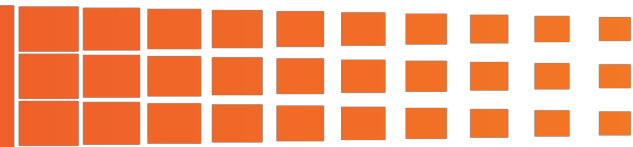
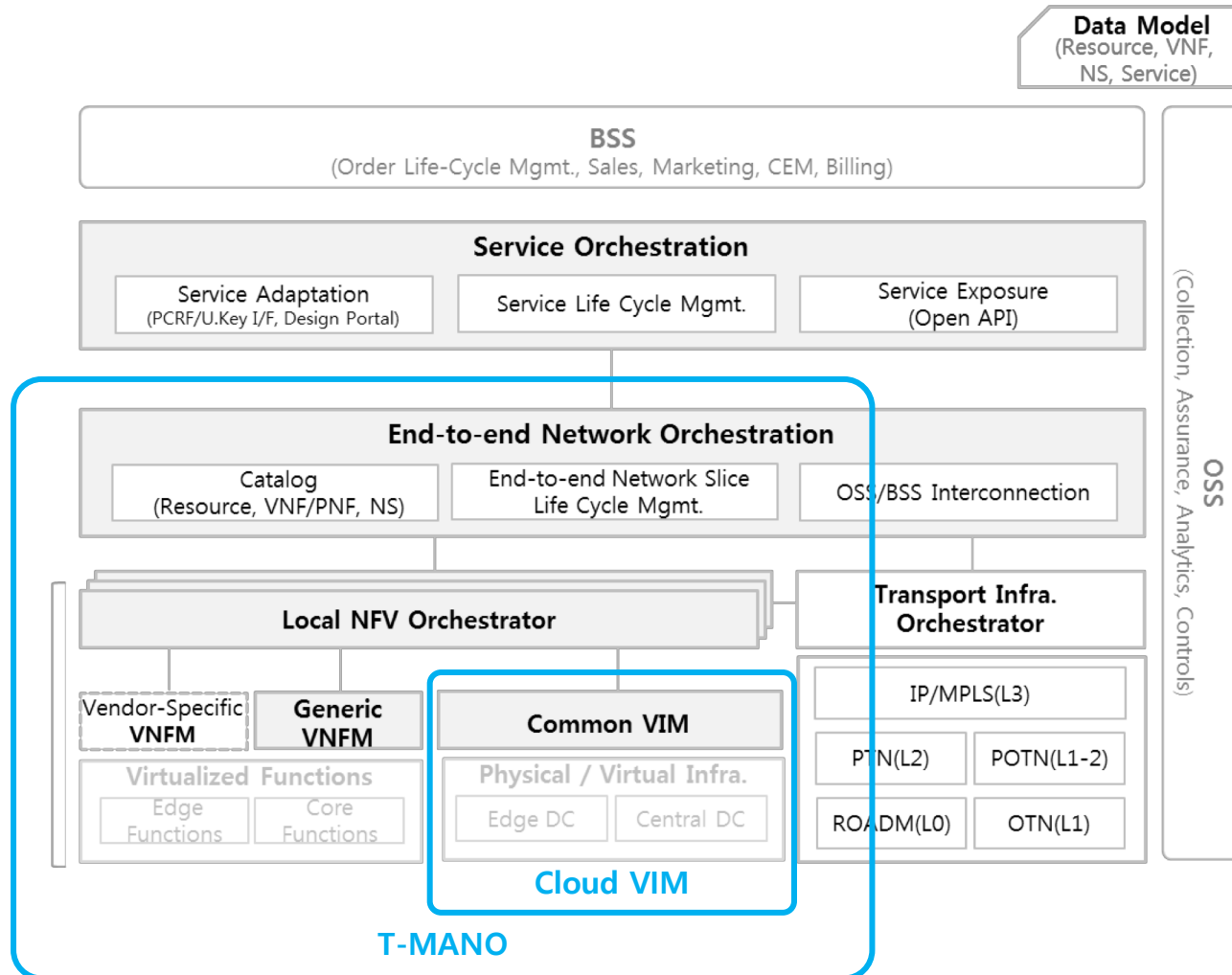


Virtualizing 5G Infrastructure using Cloud VIM

Sangho Shin

SK Telecom

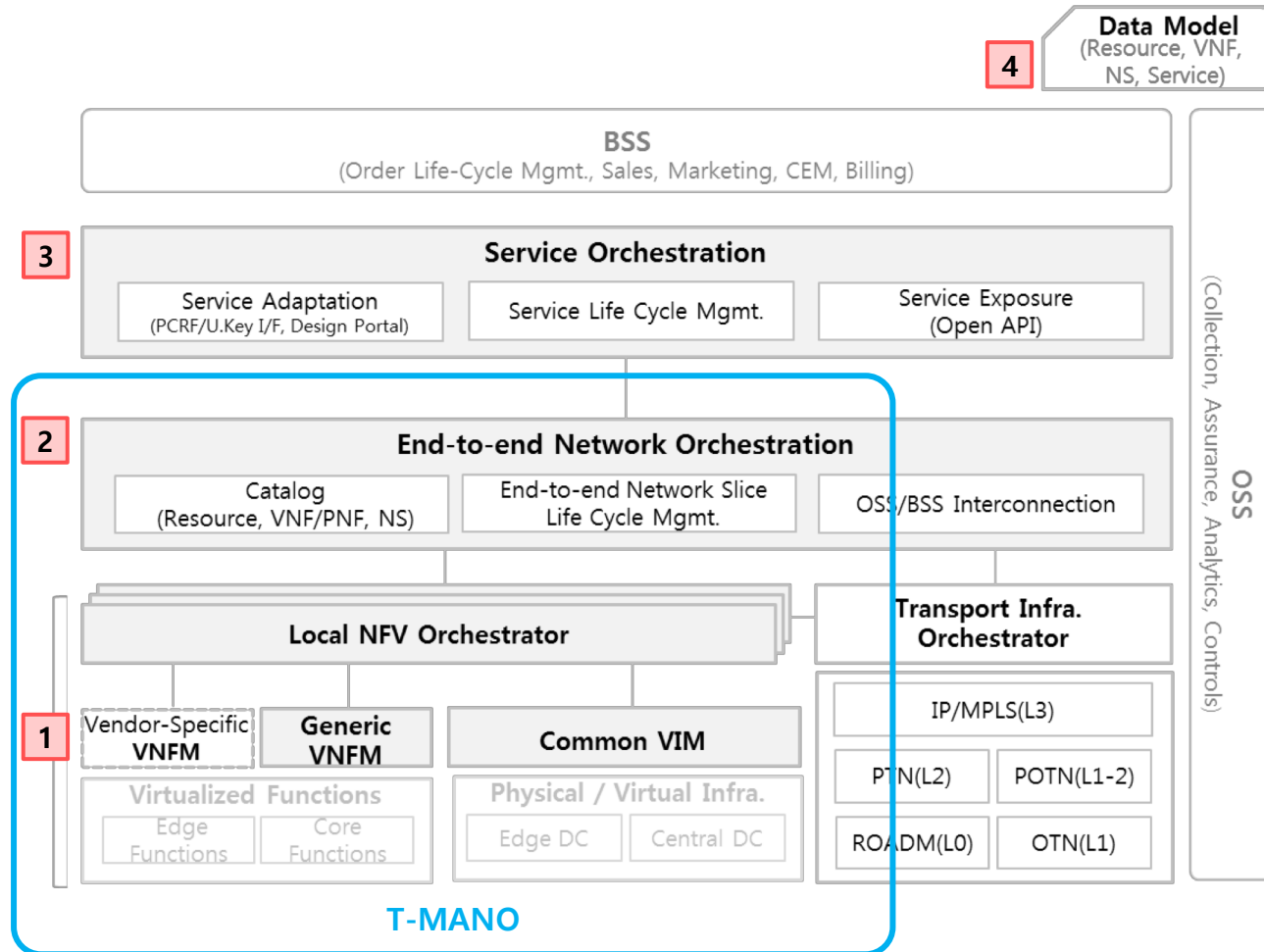




T-MANO Cloud VIM

T-MANO

- In lined with SK Telecom’s unified orchestration strategy, T-MANO provides control and management of the entire life-cycle of network infrastructure resources, functions, end-to-end network



1 Standardized NFV MANO Framework

- Local NFV Orchestrator
- Generic VNFM
- Common VIM

2 End-to-end Network Orchestration

- Multi-domain(RAN, Transport, Core Network) network slice design & LCM
- Support multi-vendor VNF with open API

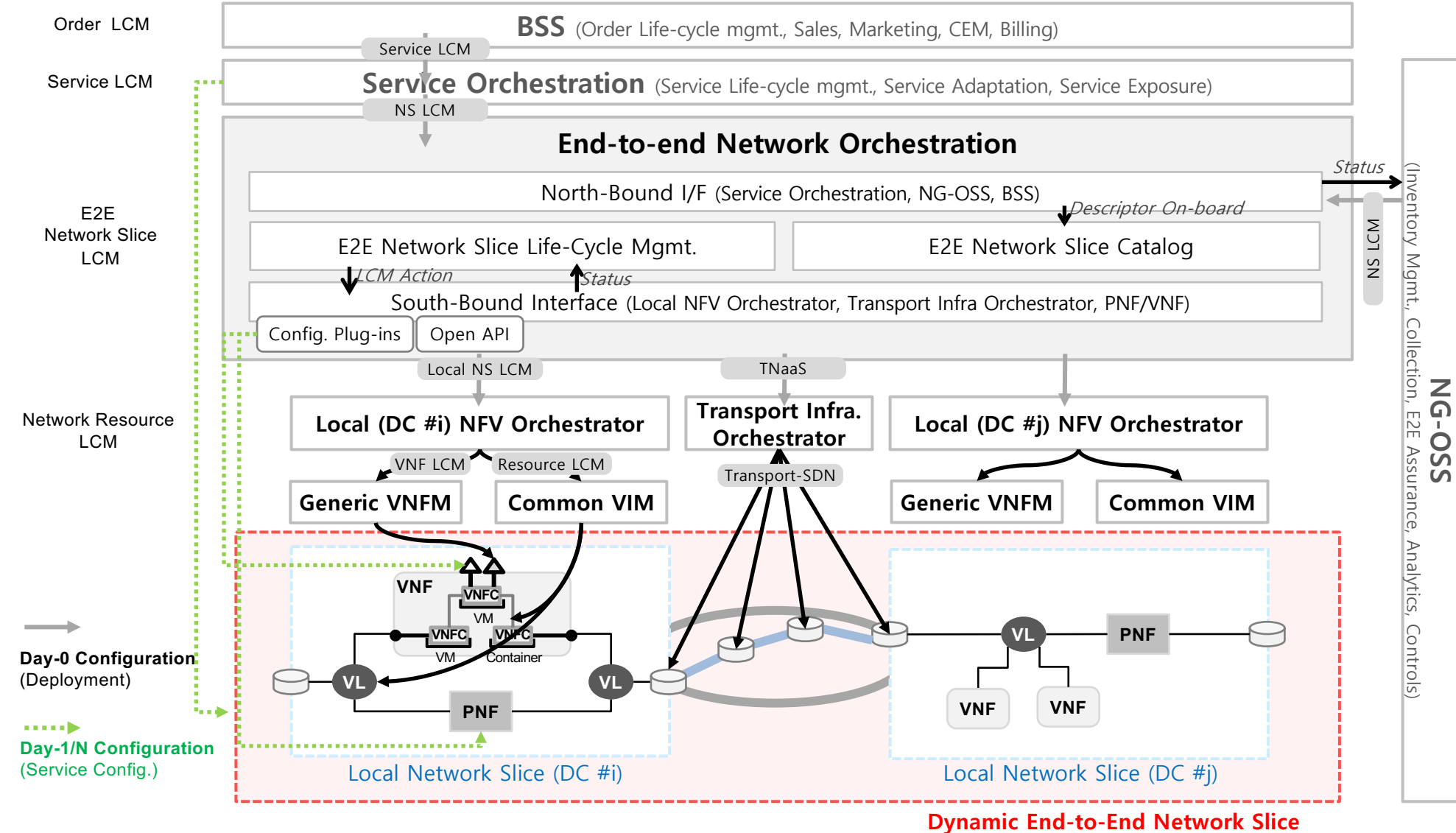
3 Service Orchestration

- Management of dynamic network segment optimized for requirements & policies
- Service chaining (SFC, FMSS)
- Policy server, BSS interworking

4 Standard Data model

- Multi-vendor, operator Interoperability
- Orchestration, configuration automation

T-MANO in Action: Dynamic End-to-End Network Slicing



LCM: Life-Cycle Management
 VL: Virtual Link

NS: Network Slice
 PNF: Physical Network Function (Non-virtualized Legacy Function)

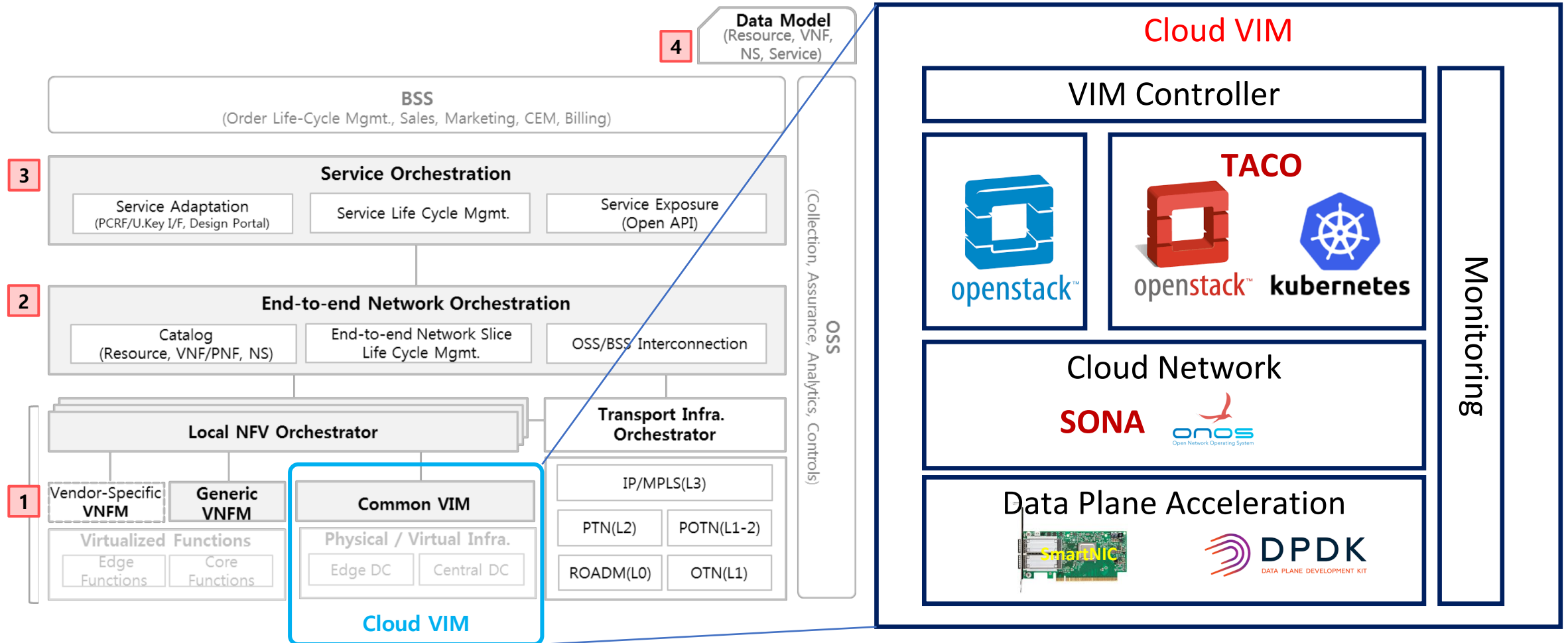
VNF: Virtualized Network Function
 VNF-C: VNF Component
 DC: Datacenter

VIM: Virtualized Infra Manager
 MANO: Mgmt. and Orchestration

Cloud VIM

Cloud features: Virtual Networks, Containers, CI/CD

Carrier grade performance: Data Plane Acceleration (Smart NIC, DPDK, SR-IOV)



Cloud VIM

Virtual Networks

- SONA: SDN based Virtual Network Solution

Containers

- TACO: All Containerized OpenStack
- SONA: supports container networks

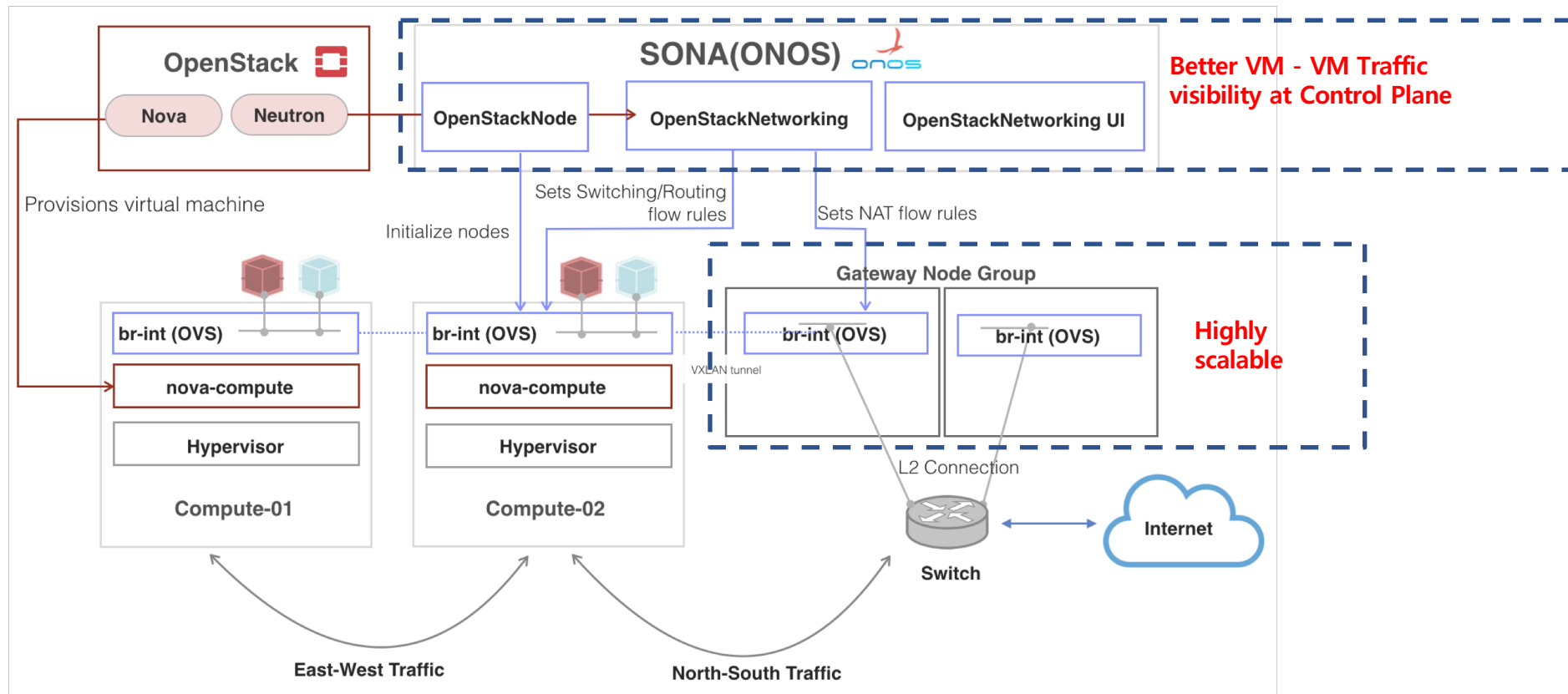
CI/CD

- TACO/SONA CI/CD

Data Plane Acceleration

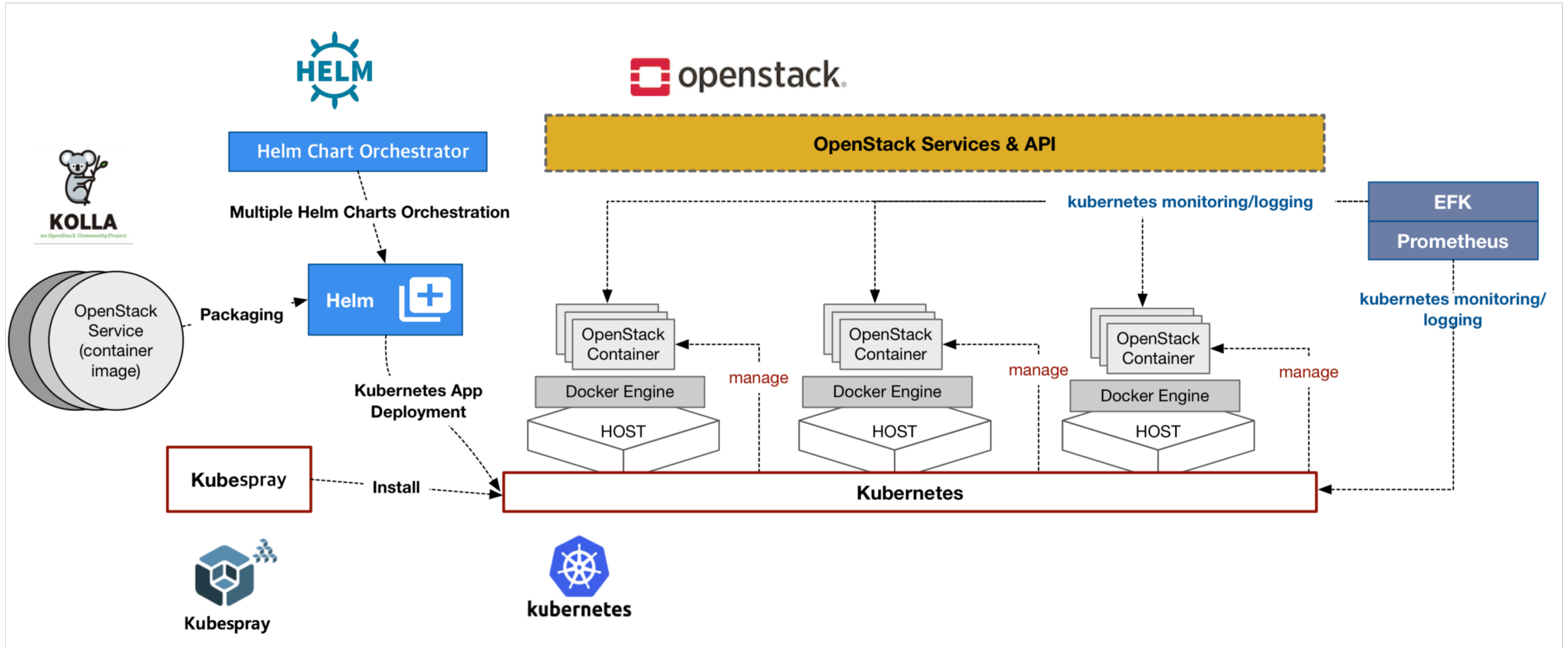
- Smart NIC, SR-IOV, DPDK

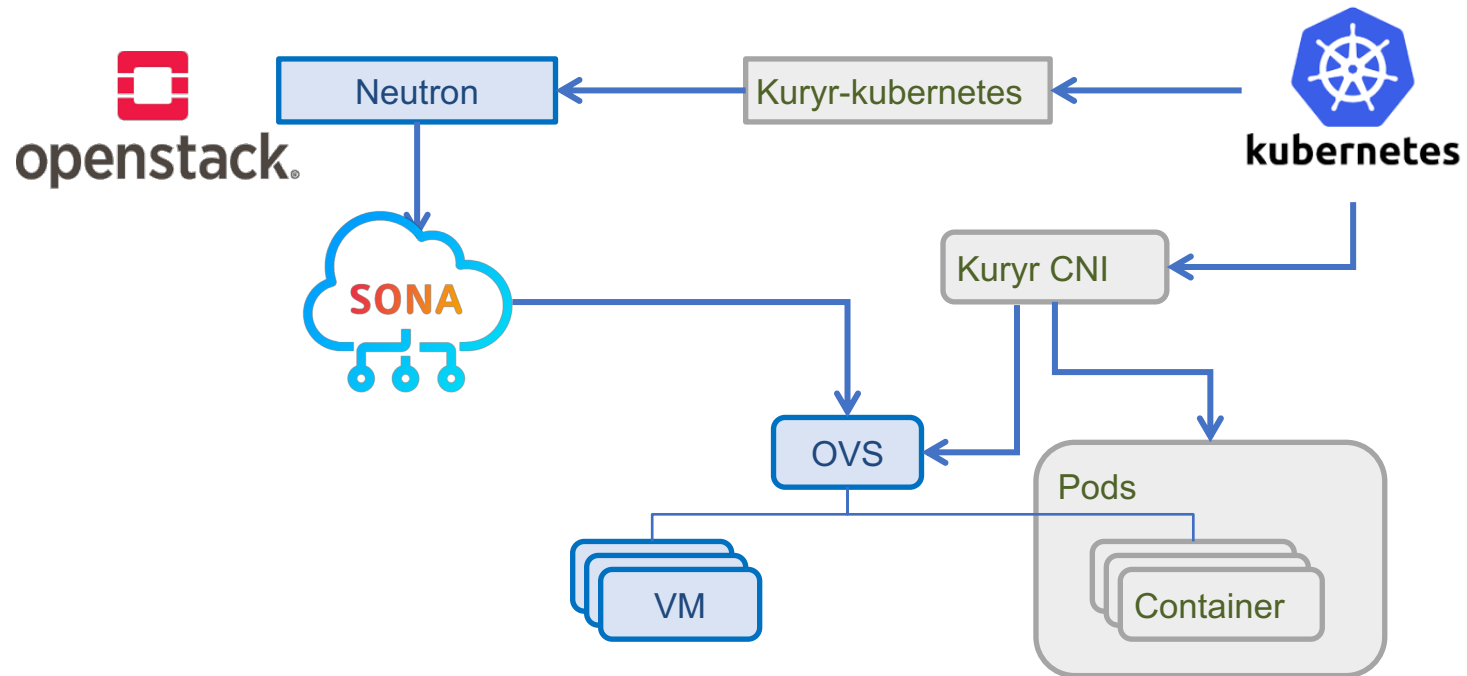
- ONOS based **Virtual Network Management** solution
- **Multi-Tenancy support with VxLAN and VLAN**
- **Scalable Gateway, Fully Compatible with OpenStack**

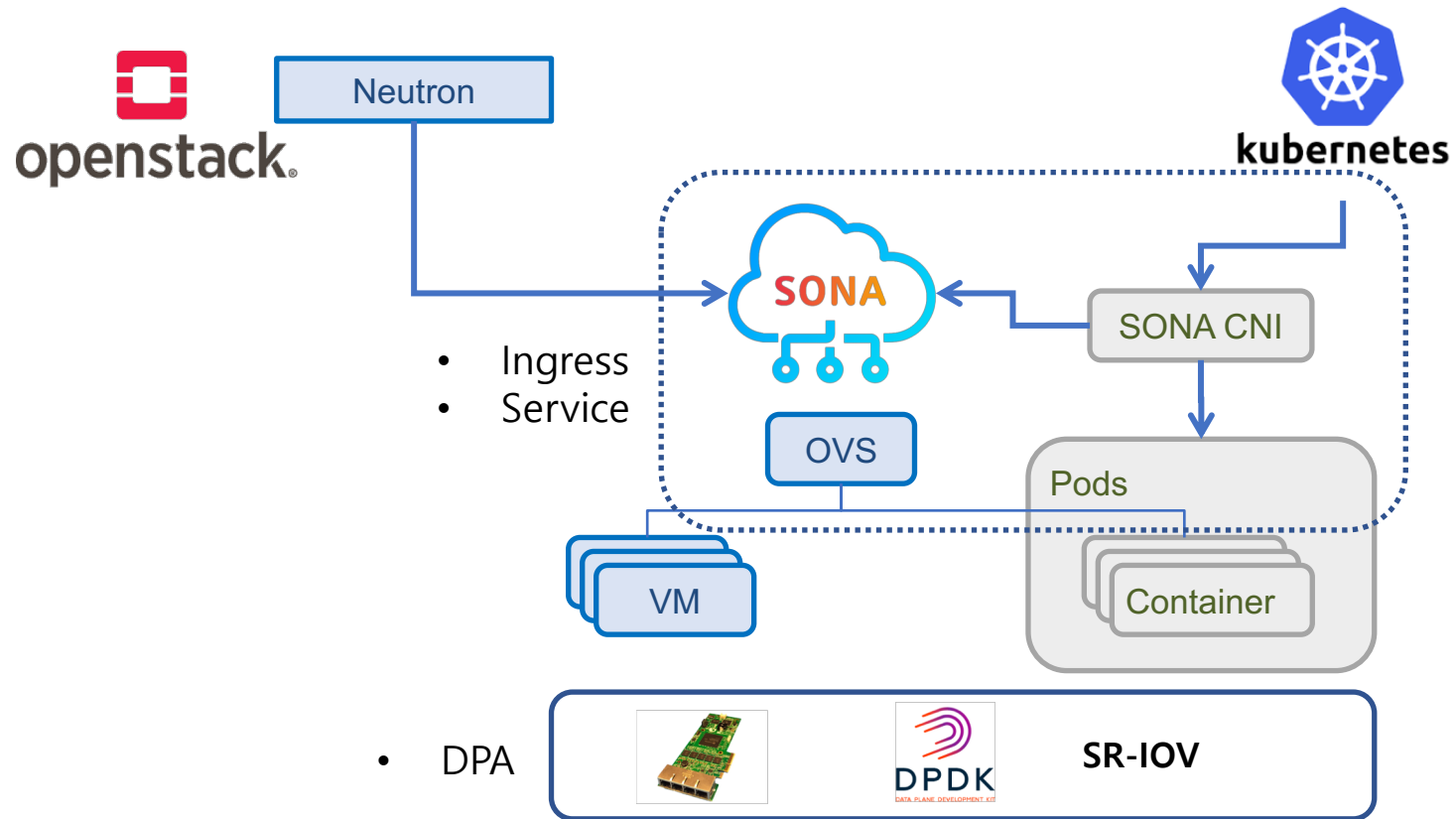




- Developed by **SK Telecom**, leveraging **Container and Kubernetes**
- **Community Version with Continuous Integration / Delivery System**





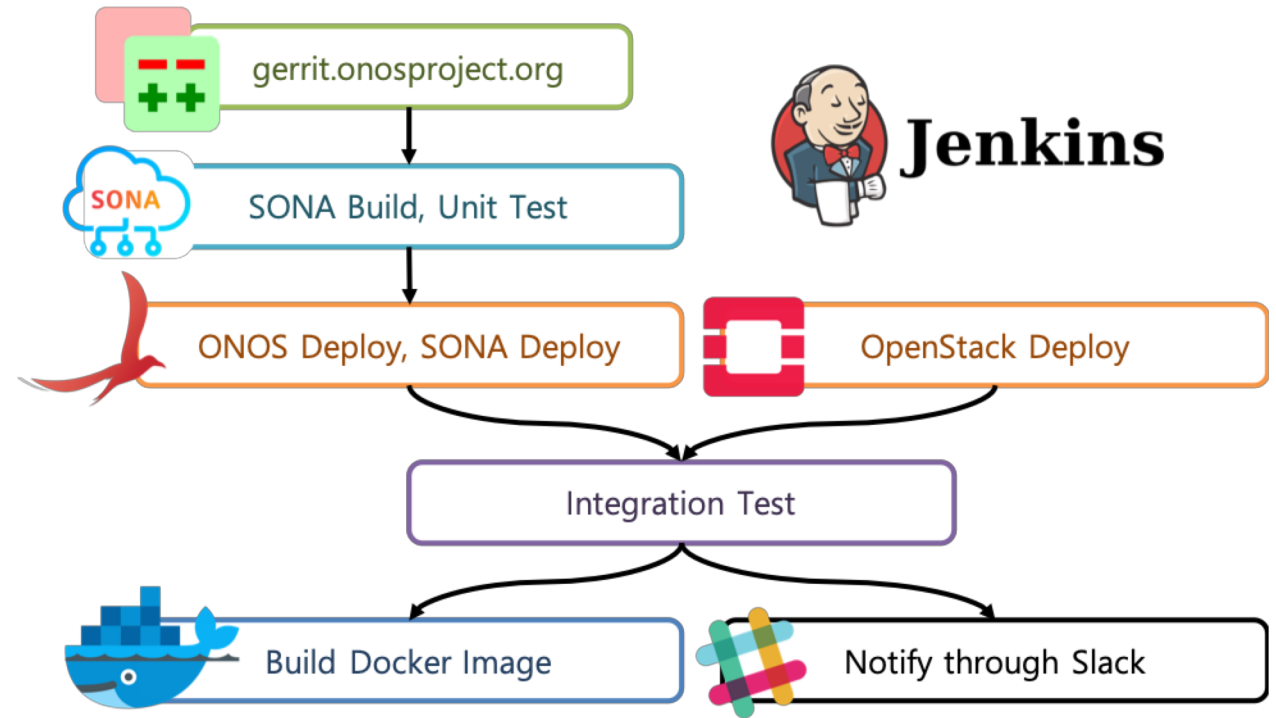


- **Continuous Integration (CI)**

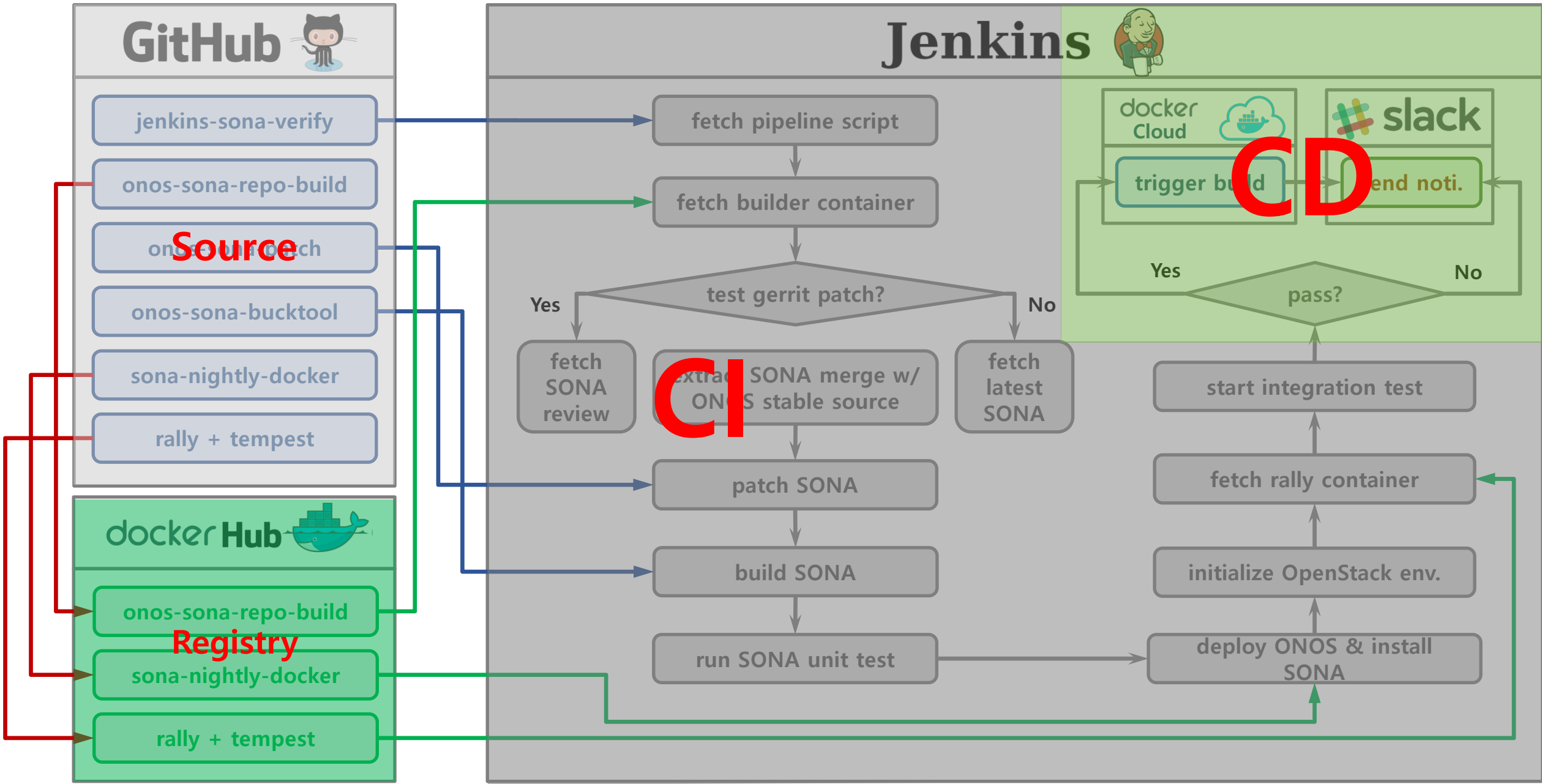
- Full ONOS build and unit tests
- Full static code analysis
- SONA build and unit tests
- Integration test
 - OpenStack API invocation test
 - OpenStack scenario test
- ONOS/SONA failure/recovery test

- **Continuous Delivery (CD)**

- Trigger docker image build webhook
- Docker image with pre-built SONA



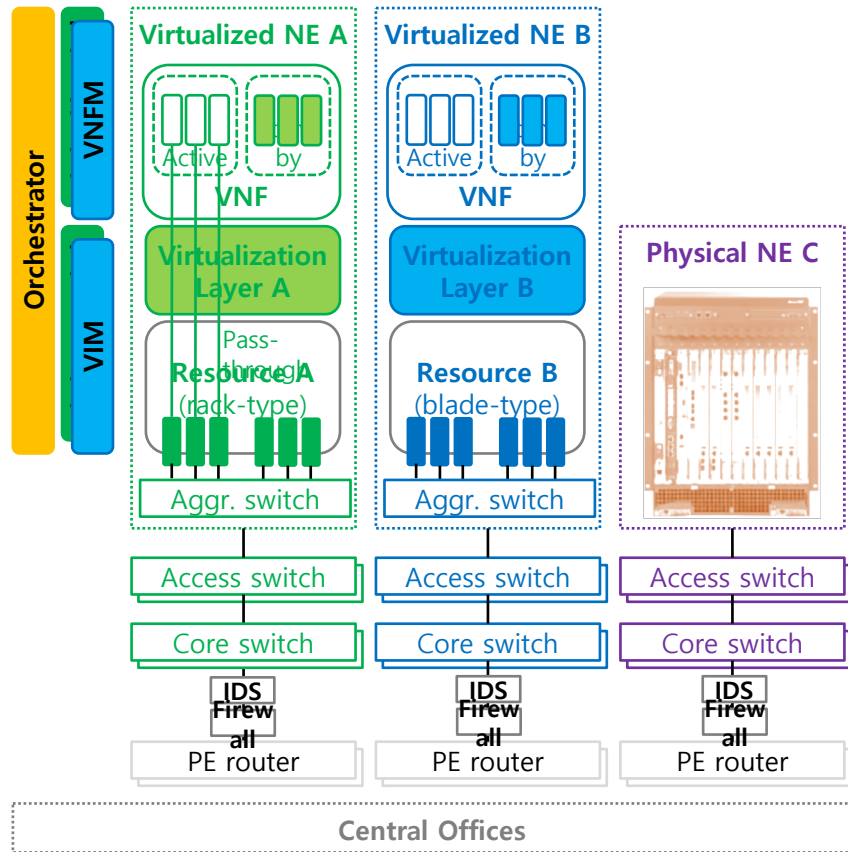
```
$ docker pull opensona/onos-sona-nightly-docker
```



Smart NIC, OVS DPDK, SR-IOV

Please check out the detail in the next talk from Daniel,
who is SKT's DPA expert.

Conclusion



Virtualizing 5G Infrastructure using Cloud VIM

