

sonata

agile service development and orchestration in 5G virtualized networks



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The SONATA Modular Architecture

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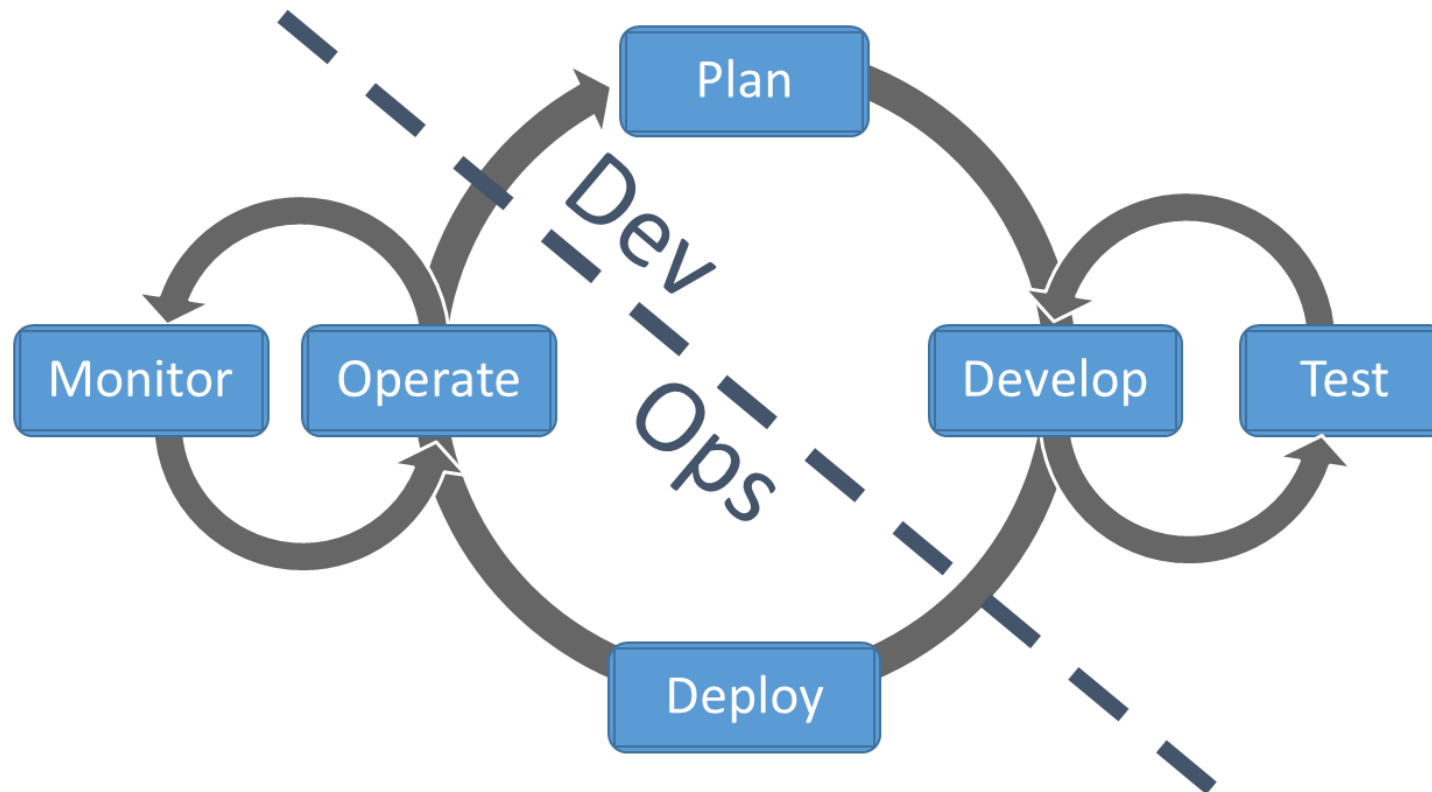
Outline

- SONATA overview and objectives
- SONATA architecture
 - Software development kit
 - MANO service platform
- SONATA MANO customization
- SONATA highlights
 - Infrastructure abstraction
 - Gatekeeper
 - Recursiveness
- SONATA and OSM
- Q & A

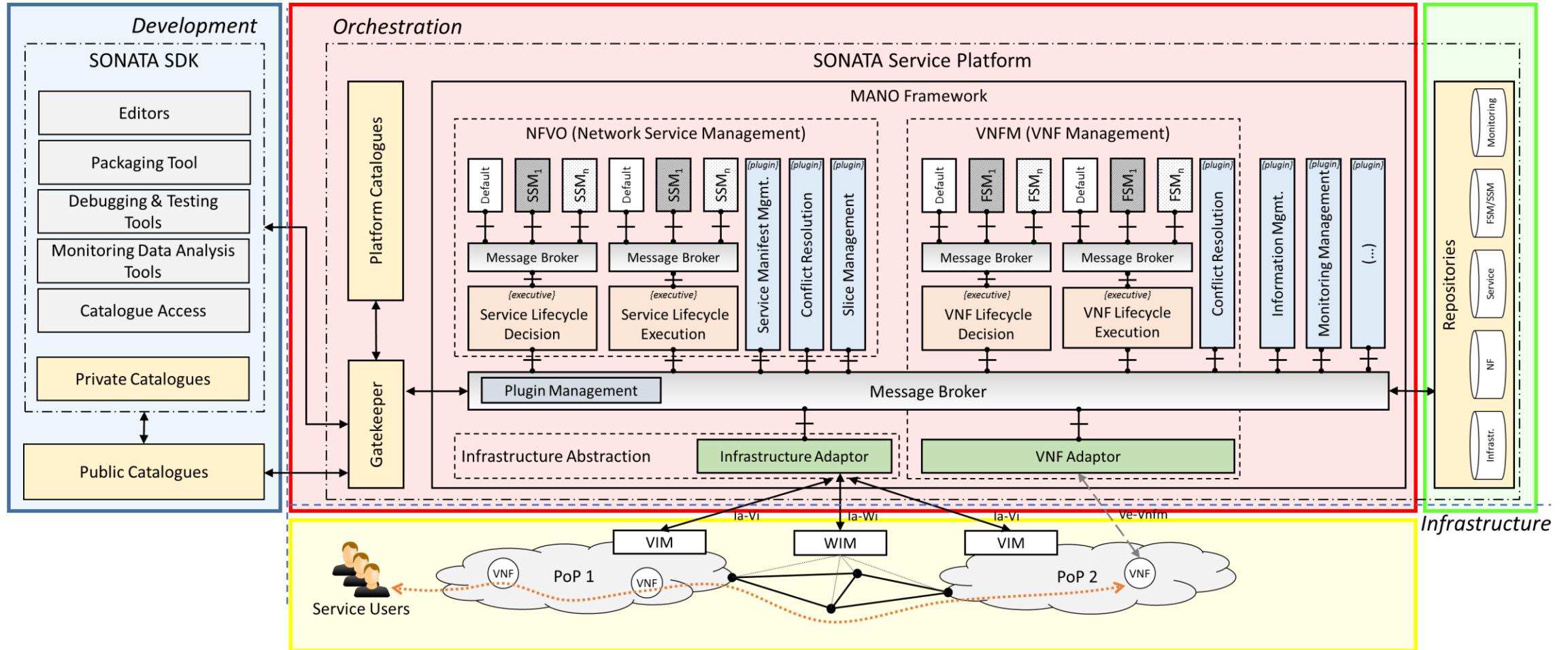


SONATA Overview

- SONATA overall goals
 - Continuous integration and deployment (CI/CD) of network services
 - Combined development and operations (DevOps) of networks services

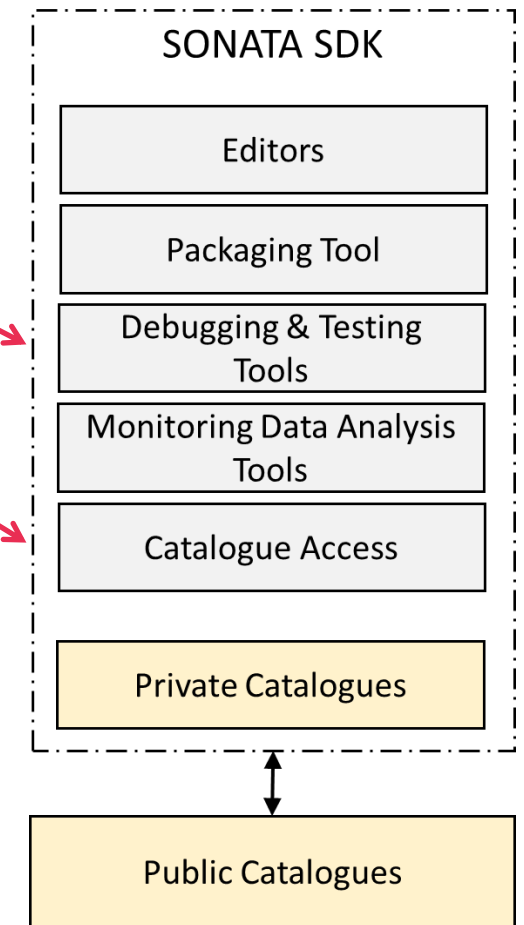


SONATA Architecture



SONATA Architecture (SDK)

- Collection of command line tools
 - Workspace management
 - Emulation, testing, and and debugging
 - Packaging
 - Integration with the SONATA Service Platform
- Command line tools became popular (again)
 - Easy to script and integrate in a CI/CD pipeline
 - Prominent examples
 - Docker
 - Web development, e.g. NodeJS, grunt, and gulp

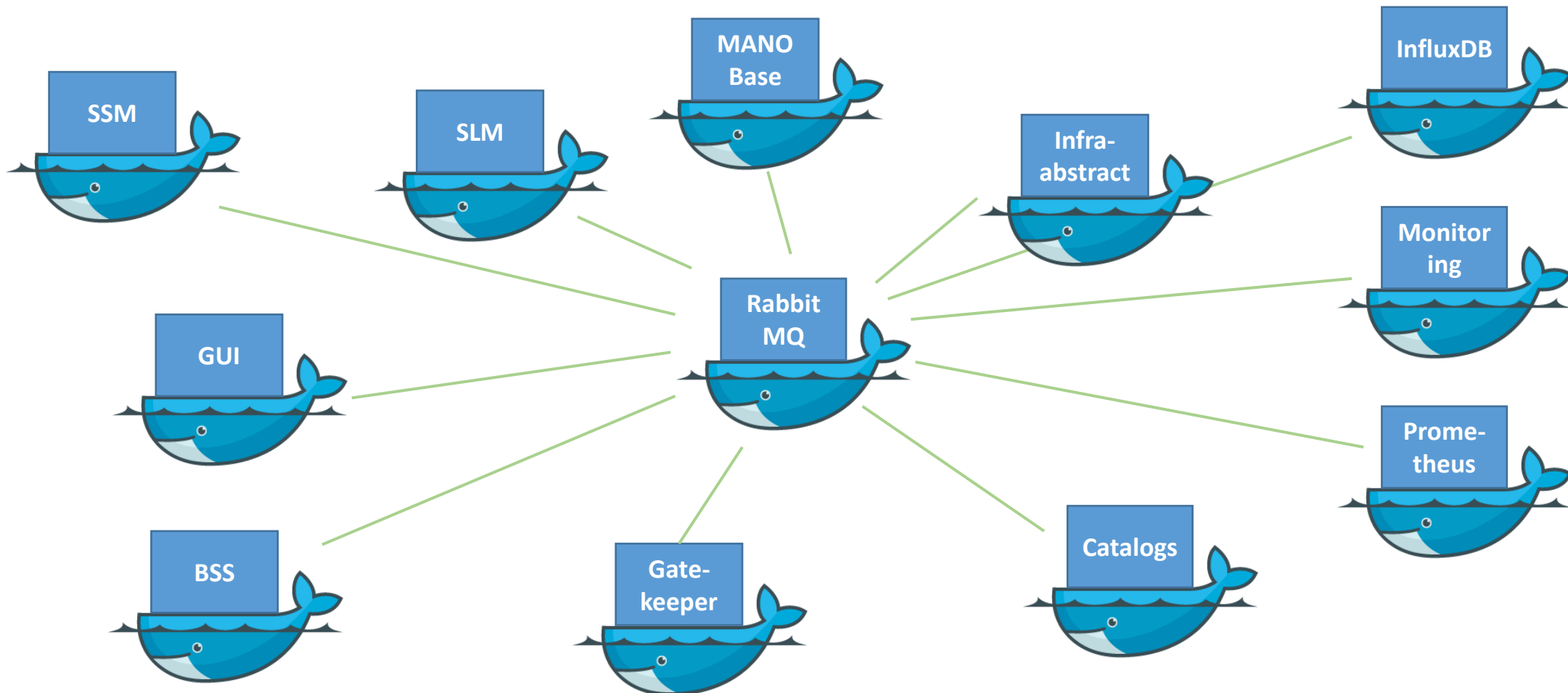


SONATA Architecture (Service Platform)

- Micro-service based architecture based on Docker
 - Each component runs in its own Docker container
 - Components communicate via a shared message bus
- Immediate benefits
 - Allows **independent development** of individual components
 - Easy to deploy, update, and manage
 - Easy to scale out
 - Easy to **test** as each **component** can be tested **individually**
 - Flexible as **components** can be **exchanged** easily
 - Extensible as **new components** can be added **without major changes**
 - Easy to integrate in test-platforms, like Jenkins

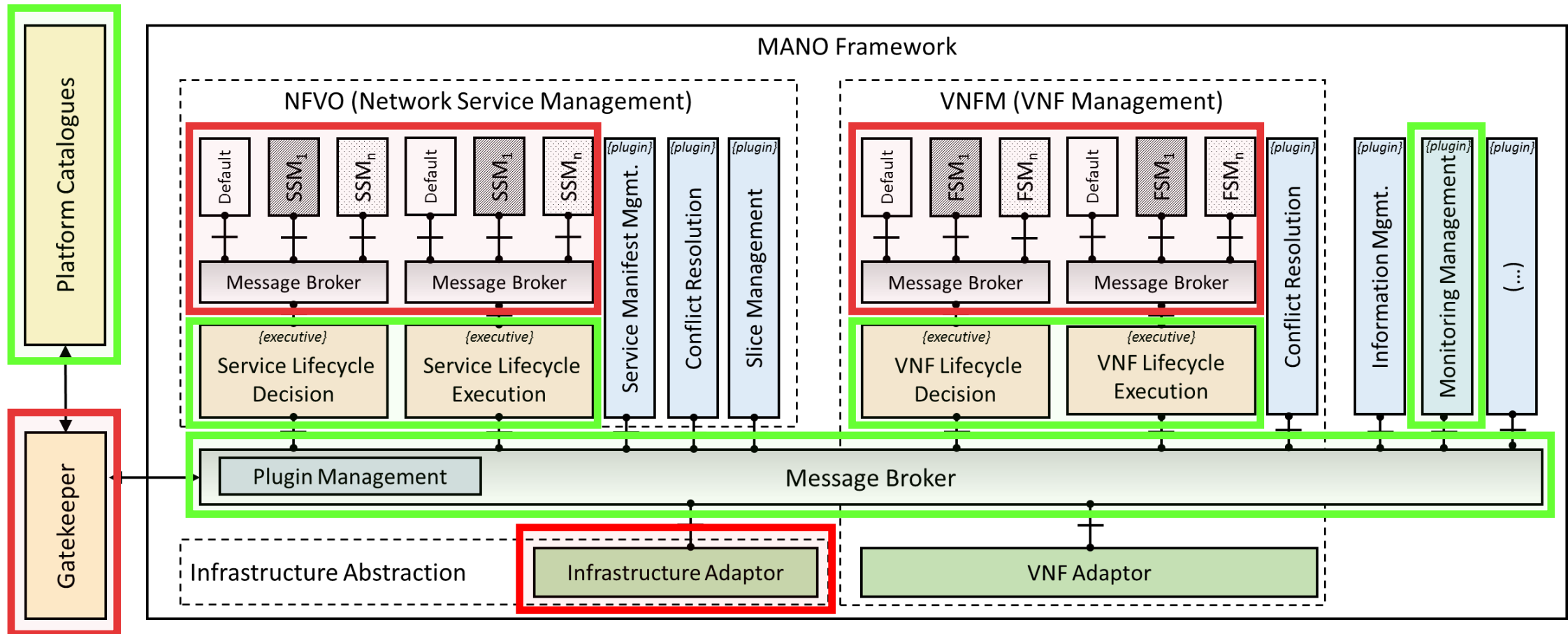
SONATA Architecture (Service Platform)

- Micro-service based architecture based on Docker



SONATA Architecture (Service Platform)

- Platform highlights



SONATA Relations to ETSI Interfaces

- SONATA aim at beeing fully ETSI compliant
- The SONATA-internal interfaces can be mapped (to a large extend) to ETSI interfaces

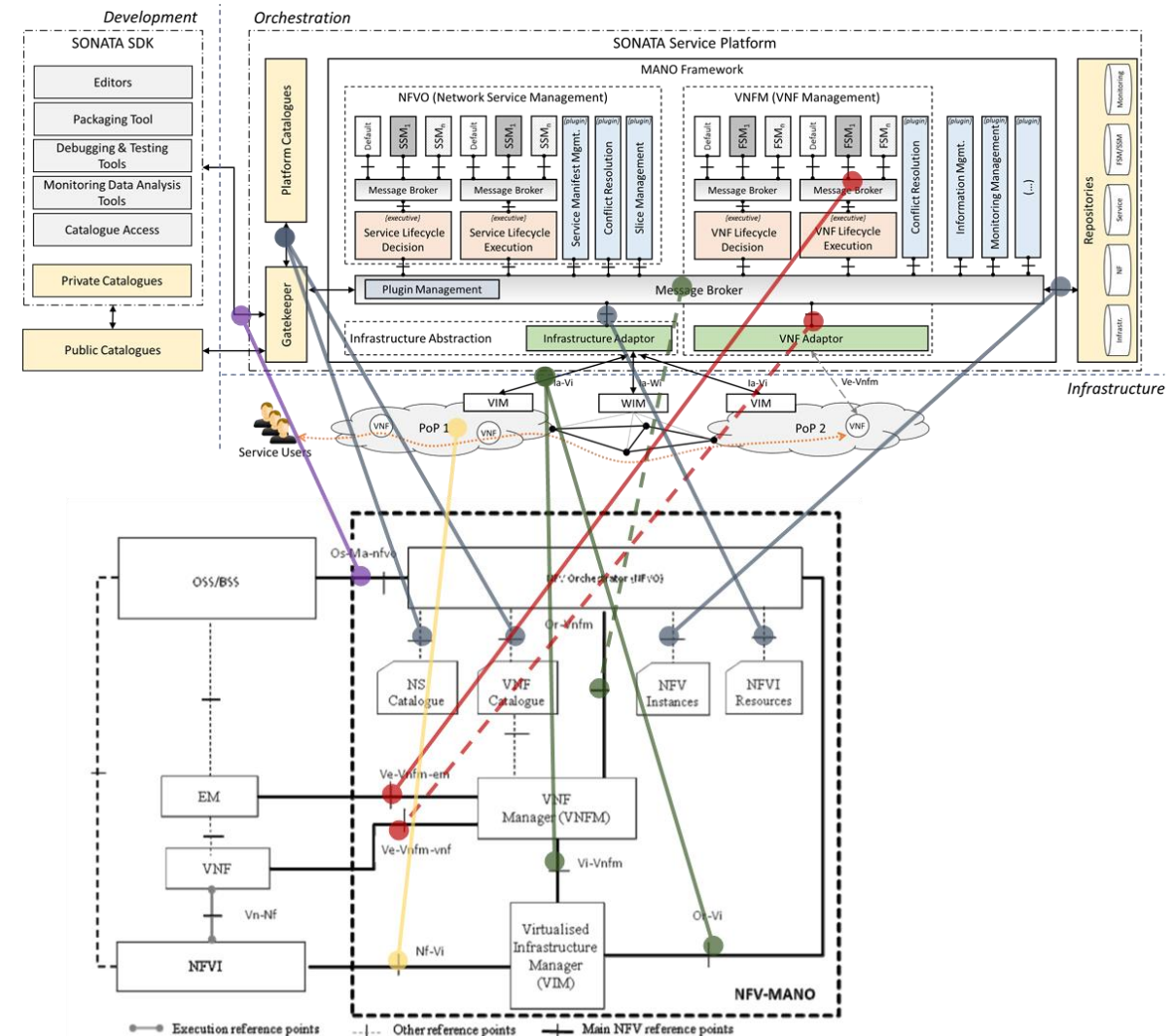
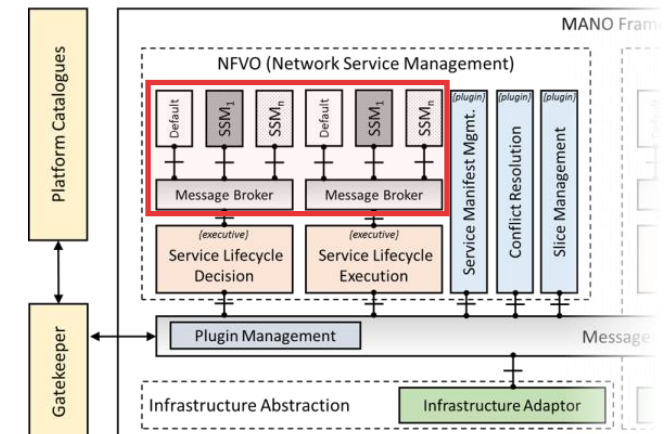
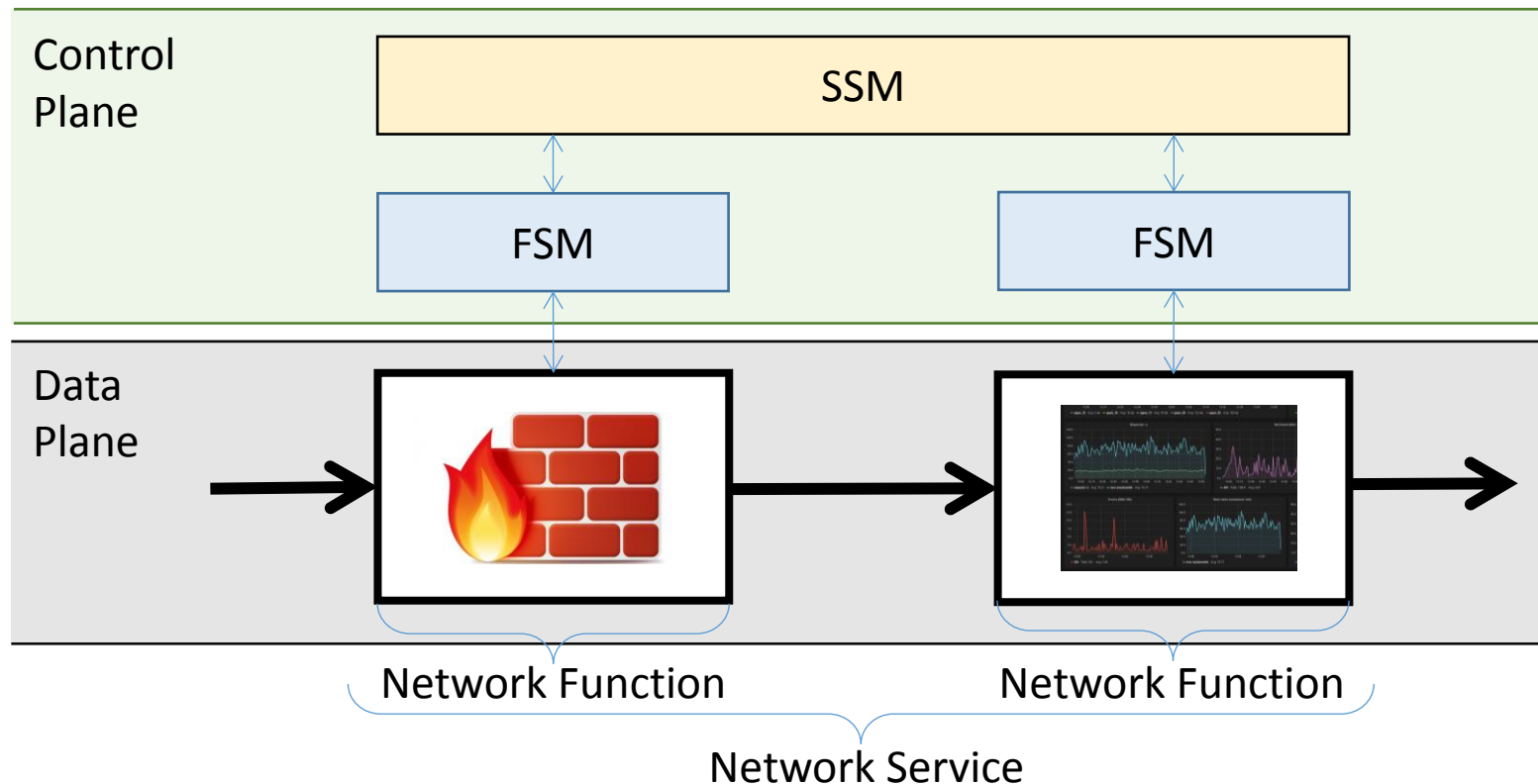


Figure 5.1: The NFV-MANO architectural framework with reference points

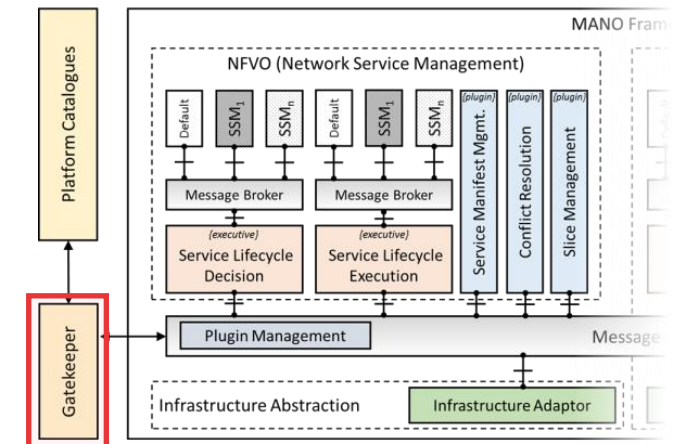
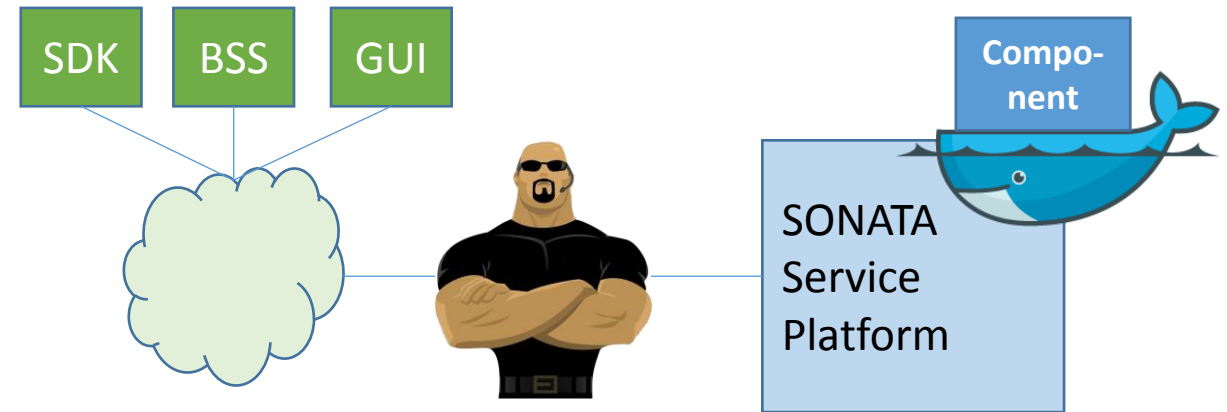
SONATA MANO customization with plugins

- The F/SSM concept for platform + service customization
 - Function Specific Managers (FSM)
 - Service Specific Managers (SSM)



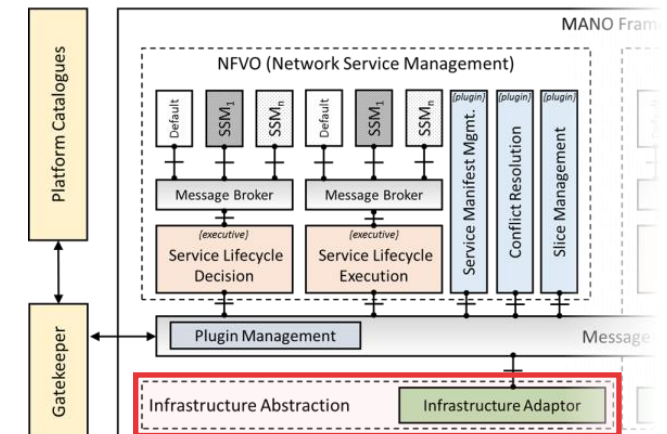
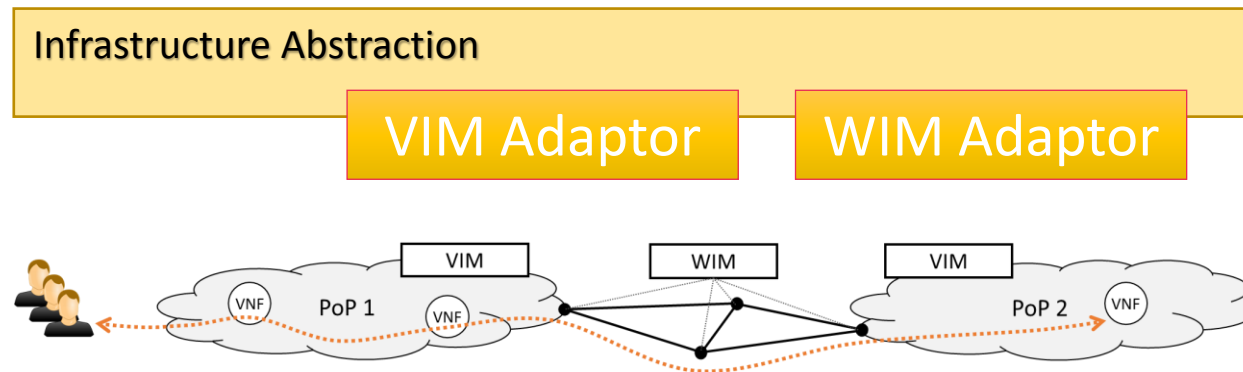
SONATA Gatekeeper

- User Management
 - Authentication & authorization
- Package Management
 - Onboarding packages
- Life-cycle management
 - Deployment
 - Instantiation
 - Removal
- General (secured) interfaces
 - Graphical user interface
 - RESTful service interface



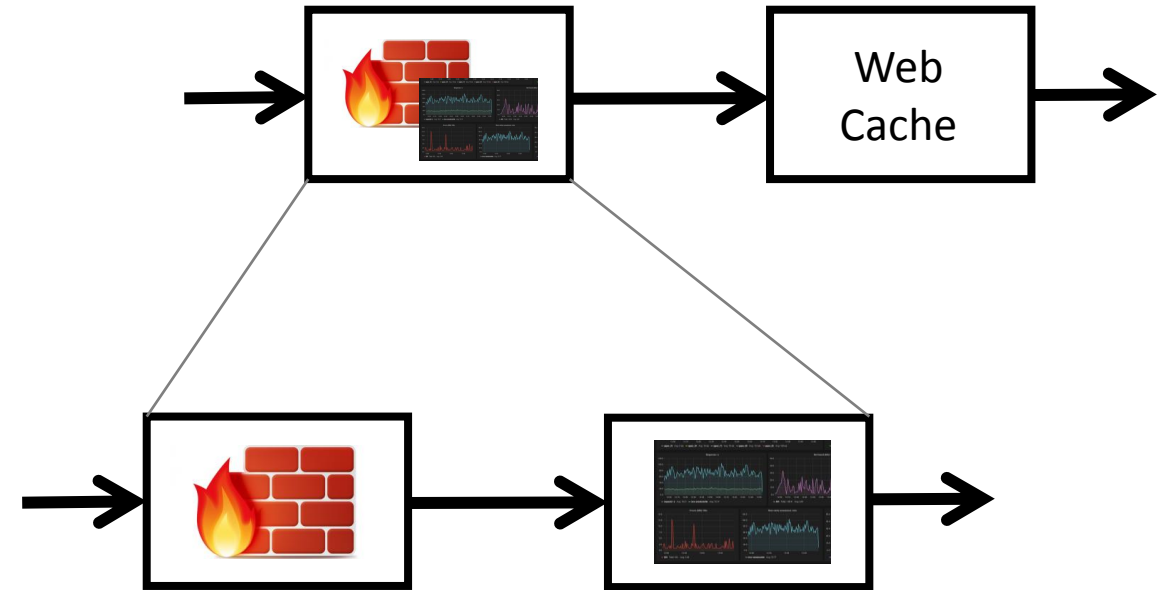
Infrastructure Adaptor

- Support multi-site and multi-VIM installations
 - Multiple VIMs at different PoPs connected by a WAN
 - **VIM** implementation **agnostic** – support different VIM implementations
- Pluggable architecture (also for VIMs)
 - Introduce an abstraction layer that translates SONATA messages to VIM messages



SONATA Recursiveness

- Various ways of recursiveness in SONATA
 - Recursive descriptors
 - Recursive platforms
- Recursive descriptors
 - Allows to include Network Services as VNFs to build an even richer Network Service
- Recursive platforms
 - Run a SONATA SP as an infrastructure for another SONATA SP



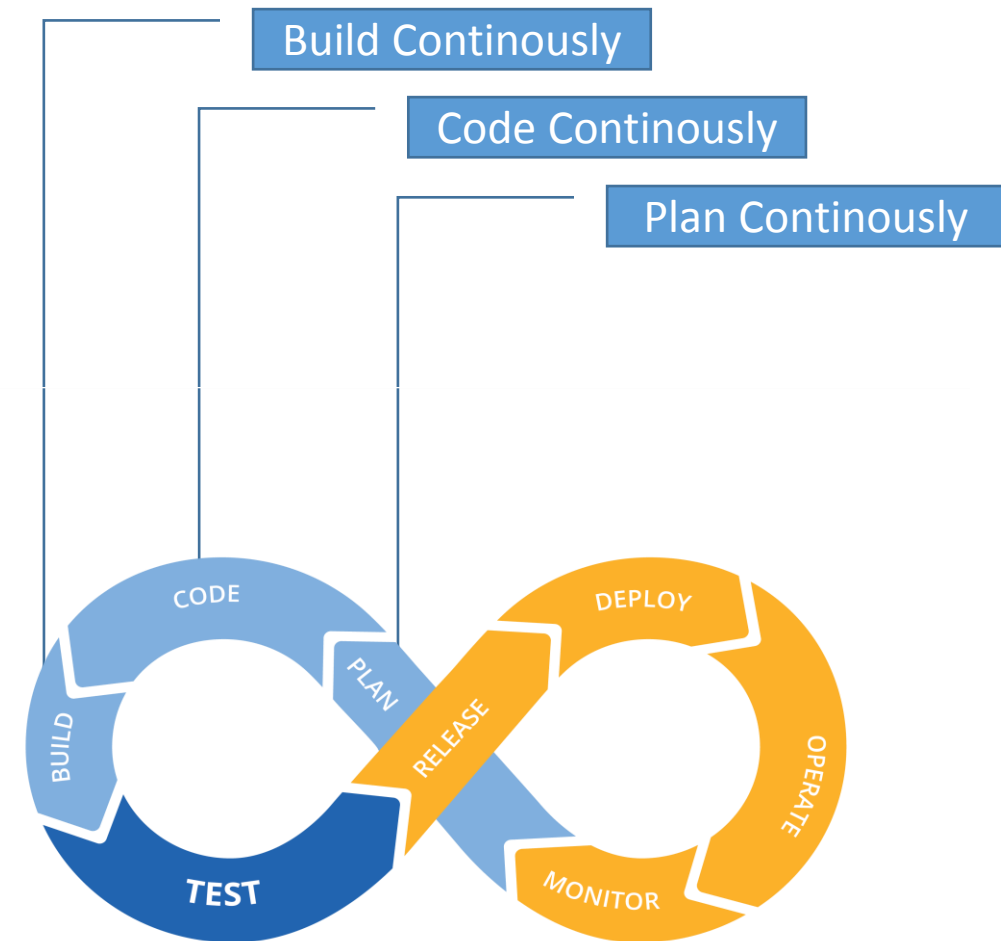
SONATA and OSM

- SONATA and OSM are seeking a close collaboration between both project

Feature	SONATA	OSM
Open-Source (Apache 2 license)	YES	YES
One-click installation	YES	YES
Extensive documentation	YES	YES
Docker-based service platform	YES	YES
Comprehensive descriptors	YES	YES
Packages and package management	YES	YES
SDK and SP emulator	YES	Not Yet

Summary

- DevOps and CI/CD for network services
- SONATA architecture
 - Micro-service, containerized, pluggable, Service Platform
 - Re-usable artifacts and descriptor recursiveness
- SONATA highlights
- SONATA and OSM
- SONATA is available at GitHub
 - <https://github.com/sonata-nfv>





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Thank you!

References

- D2.1 – Use Cases and Requirements, SONATA Deliverable, Oct. 2015
 - <http://www.sonata-nfv.eu/content/d21-use-cases-and-requirements>
- D2.2 – Architecture Design, SONATA Deliverable, Dec. 2015
 - <http://www.sonata-nfv.eu/content/d22-architecture-design-0>
- SONATA web page
 - <http://www.sonata-nfv.eu>
- SONATA Software
 - <https://github.com/sonata-nfv>

Acknowledgements

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