

# Wireless Operator Improves Troubleshooting Deploying TAMS Monitoring System

## Case Study: TAMS for Monitoring Wireless Core Network

### IN BRIEF

- **Goal:** reduce troubleshooting time and improve mean time to solve problems over a Wireless Core Network composed of more than 3000 SS#7 links
- **Solution:** Sunrise Telecom's Traffic Analysis and Monitoring System (TAMS)
- **Results:** Back Office can now easily and efficiently diagnose network problems that prevent subscribers access to the required services

A mobile operator is rapidly expanding its business across Germany. The rapid growth of their customer base in recent years has increased the complexity of investigating subscriber's problems. Furthermore, the continuous introduction of new services is a challenge for their Back Office which requires the right tools to troubleshoot subscriber's activity involving multiple Network Elements and protocol procedures.

Like most wireless operators performing at an international level, in order to increase market share, revenue and profitability, it needed to quickly react to subscriber's problems, reduce troubleshooting time and maximize the quality of service, with no additional staffing of their Back Office.

To address these issues, the operator turned to Sunrise Telecom and its Traffic Analysis and Monitoring System (TAMS). As a result, they are now able to easily perform troubleshooting and rapidly determine the root cause of the unavailability of services to specific subscribers. This has significantly reduced the average problem identification time compared to the procedures in place prior to the deployment of TAMS.

Equally important, they now have a system in place that can keep pace with the increasing growth of the Company's core business.

### Benefits

| Objective  | Benefits Achieved  |
|--|--|
| Optimize the MTTs (Medium Time To Solve) for Trouble Tickets related to service delivering | By using the TAMS Protocol Analysis tools, the operator was able to consistently reduce the time required for trouble tickets management, without adding personnel to their existing Back Office   |
| Have complete End-to-End visibility across the entire Core Network                         | The Protocol Correlation capabilities of TAMS have increased the efficiency of the Back Office staff who can now easily look at the entire signaling related to a specific subscriber's activity, regardless of the type and the number of Network Elements involved   |
| Retrieve the activity of a specific subscriber up to one month retroactively               | TAMS storage capability allows the retention of all the subscribers' data (xDR) for up to 30 days, at 650 million transactions per day. Distributed database architecture based on Oracle® allows the technicians to retrieve any customer's data within a few minutes |
| Locate problems related to both interworking and configuration errors                      | The drill-down capability of TAMS allows Back Office personnel to look not only at xDR, but also at the details of the subscriber's activity, up to Protocol details   |

## About the Mobile Operator

It's a wholly-owned subsidiary of one of the largest telecommunications companies in the world in terms of market capitalization, headquartered in Spain. Customer in Germany reached 11 million subscribers in 2006, representing a 13% increase over last year. In April 2004 they launched a 3G service, offering a laptop card to business users, followed by a laptop and 3G handset surfing for consumers. In addition to fast mobile internet access, subscribers can make video calls and use a broad range of video streaming. In the near future they will also launch an innovative, high-speed 3G data service enabling customers to connect to the internet from their homes at fixed line rates.

## The Challenge: To Improve Troubleshooting Capabilities Without Adding Staff

The management of this network is very challenging due to the complexity of the offered services which require a lot of signaling exchange between different Network Elements. Consequently, in order to fully troubleshoot a specific transaction, all of the signaling links must be monitored and the protocol procedures must be correlated to provide the *end-to-end view* of the activity of a specific subscriber.

After a long evaluation, the operator identified the Sunrise Telecom solution as the only one capable of providing **fast visibility** over hundreds of millions of daily transactions including SMS Traffic, Locations Updates and Voice Calls. Similar solutions still in place into other operator's subsidiaries failed in the main feature they were searching for, i.e. the fast retrieve of the activity of a specific subscriber across the network.

Probes were deployed at sixteen MSC sites and over the STP nodes, collecting data onto a centralized database accessible through Web interface, from more than 3000 SS#7 signaling links. Every day the Back Office personnel use TAMS to easily troubleshoot subscriber's problems. The technician inputs the parameters identifying the required transaction (IMSI, MSISDN...) and TAMS provides all of the *xDR* related to that transaction, automatically correlated.

With a single mouse click the technician can then look at the details of the protocol procedures, displayed through a *ladder diagram* that easily shows how the transaction has been handled by the Network Elements.

After the first deployment in 2006, the system is planned to be expanded in 2007 to cover the UMTS interfaces as well as part of GSM-A and A-bis interfaces.