



Network Optimization & End To End Network Monitoring

This is based upon consolidated experience and background in development, maintenance and support GSM, GPRS and UMTS Networks. Teleca has developed appropriate tools and performed a number of network optimizations for mobile operators across the globe.

How can you increase your business today?

With Teleca, the key partner from operator network to end user services.

Customer Benefit

This service will provide you with a more efficient and optimal GSM/UMTS network with a specific focus on increasing your network capacity and improving end-to-end performance.

As a customer you will benefit from a vastly improved network infrastructure which will provide maximum return on your investment. These quality improvements will decrease your operational expenditure, increase your revenue and improve customer satisfaction.

It will provide you access to industry leading GPRS/EDGE/UMTS experts and supply you with tools that are at the cutting edge of technology.

Service Offering

This service offers a unique end-to-end Network (and Service) Optimization package that comprises of two major parts;

- Remote End To End Service Monitoring of the performance of mobile network components and services by the use of mobile agents.
- Audit, Analysis and Tuning of the mobile network with focus on packet based components.

This service provided is focused on packet data on the GSM and UMTS networks, conducted by a world leading and independent service provider and is delivered by our extensive expertise.

The service can either start as an initial audit related to network optimization or by the introduction of end-to-end monitoring using mobile agents to monitor the performance of the network, specific services, specific protocols, radio coverage, etc.

Teleca is an international telecom and IT services company focused on R&D that develops and integrates advanced software and information technology solutions. With in-depth expertise in the latest technology and profound industrial knowledge, Teleca helps technology- and software-intensive customers worldwide to strengthen their market positions and shorten their times to market. The company has more than 3,000 employees and operations in 15 countries in Asia, Europe and North America. Teleca is quoted on the Attract40 list of the Stockholm Stock Exchange.

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End To End Service Monitoring

Our End To End Service Monitoring product comprises of mobile agents that provide detailed Quality of Service information. This is an important ingredient in gauging the networks performance from an optimization perspective. The advantages are:

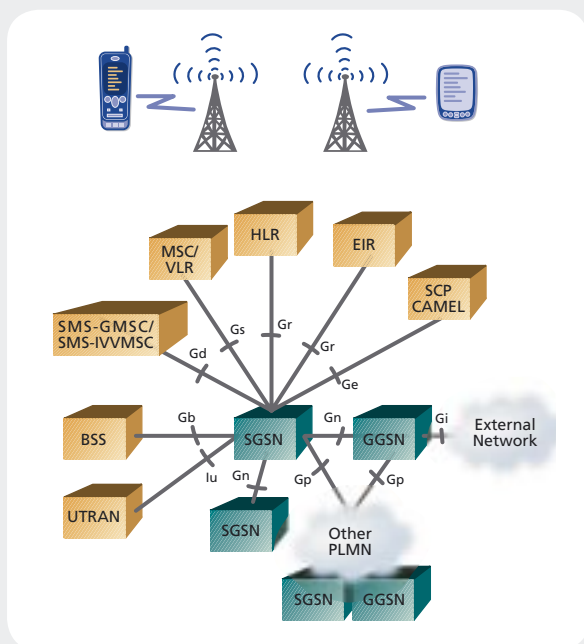
- Perception: Performance and quality parameters on network services as perceived by the end-users, i.e. your customers.
- Location: Remote network and service performance monitoring from geographically (even roaming) distributed E2E Mobile Agents. GPS provides agent localization.
- Distinction: Rapid isolated fault management by distributing a larger number of E2E Mobile Agents in different parts of the delivery chain.

All of the above will pinpoint where a network optimization effort is required.

E2E Agent

The Mobile Agent is a software component downloaded on a Symbian OS based mobile device, which provides:

- Performance Data Reporting
- Network Monitoring: RF Signal Strength, Cell ID, MCC, MNC, etc.
- Service Monitoring: SMS, MMS, GPRS, WAP, HTTP, etc.



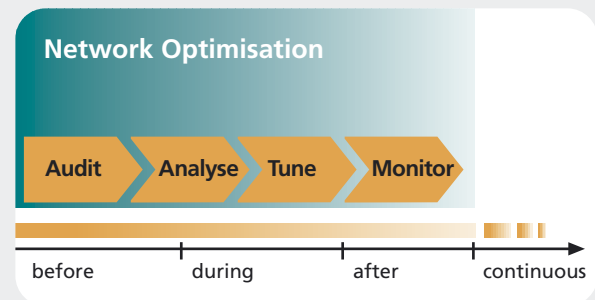
Network Optimization

Network audit is an essential, yet complex, task that requires deep understanding of the underlying protocols, network topology issues as well as node and network characteristics. This service provided is focused on the packet based parts and services related to both the radio and core network, especially the SGSN and GGSN network elements and all their interfaces.

The network analysis and tuning is an ongoing task, but special attention is essential when:

- Introducing new or upgrading existing network elements
- Higher network capacity is needed
- Introducing new services

The process can be viewed as a 4-stage process:



The audit is an initial stage that provides a quick network audit (health check) to determine whether a further detailed assessment is needed.

The analysis is a detailed study of your existing network infrastructure in the form of an independent network analysis made by network experts. The result will be a detailed report of their findings which has a list of clear and concise deliverables. Information will also be collected from the mobile agents and continual monitoring will take place during this phase.

The tuning of your network will be done in cooperation with the network operator personnel. The network and nodes are fine tuned for maximum performance from the identified optimizations.

Upon completion of the optimization service provided it is highly recommended to continually monitor the performance of the network. This will ensure that the improvements that have been achieved through optimization will be applicable as new network elements are upgraded or introduced. The utilization of the mobile agents and continuous monitoring service will ensure that this objective is achieved.

Why choose Teleca

Teleca has many years of experience and a solid background in standardization, development, maintenance and support of GPRS support nodes for GSM and UMTS networks for a major network equipment providers.

Our GPRS/EDGE/UMTS competence center is one of the best in the world. Teleca has developed appropriate tools and performed a number of network optimizations for major mobile operators across the globe.