The Nokia Smart Plan Suite (SPS) enables new monetization models with integrated policy and charging capabilities. Built specifically for the demands of IoT and 5G, SPS enables service providers to increase revenue with innovative and profitable service offers in support of digital services enablement. SPS is based on a common cloud-native architecture that supports modular applications and capabilities.

Service providers seek better ways to better monetize the digital experience of consumer customers while tapping into new revenue opportunities driven by IoT and 5G enabled use cases and business models. Time to market and the ability to launch compelling services faster is a key priority, along with the ongoing requirement to reduce OPEX.

5G enables a new breed of use cases and business models for consumer and enterprise users, which cannot be easily monetized with legacy solutions. SPS enables service providers to tap into this emerging opportunity by combining modern policy and charging functions to create innovative digital service offers.

Leveraging Nokia’s Common Software Foundation, it is built on a cloud native architecture using microservices and leveraging flexibility and speed of containers. Continuous delivery and DevOps automation ensure superior agility and time to market.

Designed for multi-vendor deployments, it’s also pre-integrated with Nokia’s core and IoT solutions. SPS is augmented by adjacent BSS capabilities such as mediation, billing and customer engagement, as well as Nokia’s rich set of AI/ML enabled analytics capabilities.
Figure 1. SPS architecture

Key features and benefits

<table>
<thead>
<tr>
<th>Features</th>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common Platform</td>
<td></td>
</tr>
<tr>
<td>• Cloud-native architecture leverages Nokia’s Common Software Foundation</td>
<td>• Open software sourcing, development, and delivery practices for speed, quality, and serviceability</td>
</tr>
<tr>
<td>• Multi-tier architecture with local N+K redundancy and geo-redundancy</td>
<td>• Scalability, elasticity and reliability</td>
</tr>
<tr>
<td>• VNF model is based on ETSI MANO architecture with all SPS VNF LCMs automated through VNFM according to MANO standards</td>
<td>• Automated operations such as operator-triggered scaling, self-scale, self-heal for best user experience</td>
</tr>
<tr>
<td>• VNF is cloud agnostic and supports both OpenStack and VMware</td>
<td>• Flexible deployment options</td>
</tr>
<tr>
<td>• Framework for microservices architecture with lightweight containers managed by Kubernetes</td>
<td>• Framework for independent services with self-service discovery enhances flexibility, performance and scalability while overcoming cloud reliability limitations</td>
</tr>
<tr>
<td>• Continuous Delivery with DevOps</td>
<td>• An agile process for rapid feature delivery and acceptance by the customer for faster time to market</td>
</tr>
<tr>
<td>• Agile Rules Technology (A.R.T.) backed by 150 patents</td>
<td>• Flexibility to support complex and emerging use cases without compromising performance and scalability</td>
</tr>
<tr>
<td>• Centralized, common GUI and API with SDK across all modules</td>
<td>• In-field programmability for faster time to market</td>
</tr>
<tr>
<td></td>
<td>• Centralized API for upstream systems used for provisioning (e.g., Service orchestration, provisioning systems)</td>
</tr>
<tr>
<td></td>
<td>• SDK for API customization allows for rapid deployment and customization to non-standardized IT systems</td>
</tr>
<tr>
<td></td>
<td>• Easy-to-use GUI</td>
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</tbody>
</table>
## Features

<table>
<thead>
<tr>
<th>Policy</th>
<th>Benefits</th>
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</thead>
<tbody>
<tr>
<td>• Comprehensive set of field-proven capabilities</td>
<td>• Addresses wide range of use cases for 4G, 5G and fixed deployments</td>
</tr>
<tr>
<td>• Flexibility and simplicity in creating rules</td>
<td>• Speeds up time to market</td>
</tr>
<tr>
<td>• Built in protocol manipulation</td>
<td>• Better interoperability simplifies network integration in multi-vendor deployments</td>
</tr>
<tr>
<td>• Pre-integrated with other Nokia solutions</td>
<td>• Rapid deployment with out-of-box support for advanced concepts like 5G end-to-end slicing</td>
</tr>
</tbody>
</table>

## Rating and Charging

<table>
<thead>
<tr>
<th>Benefits</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Flexible data model</td>
</tr>
<tr>
<td>• Decision tree-based offer design</td>
</tr>
<tr>
<td>• Unique adaptive quota algorithm</td>
</tr>
<tr>
<td>• Pre-integrated with other Nokia solutions</td>
</tr>
</tbody>
</table>

## Technical specifications

### Protocol and standards support

**Aligned with 3GPP R7/8/9/10/11/12/13/14/15/16**

- Network Architecture (TS 23.002)
- Organization of Subscriber Data (TS 23.008)
- Policy and Charging Control Architecture (TS 23.203)
- General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access (TS 23.401)
- Architecture enhancements for non-3GPP accesses (TS 23.402)
- System Architecture for the 5G System (TS 23.501)
- Procedures for the 5G System (TS 23.502)
- Policy and Charging Control Framework for the 5G System (TS 23.503)
- Interworking between the Public Land Mobile Network (PLMN) supporting packet-based services and Packet Data Networks (PDNs) (TS 29.061)
- Policy and Charging Control over Gx reference point (TS 29.212)
- Policy and Charging Control Signaling flows and QoS parameter mapping (TS 29.213)
- Policy and Charging Control over Rx reference point (TS 29.214)
- Policy and Charging Control: Spending Limit Reporting over Sy reference point (TS 29.219)
- Technical Specification Group Core Network and Terminals Diameter applications (TS 29.230)
- Evolved General Packet Radio Service (GPRS) Tunneling Protocol for Control plane (GTPv-2; Stage 3) (TS 29.274)
- User Data Convergence (UDO); User Data Repository Access Protocol over the Ud interface (TS 29.335)
- Network Function Repository Services (TS 29.510)
- Session Management Policy Control Service (TS 29.512)
- Policy and Charging Control signalling flows and QoS parameter mapping (TS 29.513)
- Spending Limit Control Service (TS 29.594)
- Charging Architecture and Principles (TS 32.240)
- PS-domain Charging (TS 32.251)
• SMS Charging (TS 32.274)
• MultiMedia Telephony (MMTel) charging (TS 32.275)
• Services, operations and procedures of charging using Service Based Interface (SBI) (TS 32.290)
• 5G system, charging service; Stage 3 (TS 32.291)
• Charging Data Record (CDR) parameter description (TS 32.298)
• Diameter Charging Application (TS 32.299)
• Digital cellular telecommunications system (Phase 2+); Mobile Application Part (MAP) specification for USSD (TS 09.02)
• CAMEL Phase 1 (TS 09.78, version 5.3.0, release 1996)
• CAMEL Phase 2 (TS 09.78, version 6.3.0, Release 1997)

Cloud deployment options

**NFV Infrastructure**
• Nokia CloudBand Infrastructure software (CBIS) with Nokia AirFrame or HP C7000 Gen9
• OpenStack Queens
• VMware vCloud NFV: ESXi with vCloud Director

**VNFM**
• Nokia CloudBand Application Manager (CBAM)

**Fault & Performance Management**
• Nokia NetAct FastPass

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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

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