ Facilitates communication with any device in the network via the sending of commands and controls

▶ Speeds ROI by accelerating the integration of new devices in the network

▶ Prevents revenue leakage by ensuring the reliability of the billing process
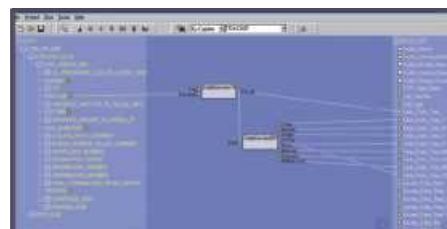
Device Definitions GUI

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