Overview
Software-defined Networking (SDN) allows network operators to move away from traditional vendor-locked networking to a more flexible vendor-independent networking paradigm enabling operators to improve network efficiency, optimize application performance and respond quickly to new service requests. SDN enables network administrators to create many virtual networks with traffic isolation to support a distributed multi-tenant cloud infrastructure, without having to worry about the underlying physical network.

ALTEN Calsoft Labs has been a pioneer in SDN since 2009 - from grounds up OpenFlow protocol implementation to SDN Controller and Application development in key areas such as network isolation, Layer-3 forwarding, security and QoS policy enforcement, centralized network management and service assurance.

Our Services
ALTEN Calsoft Labs has the experience of working with both Network Equipment Manufacturers (NEMs) and Cloud Service Providers in SDN product/solution development and SDN solution implementation/systems integration. Our services are backed by over two decades of product engineering and software development experience in L2-L7 switching/routing, firewall and security policy enforcement, network management (EMS/NMS) and service management (OSS/BSS) solutions.
- SDN Controller feature development for tenant based networks, ACL and security policy enforcement, Layer-3 forwarding, service chaining, L3 VPNs, etc.
- SDN Controller plug-in development such as Device Adapters for legacy (non-OpenFlow) network elements and Resource Adapters for third party resource managers such as VMware vCenter, Juniper Firefly, Nuage Networks, etc.
- SDN Application development for end-to-end network visualization, FCAPS, network management, one-touch service provisioning, service activation, SLA monitoring and OAM/service assurance.
- SDN solution implementation and integration with existing NMS, OSS/BSS and new NFV MANO and Cloud service orchestration and management systems.
- SDN Lab set up and scenario based SDN solution testing and validation for various Datacenter and LAN/WAN network use cases — identify and fix bugs, capacity and performance bottlenecks prior to production deployment.

**Accelerating Open source Adoption**

ALTEN Calsoft Labs has a track record of working with different open source SDN controllers such as NOX, POX, Beacon, Floodlight, OpenDaylight (ODL), OpenContrail and ONOS, in extending controller features, platform hardening, development of SDN applications based on Telco use cases, and integration with Third party systems including EMS, NMS, OSS/BSS, NFV MANO and IT Cloud automation solutions.

**OpenDaylight (ODL) Expertise**

OpenDaylight Controller with its model-driven architecture based on field-proven technologies presents a base SDN platform that is open to enhancements and extensions. ALTEN Calsoft Labs has been engaged in multiple ODL projects since its inception. Our expertise includes:

- OpenFlow, AD-SAL and MD-SAL plugin development
- Data modeling based on YANG
- Development of network applications and dynamic deployment of application bundles using Karaf
- Maven-based build automation and testing

**Third Party SDN Controller Expertise**

We offer SDN application development and Systems Integration services for different commercial SDN Controllers such as Blue Planet, HP VAN SDN Controller, Juniper Contrail, NEC Programmable Flow Controller, Nuage Networks VSP and VMware NSX.