Performance & service quality monitoring on virtualized networks

September 2018

ARGELA

Introducing Argela

Solutions for Telecoms

- Network, service and subscriber analytics solutions
- Mobile/Fixed Operators, MVNOs and Enterprises
- Global customer base, spanning Middle East, Asia, Africa, Latin America

Solutions for Public Safety & Defense

- 4.5G Macro Base Stations
- SDN & NFV Based Secure Network Infrastructure, SD-WAN+

Research and Innovation

- SDN & NFV Transformation
- 5G Center of Excellence, at the forefront of 5G initiatives and enabling technologies
- Multiple patent applications including SDN & RAN Slicing
- Active member of various open source communities (LFN, ONF, etc)

Argela Network & Customer Product Portfolio

Network Monitoring

- Full visibility across all networks: 2G, 3G, 4G, CS, PS, IMS
- Effective resource optimization and planning
- Vendor independent real-time analytics

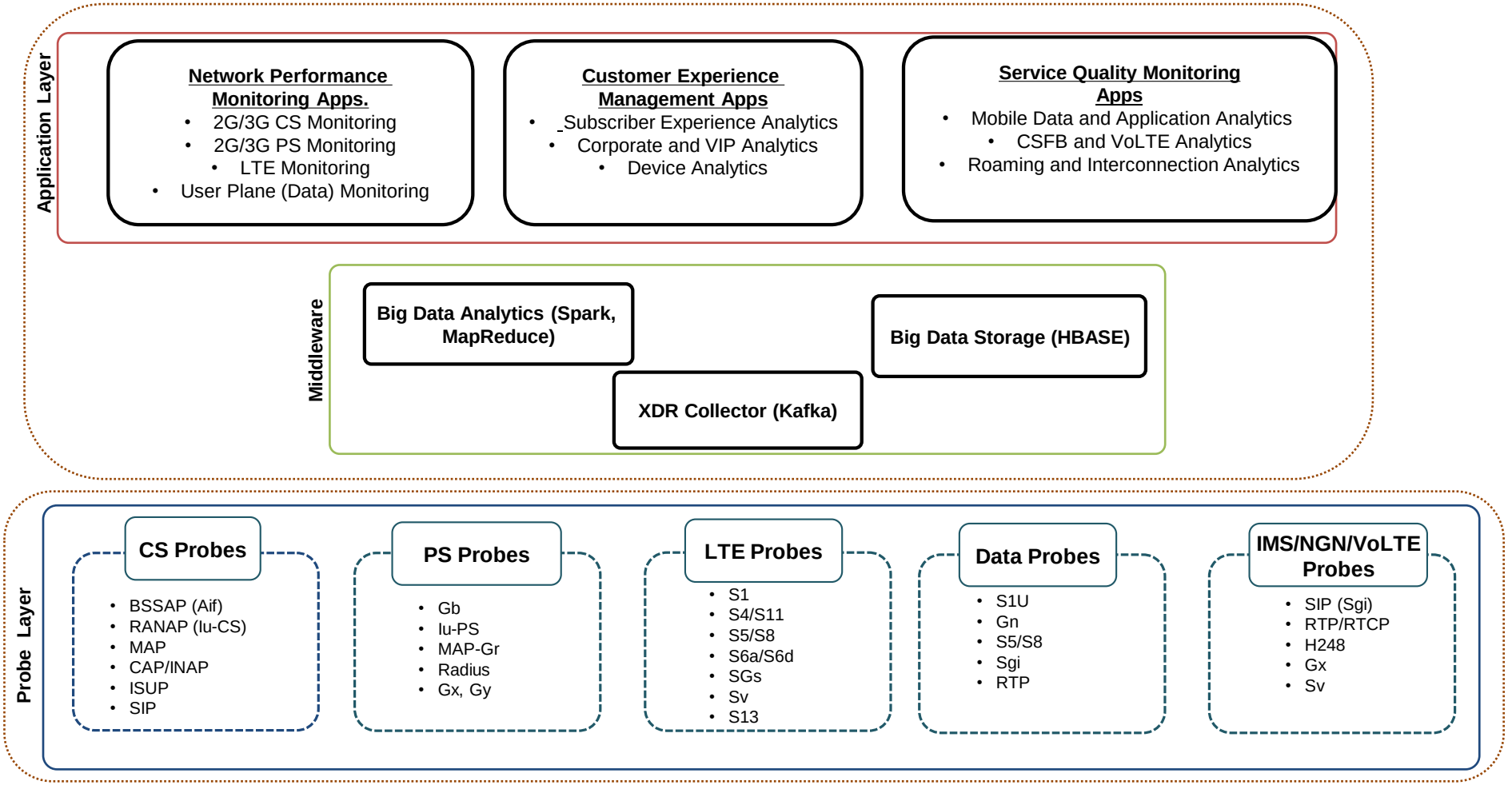
Subscriber Analytics

- Customer experience analytics and management
- VIP & corporate analytics and SLA assurance
- Integration to CRM and DWH

Service Analytics

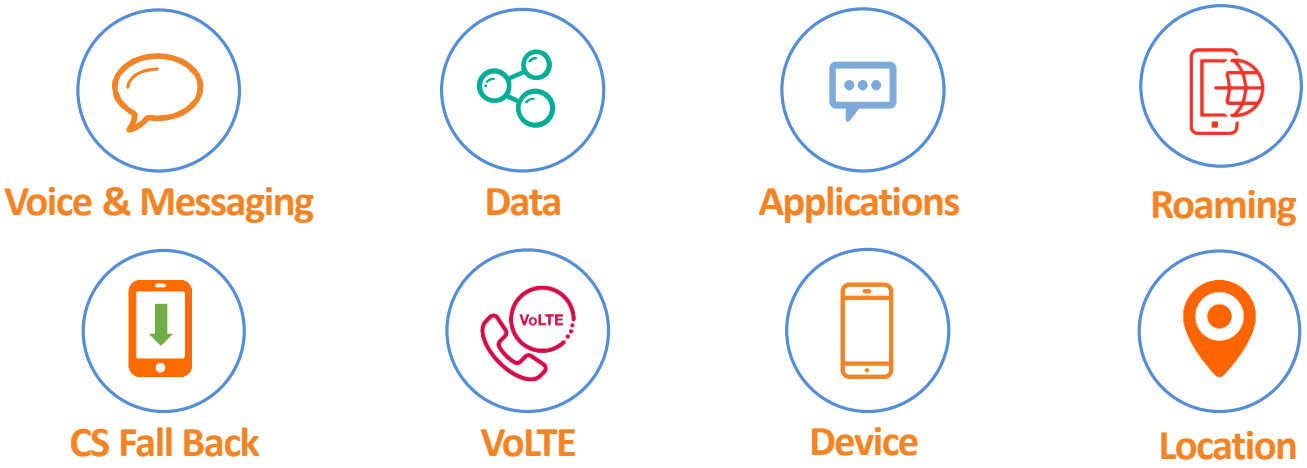
- Roaming and interconnection analytics
- LTE (CSFB and VoLTE) service analyser
- Service quality monitoring for voice, SMS, mobile broadband
- Device and location analytics

Argela Network & Customer Assurance Product Portfolio



Argela NCA Product Portfolio

High level performance indicators and drill down capabilities for fixed and mobile services. Evaluation of service quality and rich KPI reporting for each service in the portfolio, covering all networks



End-to-end service visibility across all domains, providing a comprehensive view of service performance – spanning mobile (2G/ 3G/ 4G/VoLTE), IMS/ NGN, Fixed (PSTN/ ISDN). Objective reporting for strategic insights

Virtualization with NFV

Network Operators are looking for next generation solutions based on SDN and NFV.

N

Network

NFV aims to transform the way that network operators architect their networks

F

Functions

NFV involves the implementation of network functions as a software

Running on industry standard server hardware

Moved or instantiated in various locations of the network as required without requiring installation of new hardware

V

Virtualization

Physical network functions are migrating to Virtual Network Functions

Gradual / Partial

Transition to virtual networks will be gradual, it will take quite a time

Not all network functions will be virtualized

Physical networks will not go away completely even if more and more legacy equipment are virtualized every day

Hybrid

Networks will operate in hybrid environments for some time

Open

Open sources projects such as ONAP & OPNFV are preferred by operators

NFV will Change How the Network Operators do Business Forever!

Virtualization Benefits for the Operators

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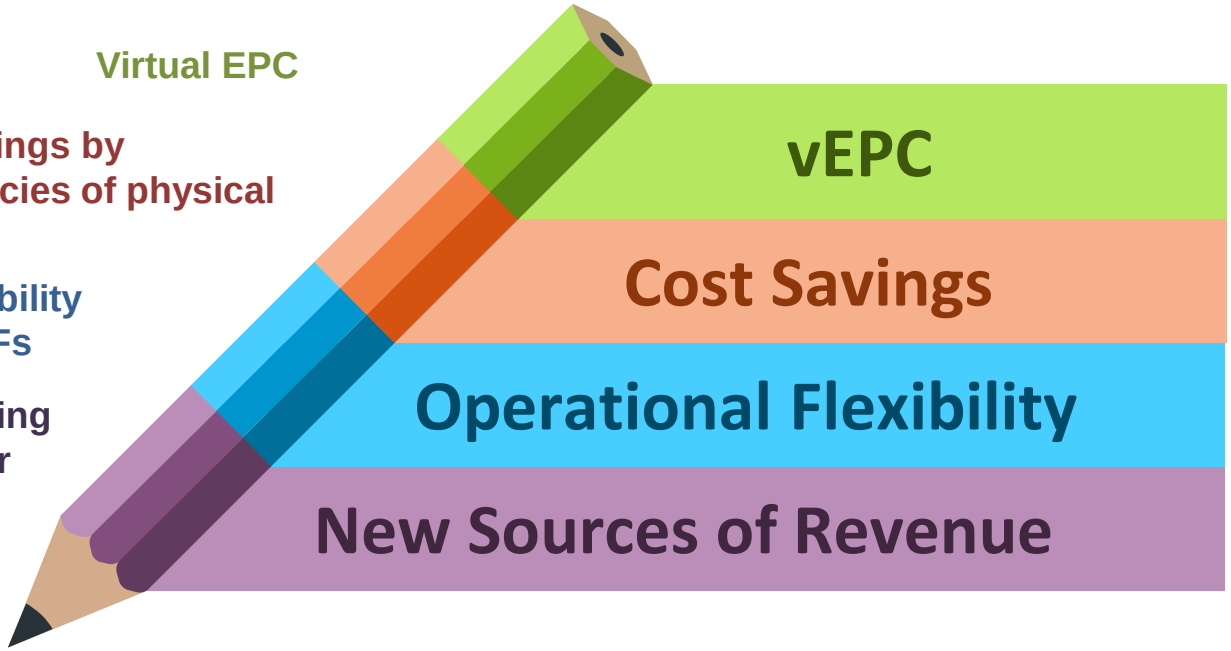
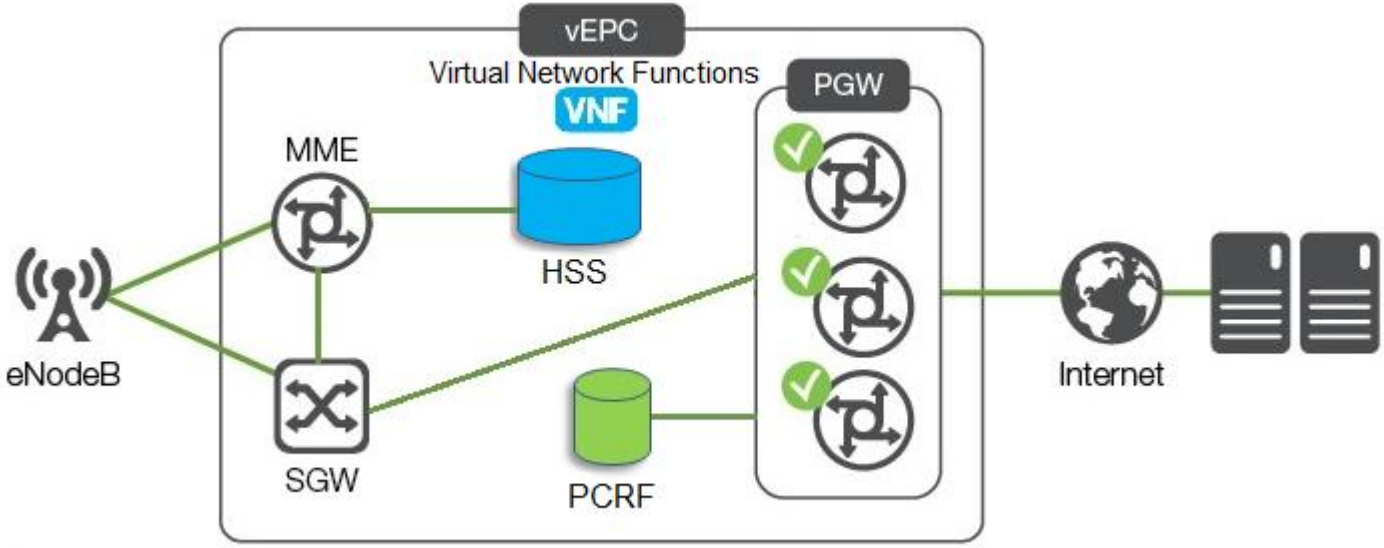
Virtual EPC

Operational cost savings by eliminating inefficiencies of physical networks

Increased operational flexibility and efficiency through VNFs

Increase revenue by quickly rolling out new services that subscriber demands





Challenges of Monitoring Virtual Networks

How can operators know that the Virtualized Network Functions (VNFs) are working correctly and guarantee service reliability?

- Monitoring and optimizing performance in a virtual environment is more challenging
- NFV Orchestrator can modify network configuration by moving, deleting or adding new network nodes, making the conventional monitoring solutions obsolete
- In virtual networks such as vEPC key interfaces are not visible on physical interfaces
- To fully effective monitoring, operators must now be able to monitor not only traffic between physical interfaces, but also logical interfaces
- Current physical probes cannot reach the logical interfaces that use internal VM-to-VM communication between functions hosted on the same server
- Due to the nature of NFV, there will be a loss of visibility between VNFs

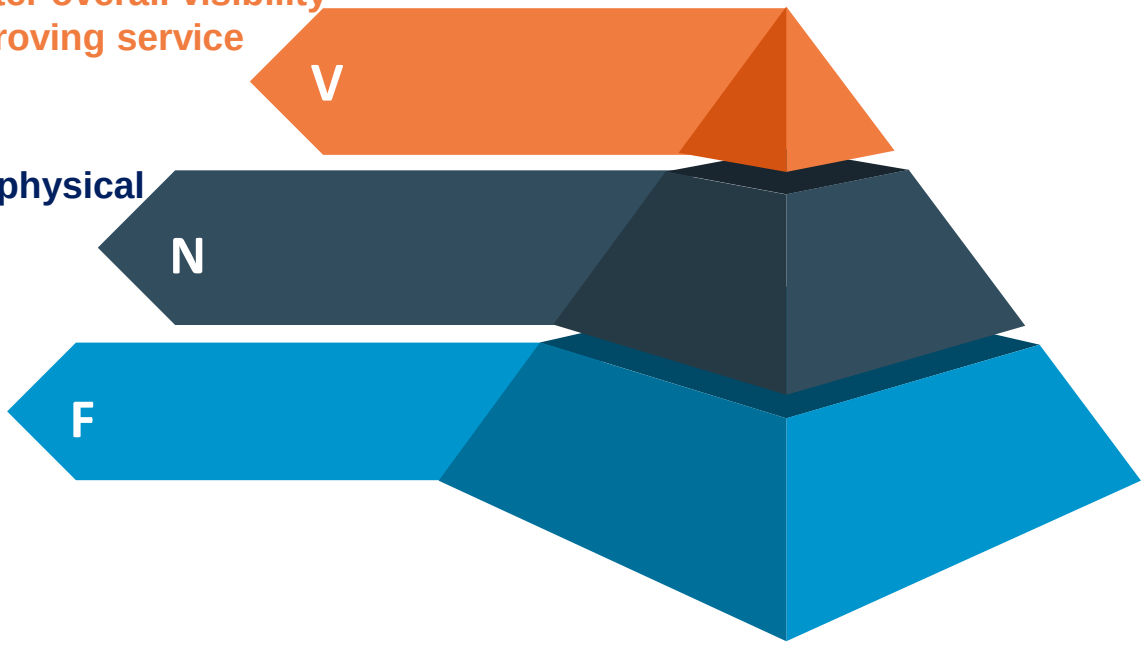
A service assurance solution capable of monitoring both physical and virtual interfaces is critical!

Virtual Probe is the Answer

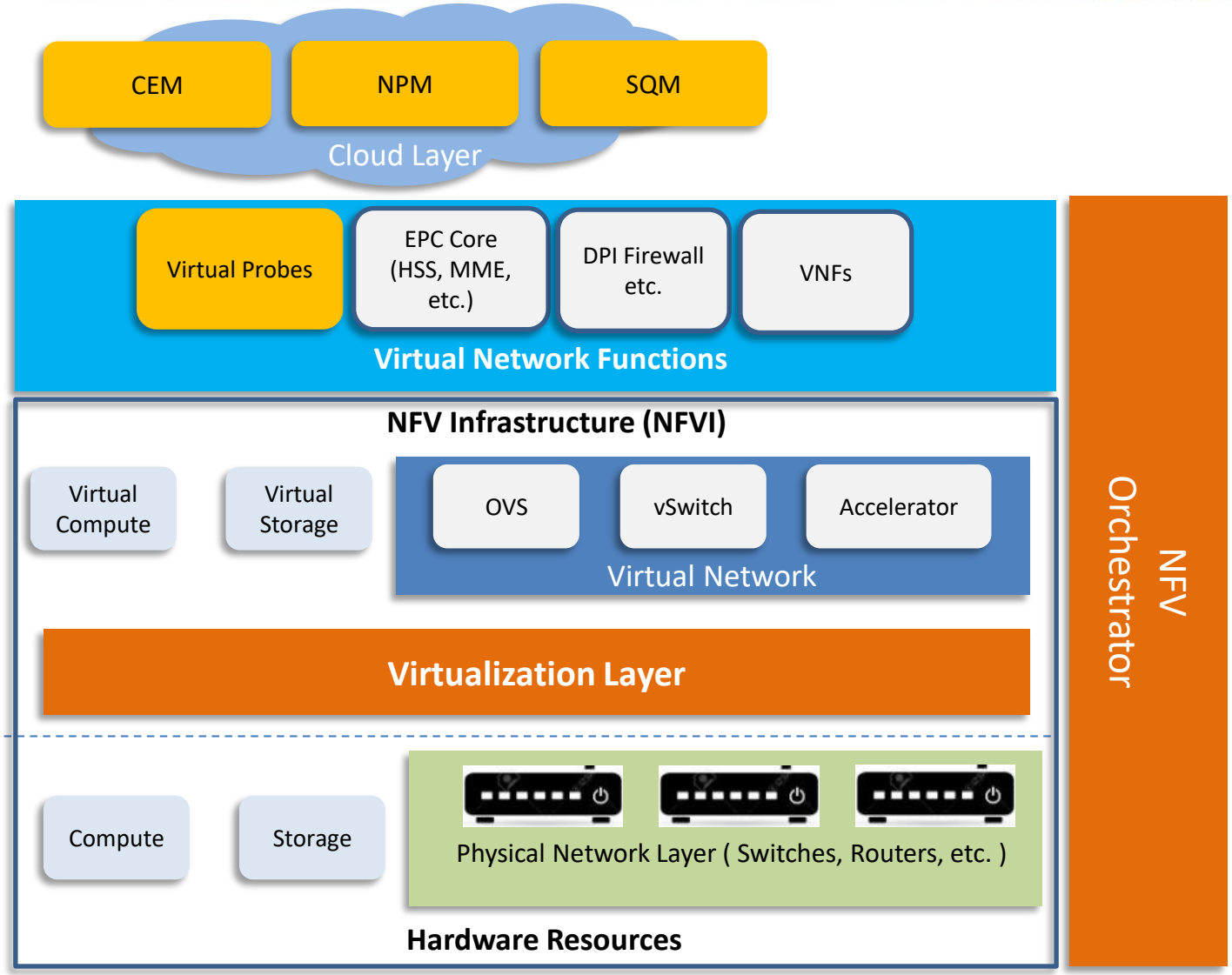
A virtual probe is needed to provide greater overall visibility into and across the virtual networks, improving service levels and overall customer experience

A virtual probe can monitor both external physical interfaces and VM-to-VM communications

A virtual probe monitoring VNFs reduces the CAPEX and OPEX by using a standard off-the-shelf hardware rather than proprietary appliance

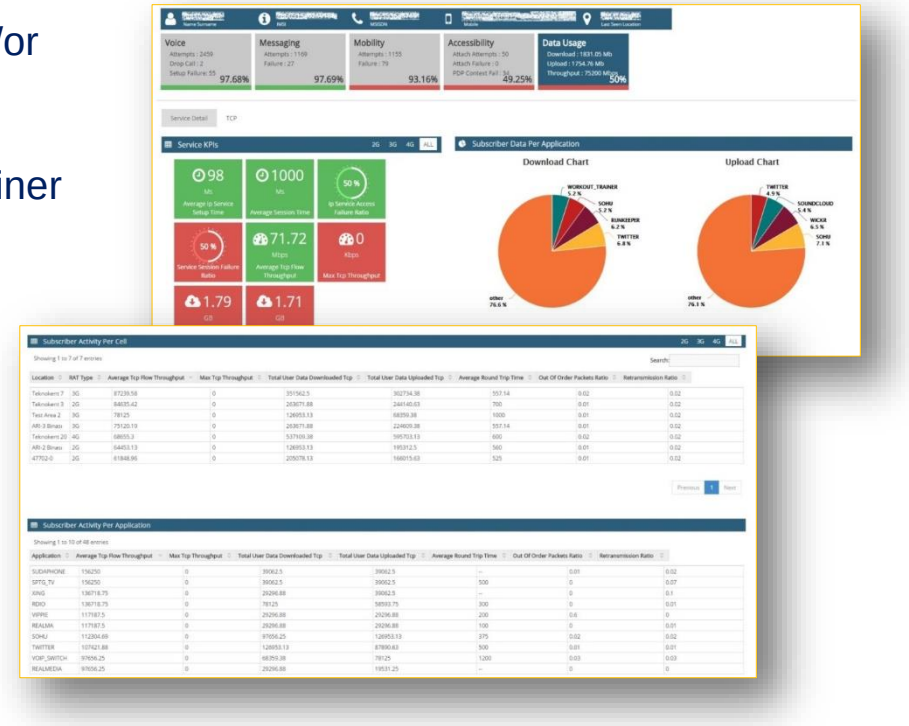


Virtual Monitoring Solution – NFV view



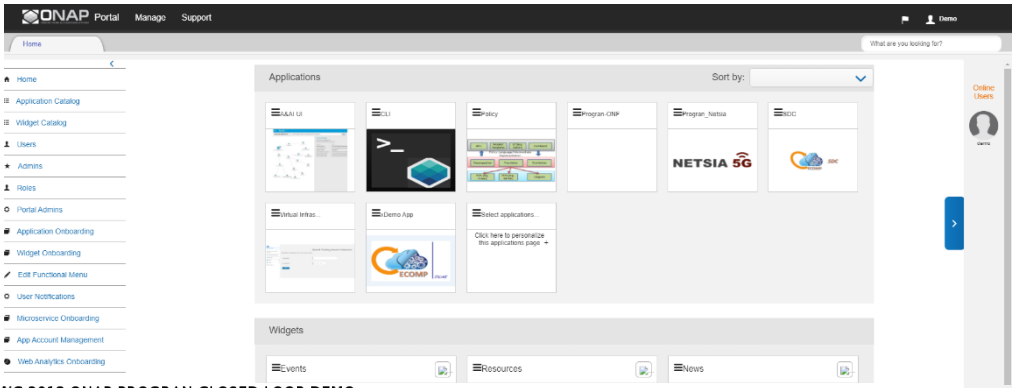
Virtual Monitoring Solution

- Tapping traffic through vSwitch/OVS and/or Neutron
- vProbe deployed as a VNF (VM or container based)
- Onboarding process
- Session Correlation
- Close Loop Automation
- Inband Telemetry

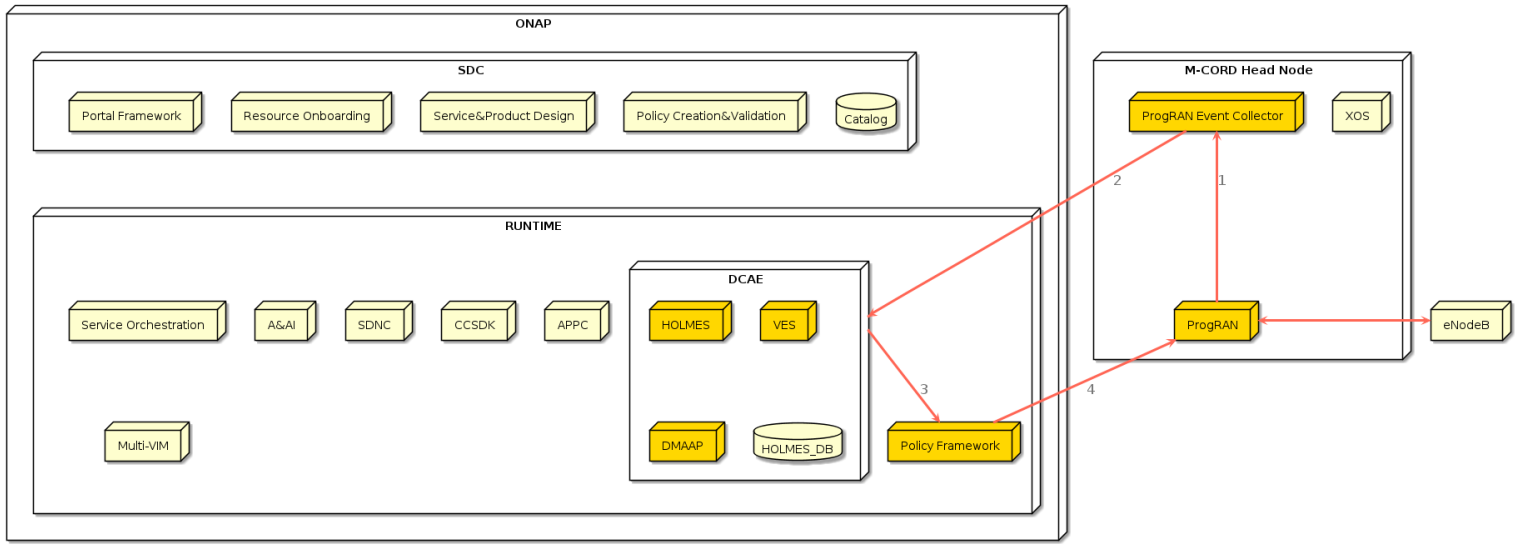


Closed Loop Automation PoC

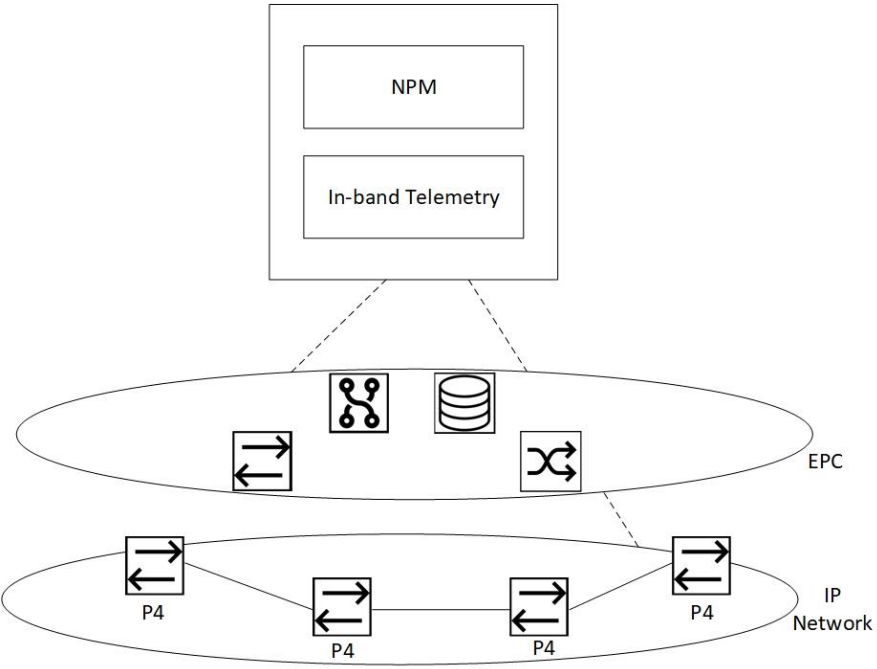
Utilizing ONAP Closed Loop Automation for ensuring sufficient bandwidth to a subscriber



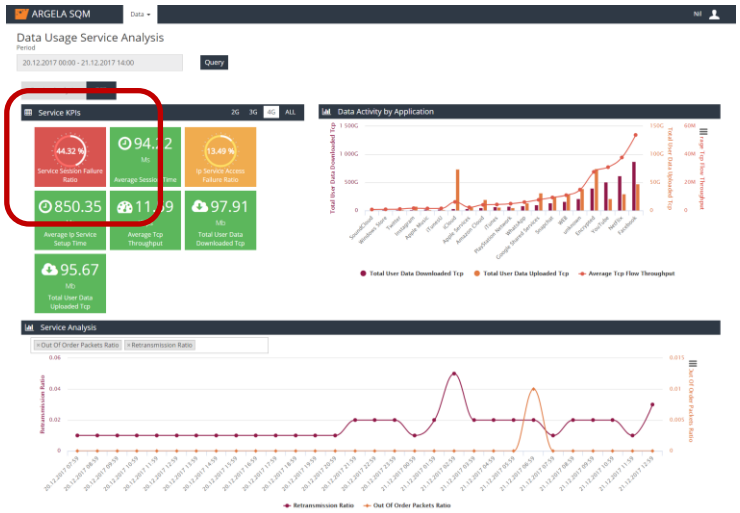
NETSIA MWC 2018 ONAP PROGRAN CLOSED LOOP DEMO

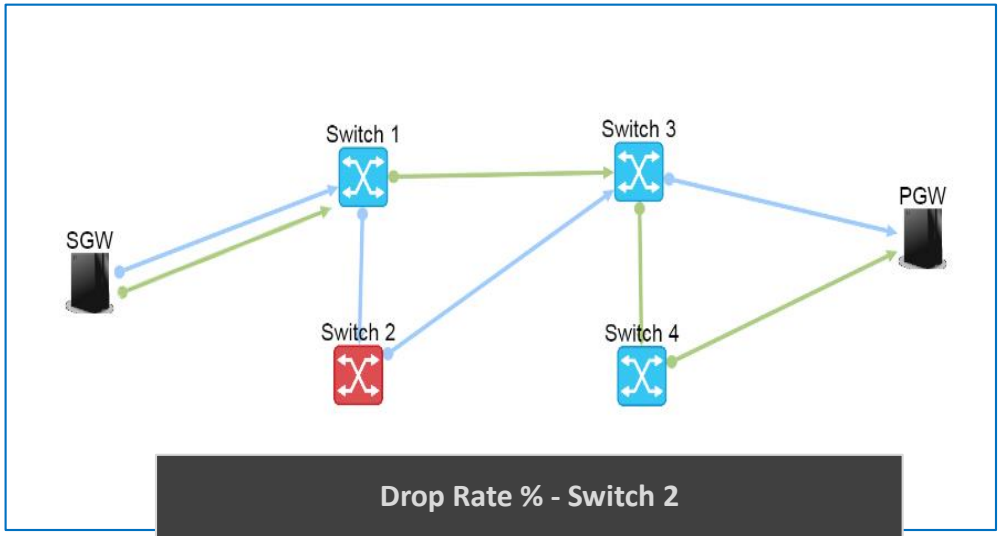


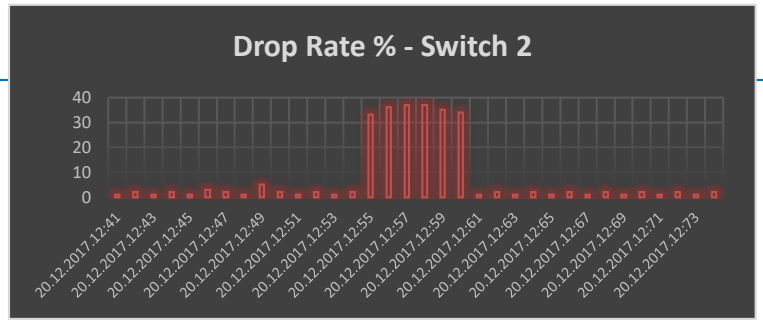
In-band Telemetry PoC



- Automatic detection of anomaly through a sudden increase in packet drop rates
- Automatic enablement of In-band Telemetry header insertion in IP backbone
- Automatic detection of IP switch causing the problem







Thank You