Automate, manage and control transport and core networks in the 5G era
5G is a game changer. It promises higher performance, lower latency and more flexibility to provide new on-demand services that meet strict quality of service requirements. But delivering on these promises will create unprecedented challenges for your network operations.

Our Network Services Platform (NSP) helps you answer the many challenges that 5G brings by automating your IP, optical and microwave networks to ensure maximum service speed, performance, reliability and security. With NSP, you can simplify your operations, respond to fast-changing demands and get the most from your resources.
What you get with NSP

**Simplicity**

*Abstract complexity without limiting capabilities*

NSP makes it easier to build and maintain multivendor networks that combine IP, MPLS, optical and microwave technologies across multiple domains. It is a comprehensive, user-friendly platform that turns abstract service definition into device-specific commands to simplify operations on even the most complex networks.

**Efficiency**

*Get the most from your people and network resources*

NSP reduces your infrastructure and operating costs by enabling you to rely on one management, orchestration and control platform that supports common tools and practices. By automating repetitive tasks and complex workflows, NSP eases the pressure on your skilled network operations staff and specialized networking tools. By steering traffic to optimal paths, it helps you make better use of your network capacity.

**Agility**

*Keep up with fast-changing market demand*

NSP aligns your network offering with your service requirements by mapping connectivity-specific service-level agreements (SLAs) to underlying traffic engineering policies. Its flexible, modular and programmable approach helps you respond to customers’ needs and quickly adapt to changing demand patterns. NSP’s open interfaces make it easy to integrate and deploy the platform into your existing environment. This helps you accelerate service rollouts.

**Quality**

*Ensure a high quality of experience for every user and application*

NSP is a carrier-class platform that enables you to deliver performance that meets increasingly stringent requirements. It provides the tools you need to troubleshoot the network, fix issues quickly, move traffic and reconfigure the network before an incident actually occurs. NSP uses intent-based networking and closed-loop automation to achieve your intended outcomes and maintain them in real time in unexpected or evolving traffic and network conditions.
NSP answers your need for more responsive, efficient and reliable IP, optical and microwave networks

<table>
<thead>
<tr>
<th>User</th>
<th>Challenge</th>
<th>NSP solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Network operations team</td>
<td>Support all network management, orchestration and control use cases</td>
<td>A complete suite of ready-to-use applications</td>
</tr>
<tr>
<td>Network engineering team</td>
<td>Control the network and optimize traffic in real time</td>
<td>An SDN resource controller</td>
</tr>
<tr>
<td>Engineer or developer</td>
<td>Automate network operations and ease integration with orchestrators and operations support systems (OSS)</td>
<td>An open, programmable platform</td>
</tr>
</tbody>
</table>
What NSP can do for you and your network

Network functions orchestration
Automate lifecycle management for network services
NSP automatically programs the behavior of the network to support application and service specifications. It can create, deploy, update, terminate and delete virtual and containerized network functions, as well as all the data center networks between these network functions.

Equipment configuration
Quickly commission new network equipment
NSP uses a model-driven approach to automate tasks such as MPLS configuration and path setup on any vendor equipment. It ensures that your network is ready for service fulfillment in minutes.

Network service delivery
Get consistent provisioning that makes the best use of available network assets
NSP elevates service fulfillment by making network service deployment fully programmable and placing network services on the best possible resource paths to meet your bandwidth, latency and resiliency targets. It uses real-time network insight to help keep your services on these targets.
Network and service assurance
Anticipate, isolate and resolve issues before they impact the user experience
NSP provides supervision, reporting and prediction tools that help you efficiently troubleshoot network problems, pinpoint root causes and improve network performance. It uses machine learning to detect and diagnose issues fast, and proactively prevent issues where possible.

Path control and traffic optimization
Make the best use of network assets
NSP acts as an external SDN controller Path Computation Element (PCE) that ensures the best placement for network-wide paths and tunnels and steers traffic to avoid delays and congestion. It enables you to compute optimal multi-layer paths across multiple domains to meet SLAs relating to cost, latency, resiliency and bandwidth.

IP/optical coordination
Boost operational efficiency and service availability in IP/optical networks
NSP provides unified network visualization and coordination across the IP and optical layers. Its powerful correlation and automation capabilities help you make your multi-layer, multi-domain network more efficient and resilient.
5G network slicing made simple and efficient

The highly complex nature of 5G network slicing is transforming network operations as we know them. To generate value, a slice needs to meet the specific service requirements – including latency, reliability, throughput and cost targets – of a variety of customer segments.

As you move from supporting a few to several thousand network slices, you will need to fully automate lifecycle management for network slices. This automation must enable you to quickly instantiate, configure, assure, and optimize every slice with minimal effort.

With NSP, you get a solution that completely automates the creation, assurance and optimization of transport and core slices.

You define your intent to connect a 5G service from specific endpoints. NSP automates the creation of core and transport slices using the available underlayer technologies (IP, optical, microwave), tunnels (IP, MPLS, SR, ODU/OCH) and network services (L0, L1, L2, L3). Its choices ensure that the services will meet SLA requirements now and during their entire lifecycle.
Why choose Nokia NSP?
Comprehensive

The only platform you need for network management, orchestration and control
NSP lets you manage, orchestrate and control your transport and core networks across multiple domains, technologies and equipment vendors. Instead of using several network management solutions and controllers, you can rely on one fully integrated platform that supports common tools and practices. NSP’s comprehensive capabilities make tasks simpler for your teams and help promote efficiency and reduce OPEX across your business. They also simplify OSS integrations by making them less complex and expensive to develop. This helps you roll out network equipment and services faster.

Full operational lifecycle support
Use one unified platform to create, configure, provision, optimize and assure network services.

Multi-domain, multi-layer, multivendor support
Manage IP, MPLS, optical and microwave technologies, transport and core networks, physical, virtual and cloud-based network functions, and coordination across network layers.

Ubiquitous analytics
Use full Layer 0 to Layer 7 analytics coverage to generate reports on past events, supervise current performance and predict potential risks.

Ready to use
Use NSP out of the box without having to customize it or write extra code to integrate it into your existing environment.

Rich features
Benefit from broad and deep capabilities and workflows for each functional area, which enable you to use the latest networking and automation technologies to improve management, orchestration and control.
A platform that helps you keep up with continuously evolving requirements

NSP’s flexible and modular approach allows you to match deployment requirements (including FCAPS) now and in the future. It can leverage your past investments by integrating and interworking with your existing systems. It also caters to small network deployments and can scale in step with traffic and network growth. NSP can easily adapt to changing conditions, making it a safe choice for the future, one that lets you evolve your operations at a pace that works for your business.

Adaptable

- **Model-driven approach**: Quickly deploy or upgrade equipment from any vendor in the run-time environment using network mediation based on YANG models, and orchestrate across networks and data centers using TOSCA models.
- **Modular applications and plug-ins**: Choose apps and plug-ins that let you respond to specific requirements or prioritize urgent needs.
- **Programmable system**: Customize NSP to fit your specific operational environment.
- **Machine learning**: Resolve network issues faster with augmented assurance capabilities that learn from past experiences.
- **Workflow automation**: Design custom workflows and automate sequences of routine and repetitive tasks.
Embracing openness for greater flexibility

NSP is fully aligned with the evolution towards open, multivendor environments to give you more flexibility in the way you build your network and services. This openness allows you to take advantage of the full breadth of NSP’s functionality and simplify integration with other systems. NSP complements this openness with a proprietary operating system that provides carrier-class performance, stability, scalability and security.

Developer portal
Get instant access to documented APIs, code snippets, tutorials and a virtual lab that will help you quickly build on-demand, automated networks.

Cloud-native
Take full advantage of the cloud with applications that are built as micro-services and run on a containerized and dynamically orchestrated platform.

Partner program
Benefit from a program that allows us to work with OSS partners to accelerate the availability of high-quality software that has been validated for NSP.

Simple, intent-based APIs
Use standards-based (i.e. IETF, 3GPP) northbound APIs to access all NSP functionality.

Leadership in open source, standardization and interoperability activities (OIF, EANTC)
Choose a cutting-edge platform that’s always up to date with the latest standards. We play an active and collaborative role in key industry groups by driving the evolution of open source and standards, as well as contributing to the latest interoperability activities.

Vendor agnostic
Dynamically onboard southbound NETCONF/YANG and RESTful APIs and models to abstract away differences between equipment and vendors.
Simple to use

**Designed with the user in mind**

NSP is a user-friendly platform that makes your life easier so you can do the job quicker and become more productive. It reduces the pressure on your skilled network operations staff and removes your need for special networking tools by automating repetitive tasks and operational procedures.
NSP facts and figures

800+
Customer deployments in 125 countries

400%
5-year ROI with flexible bandwidth services

Seconds
Time to provision services with NSP

56%
Faster time-to-market with NSP

24%
More revenue-generating traffic
About Nokia

We create the technology to connect the world. Powered by the research and innovation of Nokia Bell Labs, we serve communications service providers, governments, large enterprises and consumers, with the industry’s most complete, end-to-end portfolio of products, services and licensing.

From the enabling infrastructure for 5G and the Internet of Things, to emerging applications in digital health, we are shaping the future of technology to transform the human experience. networks.nokia.com

Nokia operates a policy of ongoing development and has made all reasonable efforts to ensure that the content of this document is adequate and free of material errors and omissions. Nokia assumes no responsibility for any inaccuracies in this document and reserves the right to change, modify, transfer, or otherwise revise this publication without notice.

Nokia is a registered trademark of Nokia Corporation. Other product and company names mentioned herein may be trademarks or trade names of their respective owners.

© 2020 Nokia

Nokia Oyj
Karaportti 3
FI-02610 Espoo, Finland
Tel. +358 (0) 10 44 88 000

Document code: 47624046 (September) CID206858