## StableNet® Telco

# Automated **Service Assurance** and **Fulfillment**

**infosim**®

## Our Strengths
# Innovation & Quality

# About Infosim®

Infosim® is a leading manufacturer of automated Service Fulfillment and Service Assurance solutions for Telcos, ISPs, Managed Service Providers and Corporations. Since 2003, Infosim® has been developing and providing StableNet® to Telco and Enterprise customers. Infosim® is privately held with offices in Germany (Wuerzburg - Headquarter), USA (Austin) and Singapore.

Infosim® develops and markets StableNet®, the leading unified software solution for Fault, Performance and Configuration Management. StableNet® is available in two versions:
- Telco (for Telecom Operators and ISPs) and
- Enterprise (for Corporations)

StableNet® is a single platform unified solution designed to address today´s many operational and technical challenges of managing distributed and mission-critical IT infrastructures.

Many leading organizations and Network Service Providers have selected StableNet® due to its rich set of features and reduction in OPEX & CAPEX. Many of our customers are well-known global brands spanning all market sectors.

At Infosim®, we place paramount focus on customer satisfaction. We uphold an indomitable spirit for innovation and high quality products.
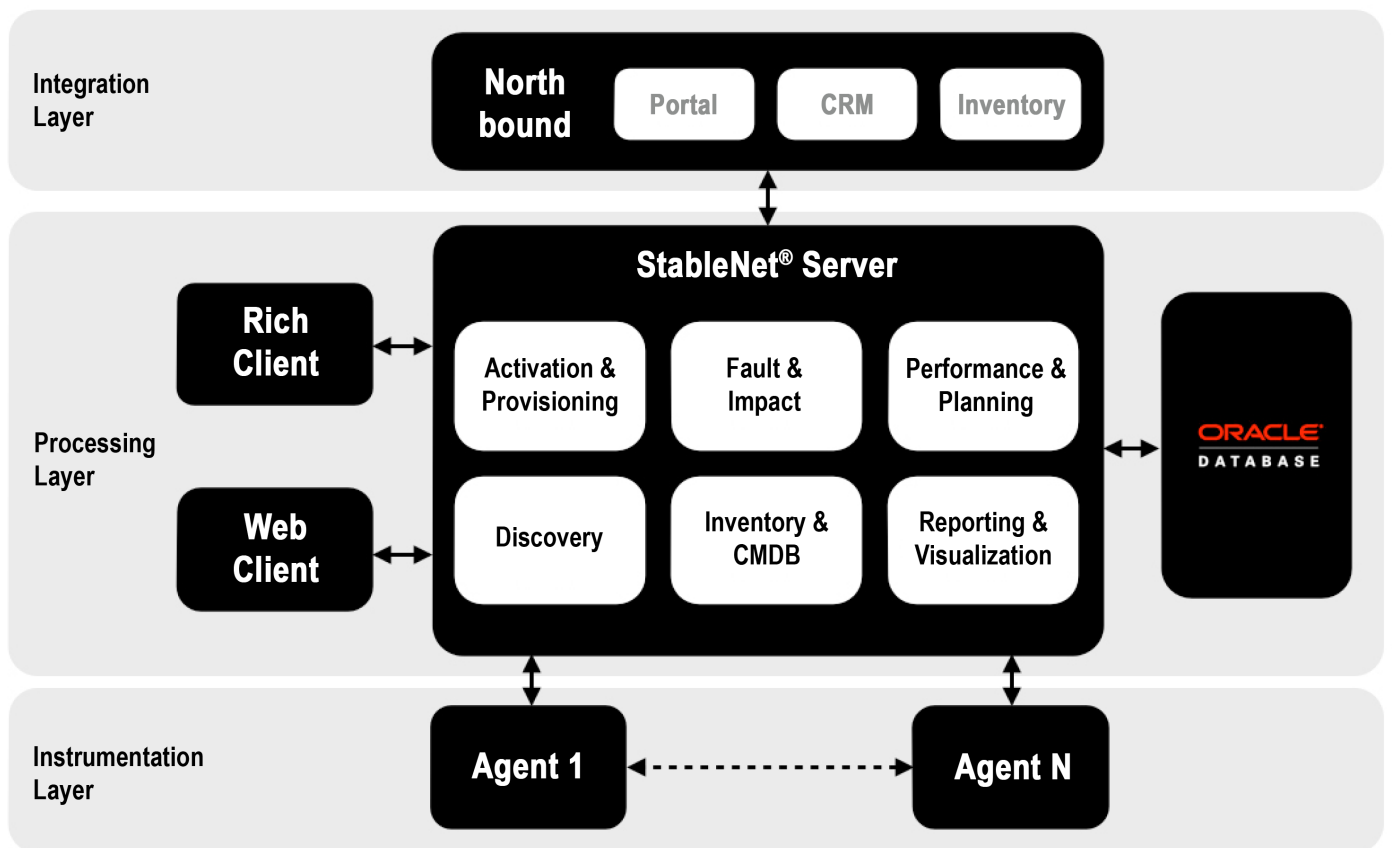
**Why Infosim®?**
- Quality software design you can trust and rely on
- Proven solution with a large number of installed sites
- Unified solution which covers Configuration, Fault/RCA and Performance Management in a single product
- Reduction in OPEX & CAPEX via product consolidation, step-by-step migration and retirement of existing legacy element management solutions
- Automated Service Delivery directly from your Integrated Service Catalog
- Configuration & Policy Governance that maximizes Service Availability and reduces MTTR
- Rapid ROI by reduction in OPEX & CAPEX and customer service credits realized via greater Service Availability
- SOA-based technology, meaning it is highly integrable and flexible

**Differentiation**

StableNet® is a 3rd generation highly automated Network Management System. The key differentiation of StableNet® to other legacy type Operational Support Systems (OSS) is that StableNet® is a unified OSS system with three integrated functionalities that focus on Fault, Performance and Configuration Management, with automated Root-Cause-Analysis (RCA). StableNet® can be deployed on a Multi-Tenant, Multi-Customer, or Dedicated platform and can be operated in a highly flexible and dynamic environment like a Cloud or dynamic flex-compute environment.

# Service Oriented Architecture
## The StableNet® Platform

**Integration Layer**

**North bound** | Portal | CRM | Inventory

**Processing Layer**

**StableNet® Server**

**Rich Client**

Activation & Provisioning | Fault & Impact | Performance & Planning

Discovery | Inventory & CMDB | Reporting & Visualization

**Web Client**

ORACLE DATABASE

**Instrumentation Layer**

**Agent 1** | **Agent N**

Infosim® recommends Oracle®. Other supported databases: MySQL™.

# The OSS Automation Platform

The StableNet® platform technology revolutionizes management of large heterogeneous network infrastructures. StableNet® enables network operators to automate End-to-End provisioning of service assurance processes such as measurements and monitoring. This creates a pane-of-glass visibility and enables real-time event and error management - a must for achieving top-level goals like reducing operating complexity and costs. The StableNet® platform enables rapid creation of new services and improves quality of service.

StableNet® extends the boundaries of legacy silo-based network management by integrating service assurance and service fulfillment on a single platform:

- Fault management with impact management and Root-Cause-Analysis in order to correlate approximately 90% of all alarms and enrich them before they reach an operator

- Performance measurement and data normalization for collecting traffic data and performance KPIs from network elements and circuits
- Configuration management combines highly automated service provisioning with resource management and a CMDB

StableNet® is built with 3rd generation network data management architecture. This architecture provides above peer accuracy and scalability. It is designed for reliability and an ease of deployment from the ground up.

The StableNet® platform is based on open technologies and offers an industry redefining licensing model that helps reduce the costs of managing large networks.

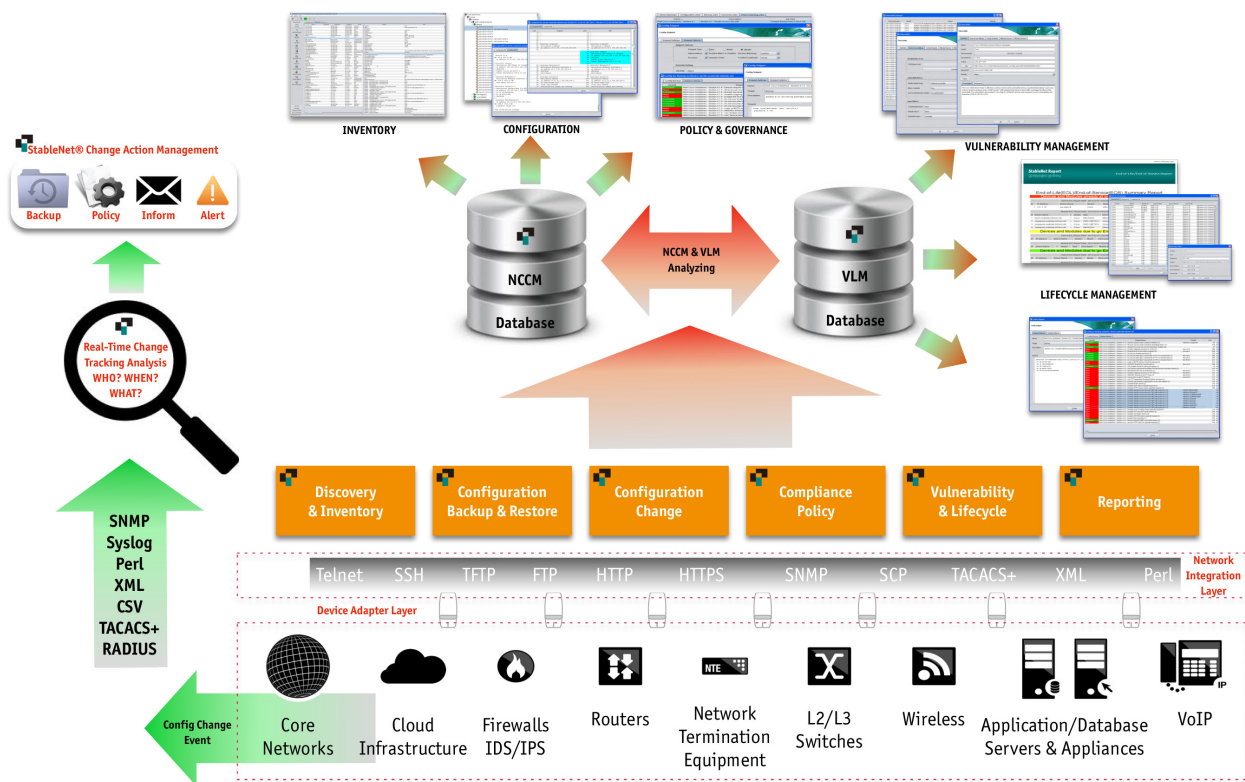| | Legacy best-of-breed solution assembly | StableNet® |
|---|---|---|
| Time-to-market | typically 12 months | typically 2 months |
| TCO | very high | low |
| Integration | rudimentary/brittle | excellent |
| Data normalization | rudimentary | perfect |

The vision of a fully automated »DarkNOC«
comes closer with StableNet®

Automated flow-through provisioning and service assurance

# Configuration Management
## Service Fulfillment



**StableNet® Change Action Management**

Backup   Policy   Inform   Alert

Real-Time Change Tracking Analysis WHO? WHEN? WHAT?

SNMP
Syslog
Perl
XML
CSV
TACACS+
RADIUS

Config Change Event

INVENTORY

CONFIGURATION

POLICY & GOVERNANCE

VULNERABILITY MANAGEMENT

NCCM
Database

NCCM & VLM Analyzing

VLM
Database

LIFECYCLE MANAGEMENT

| Discovery & Inventory | Configuration Backup & Restore | Configuration Change | Compliance Policy | Vulnerability & Lifecycle | Reporting |

**Network Integration Layer**

Telnet  SSH  TFTP  FTP  HTTP  HTTPS  SNMP  SCP  TACACS+  XML  Perl

**Device Adapter Layer**

Core Networks    Cloud Infrastructure    Firewalls IDS/IPS    Routers    Network Termination Equipment    L2/L3 Switches    Wireless    Application/Database Servers & Appliances    VoIP

**StableNet® is Vendor-Agnostic - supports more than 60+ Manufacturer Types and over 800+ Model Types.**

# Configuration & Change Management

The StableNet® NCCM module delivers key Network Configuration and Change Management functions including real-time configuration backup and restoration, process-oriented change management, and configuration policy management. In additon, two subscription services for vulnerability and End-of-Life/End-of-Service updates are available for covering security and business requirements.

The NCCM module is a fully integrated component of the StableNet® family, using the same common core services, device interaction layers and user interfaces. It delivers a true 'single product' management solution with a greatly reduced time for user familiarization.

Organizations can never truly eliminate the ad-hoc changes to network device configurations, but with the StableNet® NCCM module the impact of these changes can be mitigated. Larger scale changes can be structured into change process jobs for controlled execution and can be rolled back at any time. Configuration changes can be made either by using simple CLI commands or more powerful logic-based snippets and templates to enable less technical staff making routine changes.

Key for managing device configurations is ensuring that they meet the corporate standards. The StableNet® NCCM module allows these configuration standards to be built into policies that can be applied to devices. Therefore, action can be taken if a device is in violation of these policies. Policies can be built by using standard pattern matching techniques, advanced scriptlets for repetition checking and full script logic. This allows the user to create policies in order to cover even the most complex requirements.

An organization using the StableNet® NCCM module can build rules to locate devices within their estate that have vulnerabilities. They can take advantage of a new service on an annual contract basis which automatically distributes new vulnerability notifications directly to the customer. This will ensure that the customer network is immediately checked for any new vulnerability notifications and will reduce the time the network is exposed to potential danger.

**Main Benefits**
- Ensures a complete configuration backup for all devices under management
- Versioning of all configuration backups for easy restoration to previous known state
- Automates complex tasks into simple templates
- Accelerates time for completing changes and rollouts
- Eliminates the risk associated with human error in the change process
- Enforces corporate policies and quickly views configuration deviations from those standards
- Ensures compliance with regulatory requirements such as Sarbanes-Oxley or Basel2 with a full audit trail
- Enables the use of Best Practices within an organization such as ITIL® v2/v3
- Systematically locates devices within the estate that have known vulnerabilities and mitigates against those risks
- Identifies devices that have reached End-of-Life or End-of-Service before issues arise

# Fault Management
# **Service Assurance**
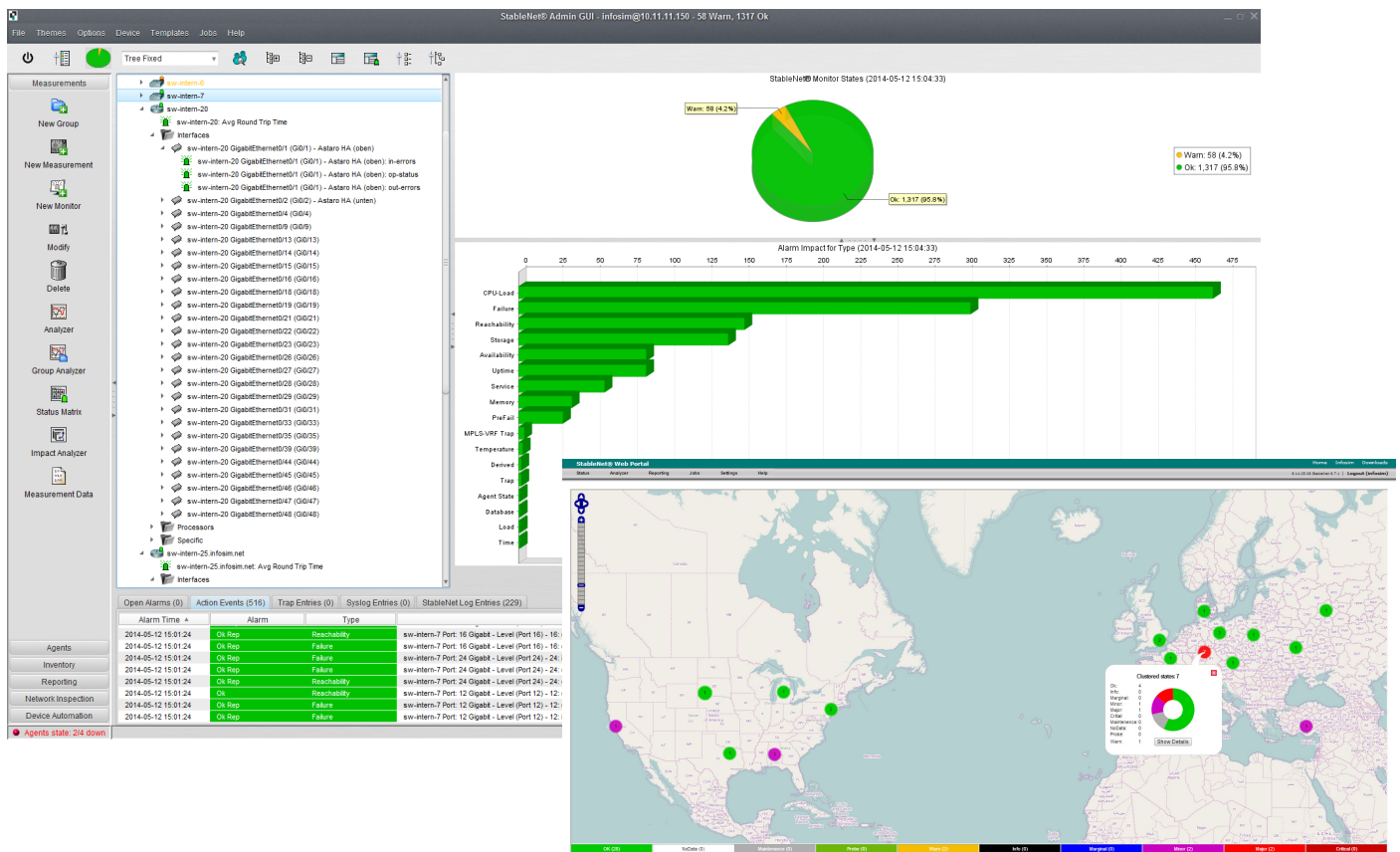
# Root-Cause and Impact Management

StableNet® provides automated Root-Cause-Analysis (RCA) and service impact management for networks, systems and services. Hereby, engineers can focus on service-affecting events and prioritize them at the same time.

StableNet® uses a combination of threshold monitoring, SNMP trap processing and syslog processing for performing automated problem analysis in real-time. Events are correlated by the built-in RCA subsystem without the need to write and update correlation rules. Alarm dashboards and notifications are enriched with business and service information. This provides NOC engineers with understandable and actionable information.

Extensive reporting capabilities provide invaluable data for network planners and network managers.

StableNet® integrates with existing management applications and 3rd party applications. For example, if a trouble ticket application is used for tracking problems and resolutions, StableNet® integrates with the application in order to open a trouble ticket upon failure detection and closes it automatically upon clearance of the failure.

- Correlates root-cause events automatically without coding or updating rules
- Enriches alarm information and dashboards with business impact information
- Provisions alarm monitors for all relevant KPIs of all network assets automatically
- Supports integration with SMS, pager, email, trouble ticket and script execution on alarm events
- Provides best-in-class event reports and statistics
- Provides a real-time status dashboard of all assets and services

# Performance Management
# Service Assurance

**StableNet Report**

**Server Status Report 1 - Houston**
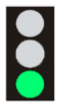
## Executive Summary

This section shows a summary for quick reference. More details can be found in the respective sections below. A green traffic light shows that no problems were found in this area during the reporting period. An amber traffic light indicates that no immediate problem was detected but you should keep a watchful eye on it. If a traffic light shows red color, immediate action is recommended. It is strongly recommended that you look at the details in the sections below for more information. Your Account Manager will be happy to assist you.
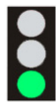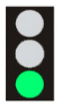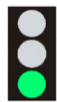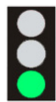
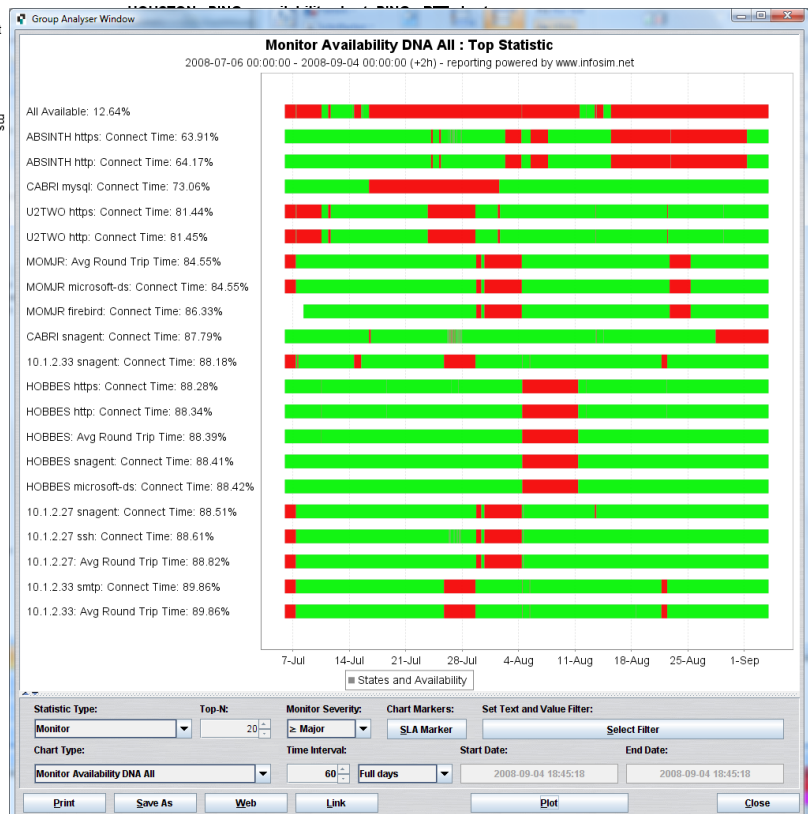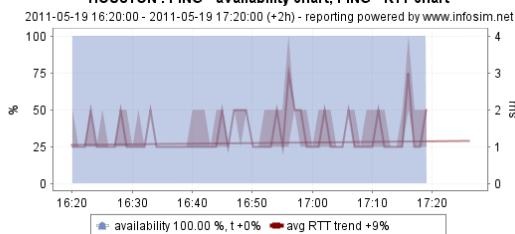| Connectivity | Utilization (InBound) | Utilization (OutBound) | IT Services | Production | SAP System | CompCenter | Storages | All Services |

## Latency and Availability

### HOUSTON : PING - availability chart, PING - RTT chart
2011-05-19 16:20:00 - 2011-05-19 17:20:00 (+2h) - reporting powered by www.infosim.net

availability 100.00 %, t +0%    avg RTT trend +9%

**Group Analyser Window**

### Monitor Availability DNA All : Top Statistic
2008-07-06 00:00:00 - 2008-09-04 00:00:00 (+2h) - reporting powered by www.infosim.net

All Available: 12.64%
ABSINTH https: Connect Time: 63.91%
ABSINTH http: Connect Time: 64.17%
CABRI mysql: Connect Time: 73.06%
U2TWO https: Connect Time: 81.44%
U2TWO http: Connect Time: 81.45%
MOMJR: Avg Round Trip Time: 84.55%
MOMJR microsoft-ds: Connect Time: 84.55%
MOMJR firebird: Connect Time: 86.33%
CABRI snagent: Connect Time: 87.79%
10.1.2.33 snagent: Connect Time: 88.18%
HOBBES https: Connect Time: 88.28%
HOBBES http: Connect Time: 88.34%
HOBBES: Avg Round Trip Time: 88.39%
HOBBES snagent: Connect Time: 88.41%
HOBBES microsoft-ds: Connect Time: 88.42%
10.1.2.27 snagent: Connect Time: 88.51%
10.1.2.27 ssh: Connect Time: 88.61%
10.1.2.27: Avg Round Trip Time: 88.82%
10.1.2.33 smtp: Connect Time: 89.86%
10.1.2.33: Avg Round Trip Time: 89.86%

7-Jul   14-Jul   21-Jul   28-Jul   4-Aug   11-Aug   18-Aug   25-Aug   1-Sep

States and Availability

| Statistic Type: | Top-N: | Monitor Severity: | Chart Markers: | Set Text and Value Filter: |
| Monitor | 20 | ≥ Major | SLA Marker | Select Filter |

| Chart Type: | Time Interval: | Start Date: | End Date: |
| Monitor Availability DNA All | 60 Full days | 2008-09-04 18:45:18 | 2008-09-04 18:45:18 |

Print    Save As    Web    Link    Plot    Close

# Service Level Management (SLM)

StableNet® includes an advanced Service Level Management (SLM) and reporting system for networks, servers and applications. This provides network operators the flexibility for collecting and reporting KPIs that are most important to them and their customers. StableNet® collects and imports data from different data sources and protocols like SNMP, NetFlow, WMI, IP-SLA, CDRs, CSVs or SQL. It is also possible to actively simulate traffic like VoIP or Video and measure quality parameters like MOS or R-Factor. These data can be flexible aggregated to user-defined KPIs.

StableNet® runs 24/7 and identifies and reports IT infrastructure performance and events on a real-time basis. In addition, the software performs historical reporting for identifying long-term trends.

- Understand the quality of service provided to end users
- Increase business revenue by reducing outages that directly affect business operations

- Increase customer satisfaction and loyalty by ensuring that services used directly by consumers are responsive and available whenever required
- Plan proactively for meeting future business requirements including workload volumes and necessary service levels
- Increase ROI on IT assets by balancing workloads and obtaining the highest levels of component utilization while still meeting service level requirements
- Reduce or eliminate penalties associated with contractual commitments for meeting specified service levels

StableNet® provides a highly flexible reporting engine. All reports can be fully customized to best meet specific requirements. A graphical report designer allows to create reports in simple point-and-click fashion. StableNet® supports PDF, Excel and HTML format. Reports can be forwarded on schedule, i.e. with hourly/daily/weekly/monthly output or on-demand as desired.

### SLA Reports

SLA reports document the network operator's delivery against contractual obligations. They are often less detailed than performance reports and only show performance at the service layer; lower layer information such as the underlying transport network are usually not included.

### Usage Reports

Usage reports show utilization, volume and throughput with baselines, top N and trends. Going beyond monthly totals for providing time lines can help users to understand peak and off-peak loads. In addition, they assist in sizing the network correctly for meeting actual demands.
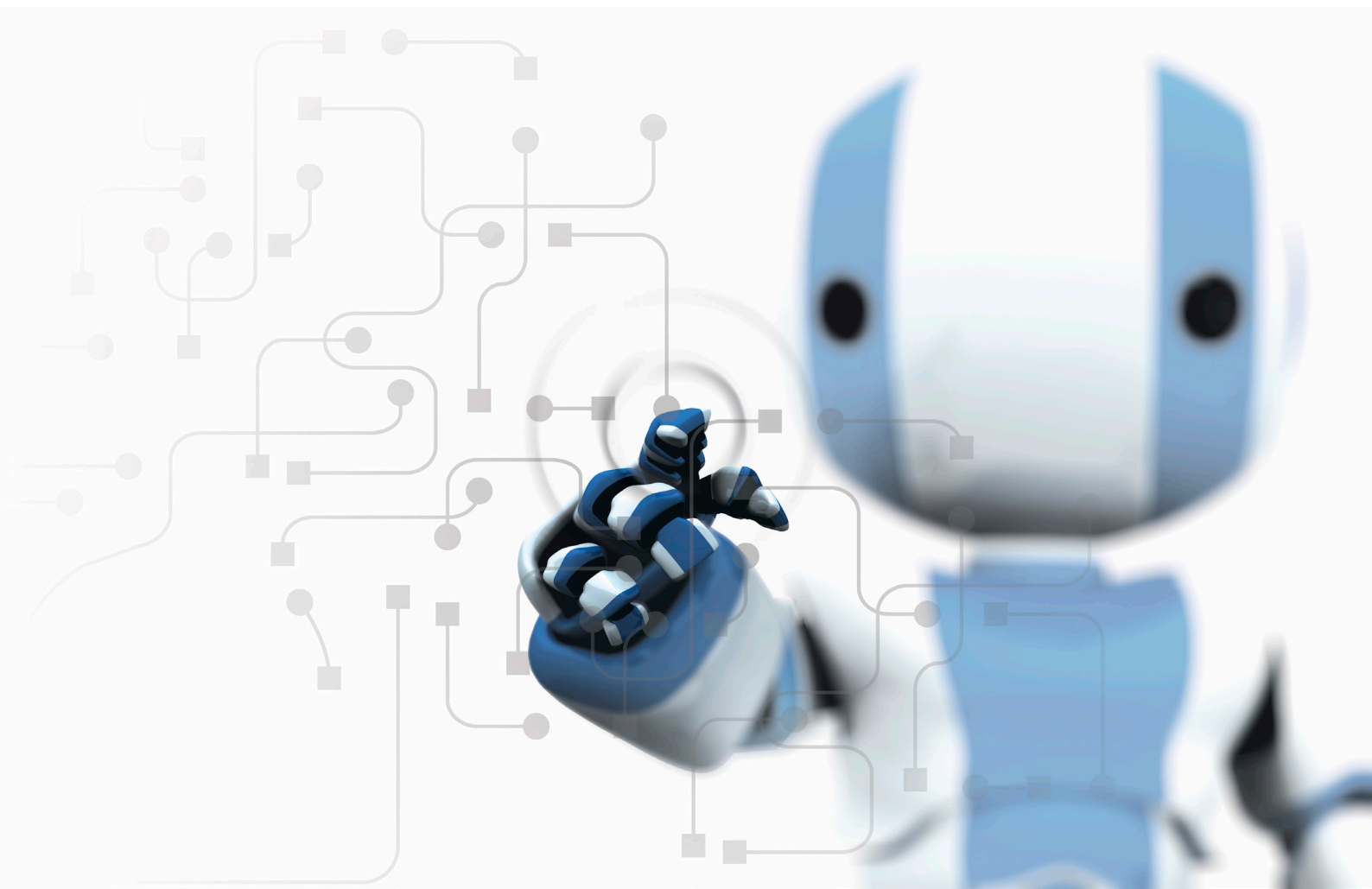
### QoS Reports

QoS reports help customers to understand performance and usage per Class-of-Service (CoS). This is important for converged networks like IP-based RANs. For best performance results, QoS reports include information which is necessary for correct classification as well as for application traffic tuning.

OSS/BSS Solution
# Service Fulfillment

# NGOSS, eTOM & SID

OSS is always a strategic investment for any service provider. Infosim® offers excellent value by being fully convergent and handling multi-vendor and multi-technology networks. StableNet® provides provisioning, performance management, reporting and fault detection capabilities that help any service provider improving their competitiveness. In turn, the service provider's customers benefit from reliable and quick service delivery that they have come to expect.

As an OSS solution, StableNet® integrates into the solution landscape that makes up the entire OSS/BSS environment. The Telemanagement Forum is a non-profit global industry organization that provides leadership, strategic guidance and practical solutions for improving the management and operation of communications services. Infosim® is an active TM Forum member. Guidelines and standards published by the TM Forum facilitate the integration and interoperability of OSS/BSS solutions.

StableNet® is designed based on TM Forum principles:

• The Enhanced Telecom Operations Map (eTOM) Team as members
• The New Generation OSS (NGOSS) program as co-lead of the Shared Information and Data (SID) Model Team

StableNet® Telco aligns with both eTOM as well as with ITIL® for a granular process mapping of the IT operations aspects of a service providers' End-to-End service delivery model. In addition, StableNet® Telco aligns with eTOM's linkages to the NGOSS framework via an optimized network abstraction model within the StableNet® system.

The optimized network abstraction model provides a common foundation for the definition of all objects which are managed. These are corresponding to eTOM in order to support its Resource Management and Operations, Service Management and Operations, and CRM processes.

# We look forward to hearing from you!

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