

Keeping the lid on OPEX with Self-Organizing Networks

Nokia Siemens
Networks

Complexity is the enemy of efficiency when it comes to communications networks.

Yet mobile communications service providers face ever-increasing complexity, with many already juggling 2G and 3G services in multi vendor networks and the industry accelerating rapidly towards LTE and beyond. And with the global demand for mobile data exploding, the pace of change shows no sign of slowing.

Nokia Siemens Networks LTE SON delivers major benefits in three key areas:

- Self-configuration speeds network roll-outs with various features such as automated LTE base station network integration and adjacency management and optimization
- Self-optimization uses functions such as automated neighbor relations, PCI value optimization, inter-system adjacency optimization and load balancing to make the best use of network resources
- Self-healing functions detect, diagnose and repair non-performing BTS/LTE base station cells automatically

The arrival of each new technology adds another set of network elements, frequencies and parameters that must be managed, and mobile service providers (CSPs) must find a way to do so effectively while maintaining tight control over their operating expenditure (OPEX). Automation and optimization tools enable existing operations personnel to manage growing complexity efficiently and to make the most of all network assets.

The right automation solutions can deliver the ideal combination of lower costs and higher network quality. The SON Suite from Nokia Siemens Networks includes everything that CSPs need to make the most of automated network management.

What is the SON Suite?

The Nokia Siemens Networks SON Suite is a comprehensive, hybrid Self-Organizing Network (SON) solution that extends throughout the network, including central, distributed and local monitoring, control and support functions for SON automation.

A single platform, the integrated Operations Support System (OSS), enables fast, accurate and automated data flow. This is backed up by comprehensive services ranging from implementation consulting to tailored workflow optimization. Together they provide the support that enables the CSP to maximize the operational benefits by opting for an automated Self-Organizing Network.

End-to-end management

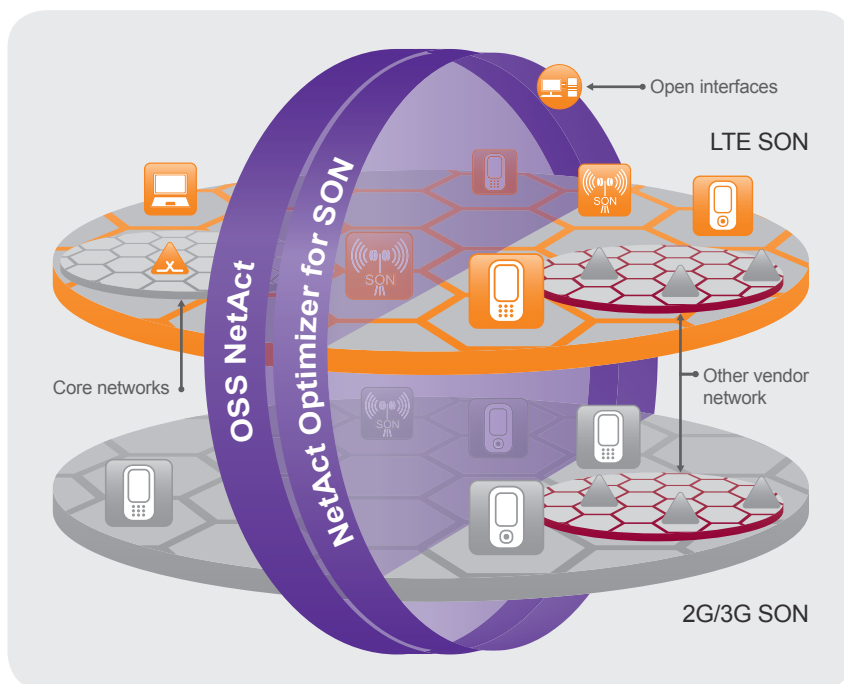
Most of today's mobile communications networks have developed over time into a patchwork of legacy systems, many of which are not fully integrated to work together efficiently and which often rely on their own, isolated management systems. One of the key elements of the Nokia Siemens Networks' SON Suite is our all-inclusive, modular OSS system, NetAct. NetAct gives CSPs an uninterrupted view across all their network domains and enables them to implement a coherent, integrated control and optimization strategy across all of these. The system manages the entire network end-to-end, regardless of which vendors were involved in supplying any legacy systems.

Fast, accurate and automated data flows enable CSPs to achieve true real-time management:

- SON reduces the time-consuming and error-prone manual processes involved in network management, thus increasing efficiency and general interest level of the work
- CSPs can view, manage and control multi-technology and multivendor networks using a single platform

A few of the benefits of the SON Suite:

- The first self-commissioning BTS offers automated plug-and-play network implementation
- SON load balancing can significantly reduce cell overload by transferring excess load automatically to cells with idle capacity
- The NetAct Optimizer reduces the time taken to optimize most network KPI's by 50% compared to traditional optimization procedures
- Using Optimizer reduces drop call rates by 14% on average



- The modular structure of the SON Suite enables control points anywhere in the process, ensuring that CSPs retain full control over any SON automation and optimization

Multi-level architecture

In most SON functions the algorithms reside at both central and site level. With our NetAct OSS, the multi-layer approach is integrated effectively into a coherent system. For example, site-level SON functions include self-configuring plug-and-play BTS technology and automated power savings at times of low traffic.

One of the key centralized tools is NetAct Optimizer. Based on real-time configuration and performance data, Optimizer gives CSPs a unique, geographical network-wide view of multivendor environment. It combats existent interference in a network, automatically manages adjacencies and antenna tilts as well as minimizing the need for drive tests.

Another key benefit from this leading hybrid SON is the unique multitasking SON capability. In any advanced SON solution the interoperability algorithm is a true multidimensional issue. Nokia Siemens Networks is forerunner also in defining interoperability mechanisms to provide fastest return on investment.

Quality matters

SON greatly impacts the end user quality experience of the networks. For example, cell outage detection and recovery ensures uninterrupted LTE base station service, adaptive ANR saves the battery life of mobile phones through lower-consumption signaling and mobility robustness provides optimal connectivity with optimized handover performance.

Strong algorithms underpin the success of any SON solution. The innovative and robust algorithms created by Nokia Siemens Networks stem from tens of years of experience in network optimization and automation ensuring that our SON tools deliver real benefits.

An ideal partner

Nokia Siemens Networks has been helping CSPs to manage their networks for over 20 years. Today, we offer the widest range of SON functions available and we will continue to develop our solutions to comply with LTE SON 3GPP standards and beyond. Thanks to our innovations, we can now offer the first ever automatically network-integrating, plug-and-play BTS. Our SON Suite helps CSPs to make the most of their assets throughout the network lifetime while our algorithm research continues our SON leadership for all network environments.