

sonata

agile service development and orchestration in 5G virtualized networks



SONATA Use Cases and Pilots

Athens 6-7 Feb. 2017



Outline

- Brief SONATA architecture
- Use Case reference documents
- From Use Cases to Pilots
- SONATA Pilots and Environments

Actors

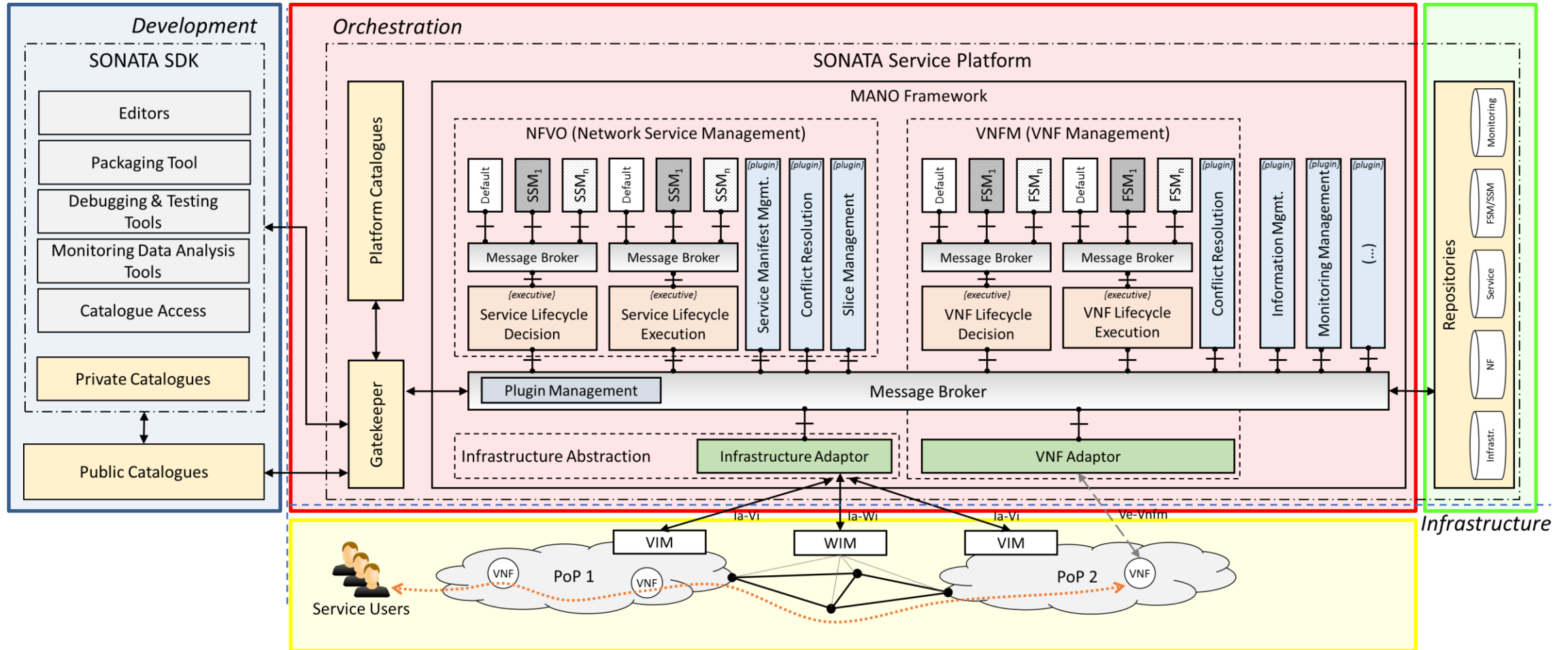


- End-Users
 - Consumes virtual network services
- Developer
 - Designs, develops, debugs network functions and services
- Service Platform
 - Hosts and operates the virtual network services



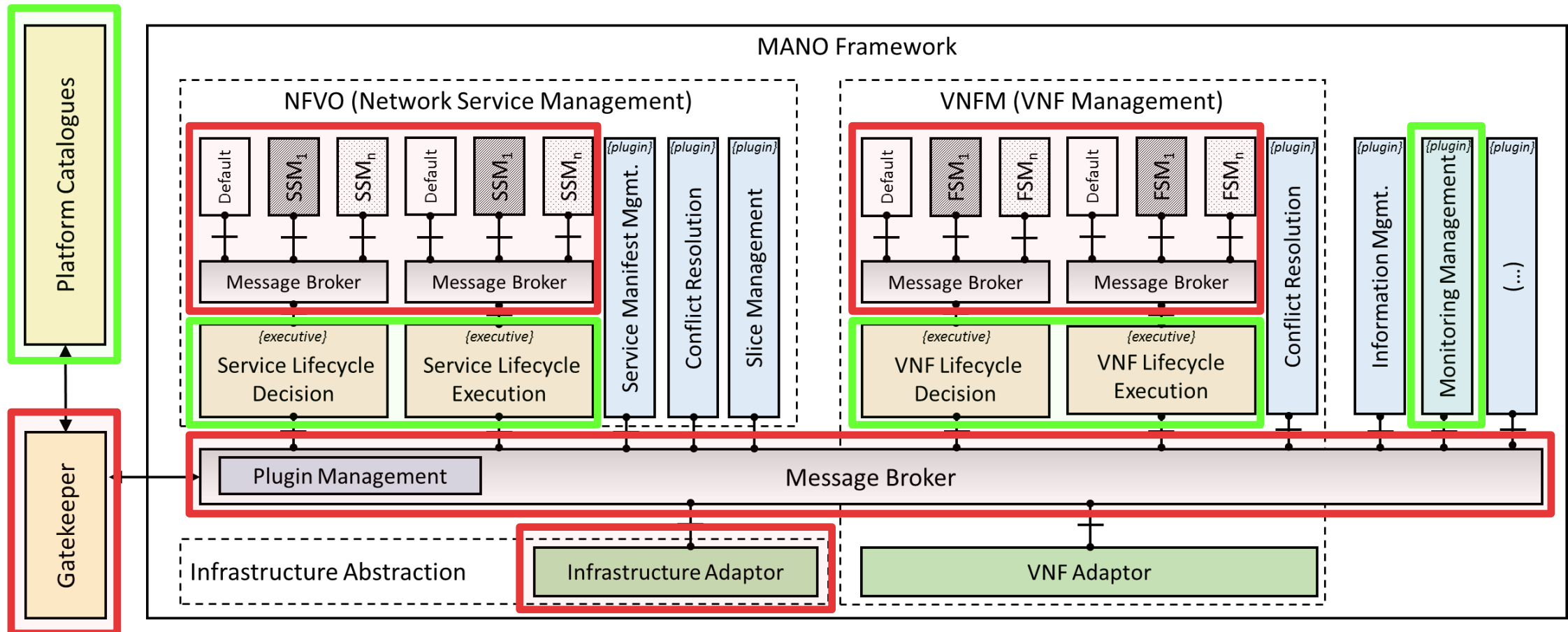
- Infrastructure Operator
 - Operates the infrastructure, like OpenStack, to run virtual services
- Service Platform Operator
 - Operate the MANO system that manages the virtual services
- End-Users
 - Consumes virtual network services

Architecture



Architecture (Service Platform)

- Further highlights



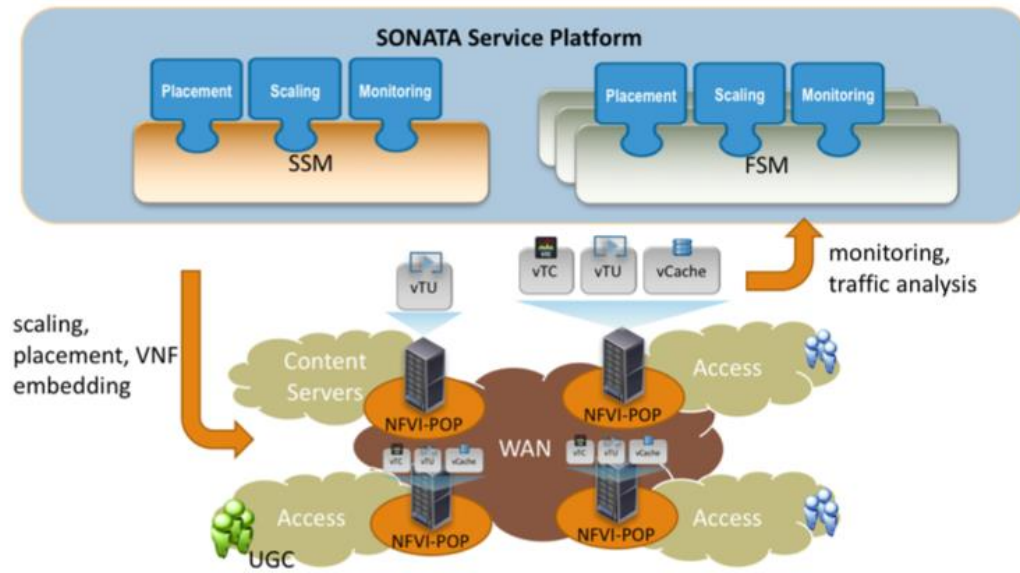
SONATA Use Cases

- Initially Use Cases were defined in order to elicit functional and non-functional requirements:
 - Use Case 1: Virtual Content Delivery Network (vCDN)
 - Use Case 2: IoT
 - Use Case 3: vEPC
 - Use Case 4: Industrial Networks (iNets)
 - Use Case 5: Personal Security Application (PSA)
 - Use Case 6: Multiple SONATA Service Providers (twoSPs)

SONATA Pilots

- Refinement of the Use Cases to acquire Pilots for the SONATA Demonstrations
- **Pilot 1:** vCDN Use Case covering:
 - Classic vCDN deployment
 - User Generated Content (UGC) based vCDN
- **Pilot 2:** Personal Security Application covering:
 - Parental Control
 - DDoS attack mitigation
- **Pilot 3:** Multiple SONATA Service Providers
 - Service Platform 1 (SP1) adopts the role of 'master' and requests the second 'slave' SP (SP2) to deploy VNFs
 - establishment of a SP hierarchy where an 'umbrella' SP manages the two platforms that controls the service admin domains.

vCDN Pilot



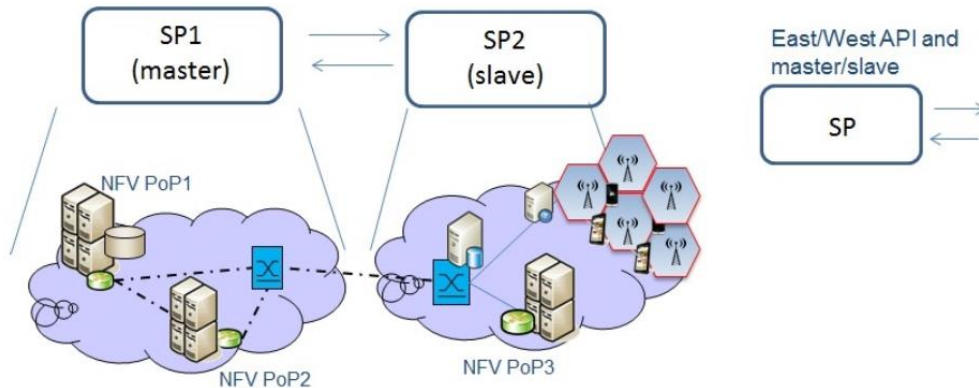
Four scenarios are envisaged:

- Network Service reconfiguration
 - Customer demands that additional resources
- Scaling
 - New load is gradually introduced at some of the edges of the provisioned slice
- User Generated Content Classification
- QoE enhancement
- Considered VNFs are:
 - Virtual Transcoding Unit (vTU)
 - Virtual Traffic Classifier (vTC)
 - Virtual Cache (vCache)

Security Application Pilot

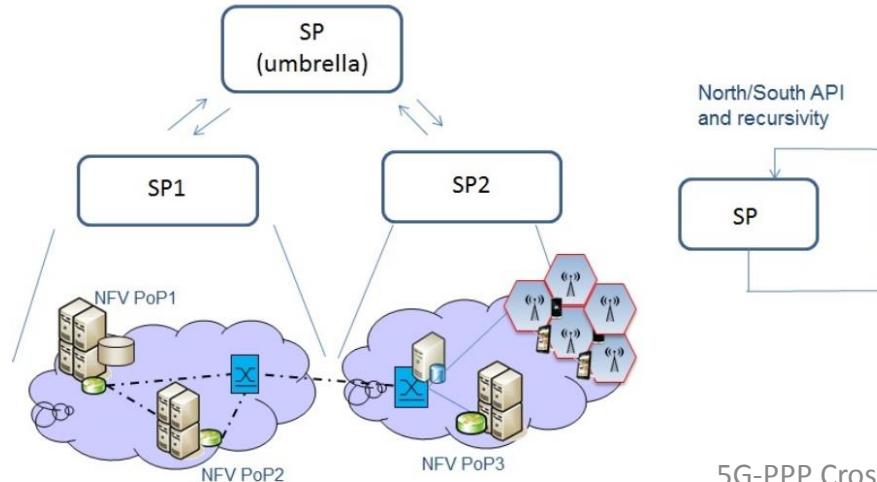
- Scenario 1: Parental Control: Adaptive filtering of network traffic based on per user defined policies. Includes:
 - VNFs for the support of parental control features (i.e WebProxy, VPN)
 - Automatic configuration and SFC selection based on profiles
- Scenario 2: Mitigation of DDoS attack originated by sources at the edge of the customer's network slice. Includes:
 - VNFs for the detection of the offending flows (IDS/IPS, FW)
 - Remedial actions to stop/prevent the DDoS attacks (reconfiguration etc)

SP-2-SP Pilot



Scenario 1: Service Platform 1 (SP1) adopts the role of 'master' and requests the second 'slave' SP (SP2) to deploy VNFs.

- Requires a west/east-bound API between SPs, which allows the management of services on another SONATA Service Platform.



Scenario 2: The establishment of a SP hierarchy where an 'umbrella' SP manages the two platforms that controls the service admin domains.

- Requires one level of recursivity of the SONATA service platform.

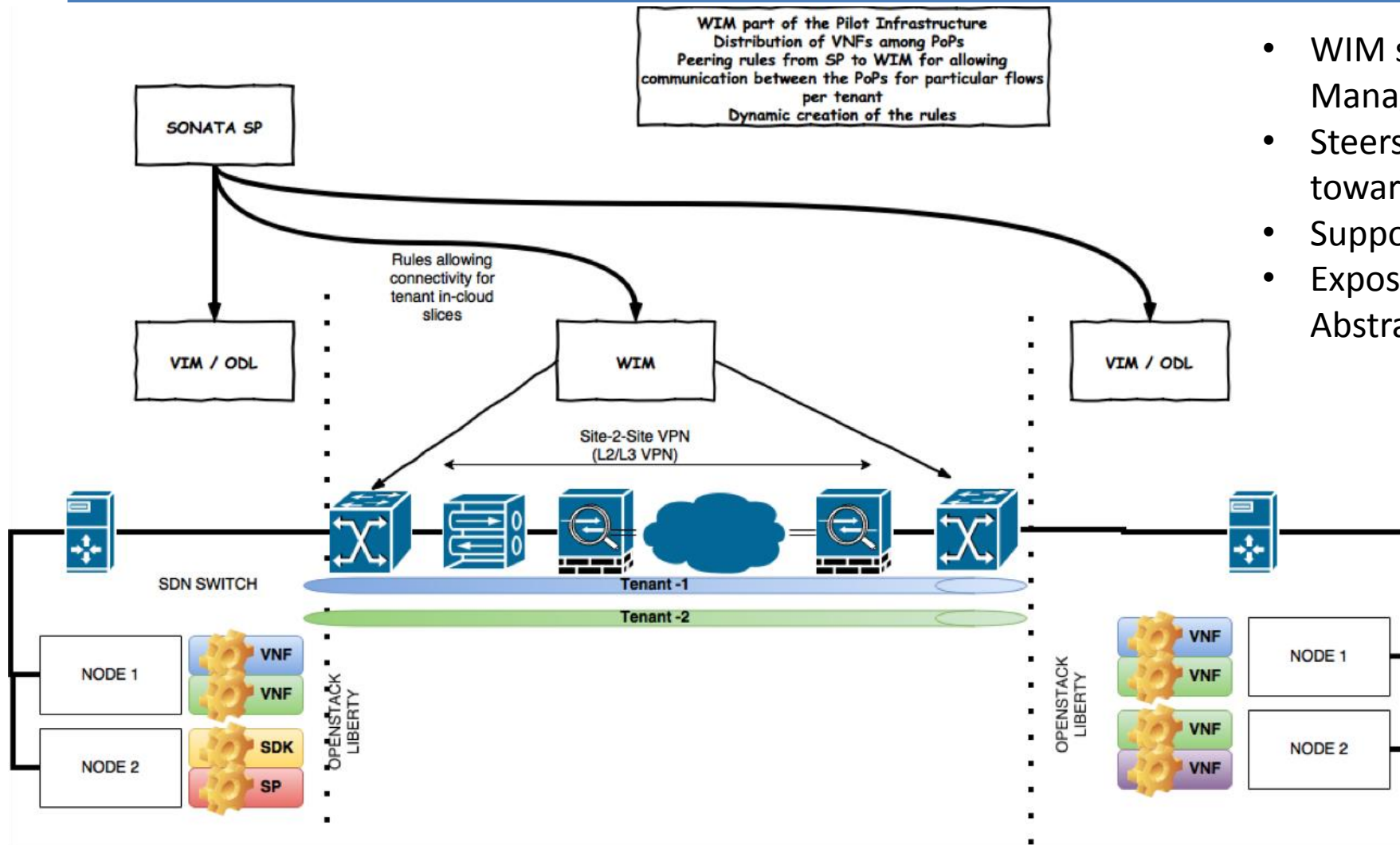
SONATA Use Cases Reference Documents

- The reference publicly available documents are:
 - D2.1 Use Cases and requirements [[link](#)]
 - D2.3 Updated Requirements and Architecture Design [[link](#)]
 - D6.1 Definition of the pilots, infrastructure and maintenance report [[link](#)]

Current Deployment Status

- SONATA supports three environments for support of the DevOps:
 - Integration Environment
 - Deploys the development phase artefacts for integration testing
 - Single NFVI-PoP*
 - Qualification Environment
 - An automated qualification platform with Continuous Deployment capabilities
 - Integrated and verified packaged components are deployed for qualification tests.
 - Multi-PoP**, WAN interconnected managed by WIM.
 - Access Network for connecting physical service and user nodes.
 - Demonstration Environment
 - Multiple testbeds interconnected in a star topology via Site-2-Site VPN connections

SONATA Demonstration Environment



- WIM solution based on VTN Manager (ODL project)
- Steers the traffic from the CPE towards the NFVI-PoPs
- Supports multiple tenants
- Exposes APIs to Infrastructure Abstraction (@SP)

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Thank you!