Liquid Net
Powered by Nokia Siemens Networks

Nokia Siemens Networks
iSON Executive Summary

Nokia Siemens Networks

Automation to manage network complexity

Mobile broadband networks are being expanded and upgraded rapidly, with new technologies and network layers introduced to keep pace with booming traffic and its growing unpredictability. This is leading to more complex operational processes that will be increasingly difficult for conventional manual network management to handle. It is clear that unless Self Organizing Network (SON) automation is introduced, network operational costs may explode and the customer experience could suffer.

Nokia Siemens Networks iSON (intelligent SON) is a portfolio of features and services that help an operator to assess the best deployment and process alignment strategies; implement new network elements with plug-and-play simplicity; automate key operational tasks, transmission capacity and traffic balancing; and automatically optimize some of the network's key quality parameters.

With network management requiring an increasingly high level of expertise, iSON will evolve the roles of operations engineers. The need for expert input and ultimate control will remain. However, iSON will replace the low value repetitive tasks, while also helping with those requiring knowledge, experience and insight, resulting in higher network performance.

The Nokia Siemens Networks iSON portfolio comprises three key components – SON for Core, SON for Radio and Services for SON.

SON for Core

SON for Core implements intelligent, dynamic network management to improve the operation of core network elements. It introduces automation that helps operators to proactively detect, analyze and react to changes in traffic demand and network status.

Ranging from automated, event-based, real-time actions, to automated element configuration, SON for Core's self-aware, self-adapting capabilities monitor and help to prevent harmful bottlenecks caused by traffic peaks. Core network investments are used to their maximum, while increased automation improves operational efficiency and network stability.

SON for Core comprises two levels:

- Automated network management for traffic load balancing, optimized transport capacity distribution, smartphone signaling and voice call distribution.

- Automated network operations management and flexible allocation of resources, for example processing capacity, from virtualized hardware running different core network software applications.

SON for Core is implemented in two main streams. As a distributed function, SON for Core runs in the core network application itself. When SON for Core needs to collect, analyze and react across a group of network elements, then centralized intelligence is needed. This is called the Core Networks Productivity Suite (CNPS). The CNPS can reside on a NetAct OSS system, on independent stand-alone servers, or in the Cloud.

Network automation can be supervised closely and extended at a pace controlled by the operator.

The total cost of ownership of SGSNs is reduced by up to 30%, while transmission costs between radio and packet core elements can be saved by 50% and more, by identifying and selecting co-located network elements. Spare transmission capacity in the A-interface can be reduced by up to 25%. Call route optimization saves up to 10% of annual interconnect fees and smartphone signaling optimization causes up to 70% reduction in GGSN signaling

SON for Radio

Radio access networks comprise complex combinations of cells, frequencies, technologies and layers that require smart optimization and network management. SON for Radio automates the network configuration, healing and optimization of such networks.

iSON will provide automated management of Heterogeneous Networks, enhancing their interworking and mobility. With tools to manage and interoperate multiple layers and technologies, iSON ensures small cells interwork with the macro layer, even in a multivendor environment.

Another key SON function is traffic steering and mobility management. Traffic steering allows operators to optimize their resources, improve the way users experience services and minimize power consumption by directing the traffic to a particular radio access technology (RAT) or layer. It works hand-in-hand with mobility management to ensure a reasonable

number of handovers and eliminate radio link failures. It also considers other factors such as the capabilities of the terminals and network and the load in different RATs and layers.

SON for Radio brings substantial benefits. An example from a typical European operator shows more than 100 M€ savings from revenue retention, OPEX and CAPEX. In another example, handover optimization with Mobility Robustness Optimization (MRO) achieved over 90% reduction of radio link failures and up to 60% improvement in work efficiency.

Services for SON

SON software can be tailored and customized to fit the strategic objectives of the operator and the characteristics of a network. Nokia Siemens Networks Global Services helps operators to maximize this potential.

Services for SON include Consulting, Installation and Integration and Optimization that take into account the different needs of every network to enhance the effectiveness and efficiency of SON. Based on an operator's network criteria and strategic objectives, SON integration and optimization will be implemented and made operational, saving OPEX and ensuring an excellent customer experience.

Nokia Siemens Networks runs some 1,300 network planning and optimization projects around the world each year, ensuring operators receive holistic, expert customization and consultation for SON automation when required.

To sum up, iSON is the most complete and innovative SON solution available. Its holistic approach with radio and core, including Services for SON consultation and customization, maximize the benefits of SON. Nokia Siemens Networks is already delivering mature SON applications for core and radio. This gives an operator end-to-end visibility and control of its network quality and capacity.

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