NFV-OSM Cooperation

Andy Reid (BT)

OSM Vice-Chair, NFV NOC Vice-Chair
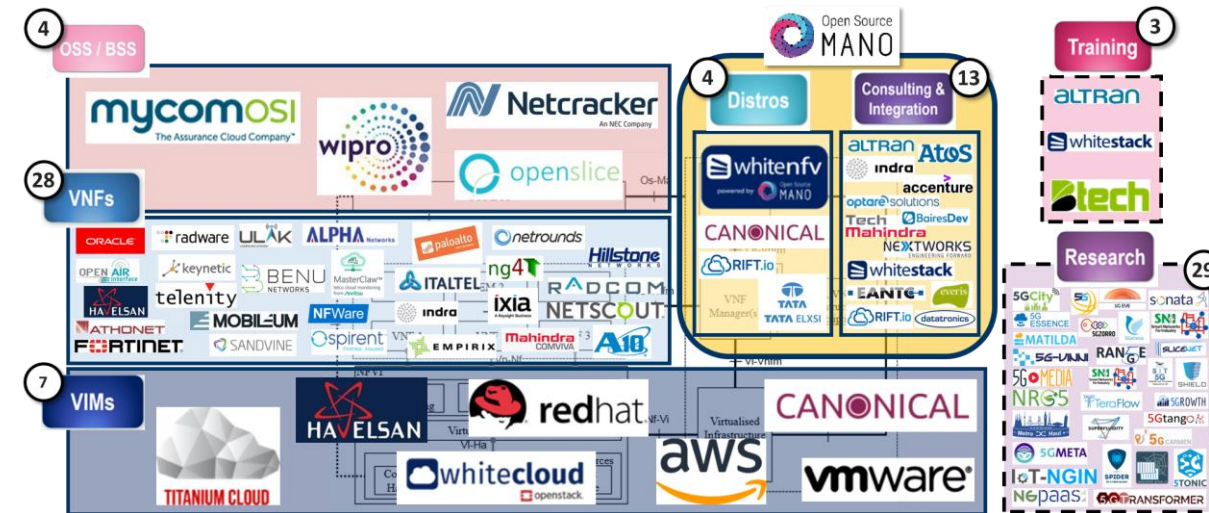
07/03/2023

ETSI OSM is a LARGE AND DIVERSE with 152 members

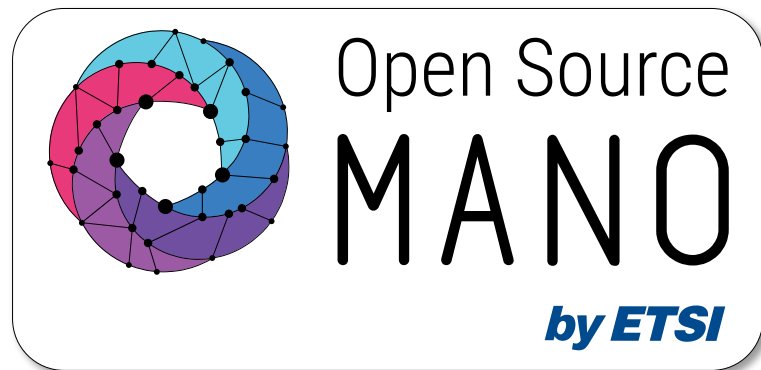- **15 Global Service Providers**
- **Leading IT/Cloud players**
- **VNF providers**

... with a significant number of commercial offers related to OSM ("OSM Ecosystem")

https://osm.etsi.org/wikipub/index.php/OSM_Ecosystem

Strong relationship with research projects

https://osm.etsi.org/wikipub/index.php/Research

OSM has a mature set of features following fourteen releases…

Cadence of OSM releases
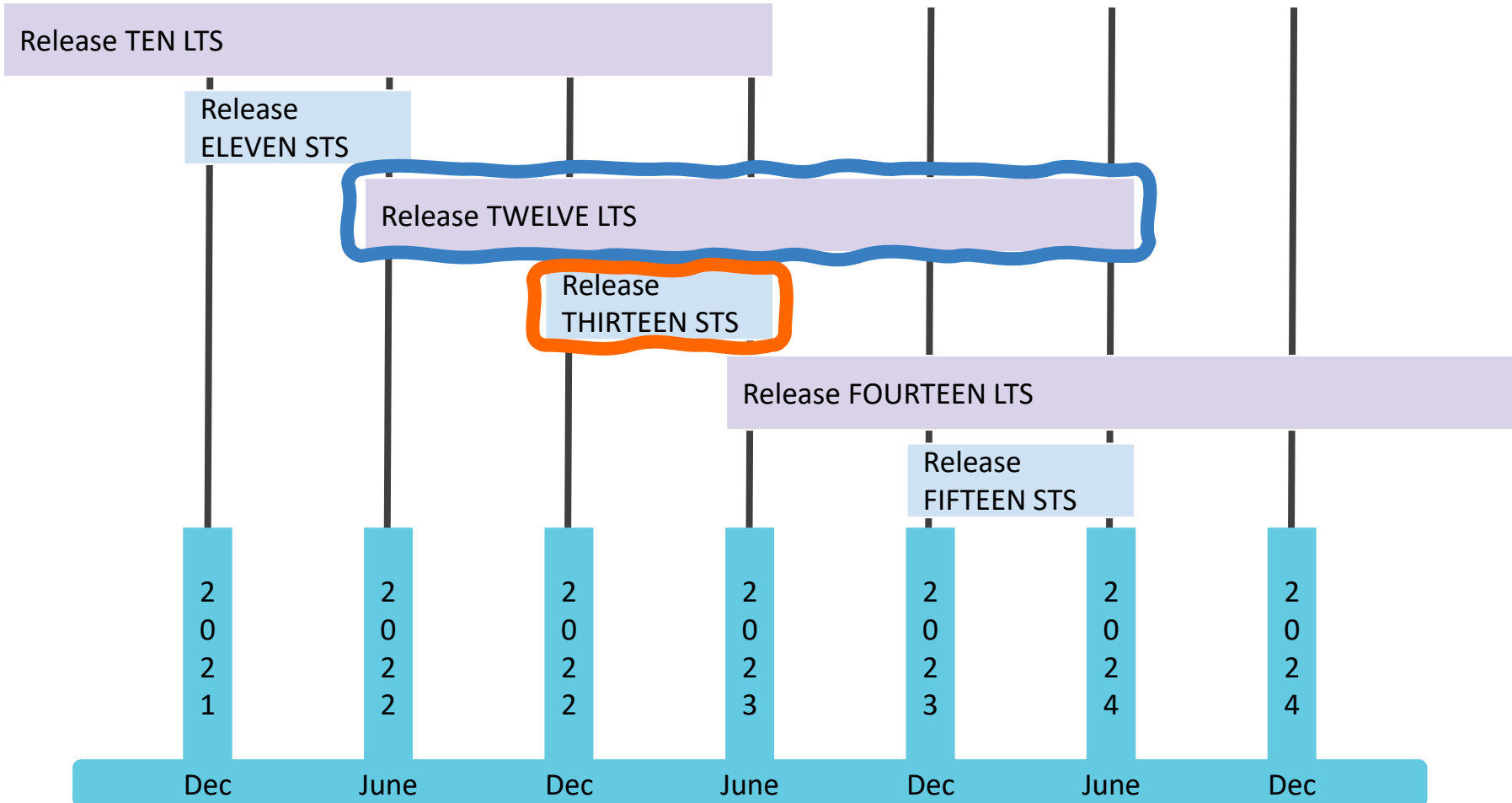
LTS Releases (Long Term Support)	STS Releases (Short Term Support)
24 months community support	6 months community support
Oriented to production	Oriented to innovation & development
Focus on stability	Focus on innovation & agility
Community grants upgrade between LTS's	Upgrade on a best effort basis

Release TEN LTS

Release ELEVEN STS

Release TWELVE LTS

Release THIRTEEN STS

Release FOURTEEN LTS

Release FIFTEEN STS

2021 Dec — 2022 June — 2022 Dec — 2023 June — 2023 Dec — 2024 June — 2024 Dec

Programme of Hackfests, Webinars, and Ecosystem days

MAGMA EPC DEMO (2020)

https://osm.etsi.org/gitlab/vnf-onboarding/osm-packages/tree/master/magma
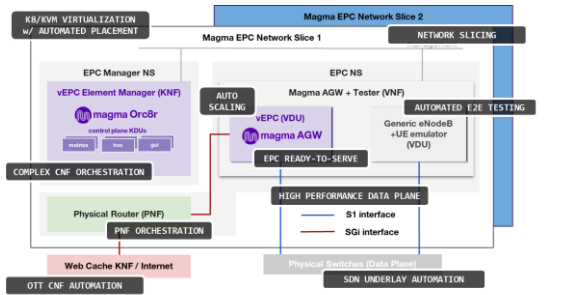
OSM#11 Hackfest

11 teams onboarding 8 NFs in just one week!

Asterisk
freeRADIUS
PowerDNS
OPC UA
NetNumber

Release TEN Webinar
Edge orchestration with OSM

OSM-MR#11 Hackfest

OPEN AIR INTERFACE
5G Core Onboarding Challenge
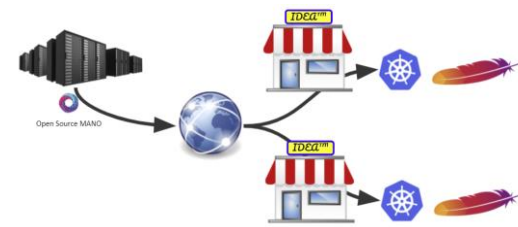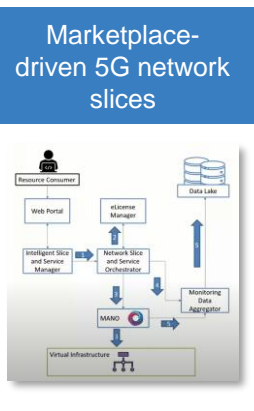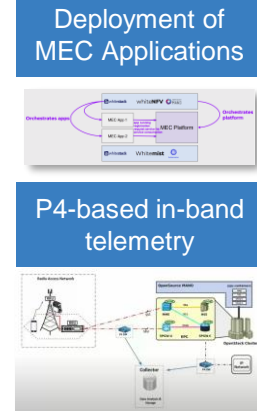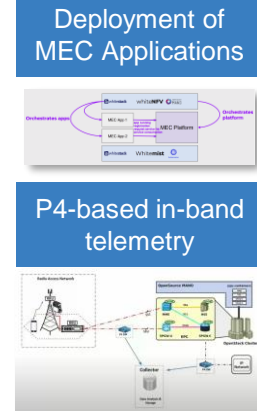
OSM Ecosystem Day 2022

Marketplace-driven 5G network slices
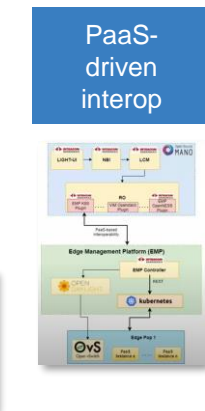
Deployment of MEC Applications

P4-based in-band telemetry

PaaS-driven interop

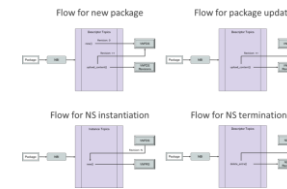**Release TWELVE Webinar**

Healing & scaling in massive sports events

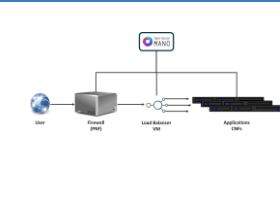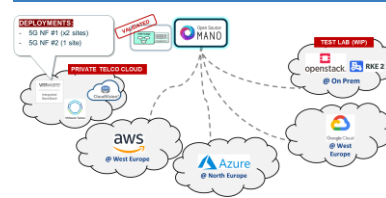Live upgrade of a NF
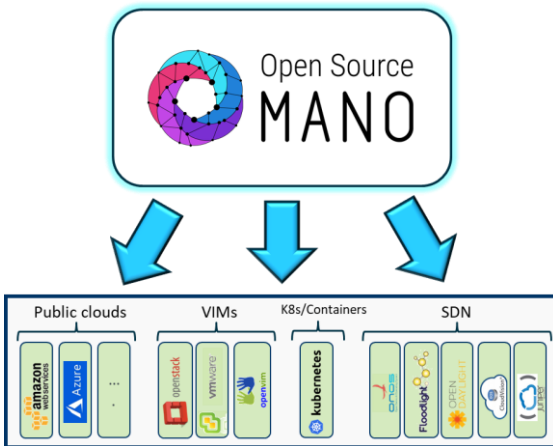
Release ELEVEN Webinar
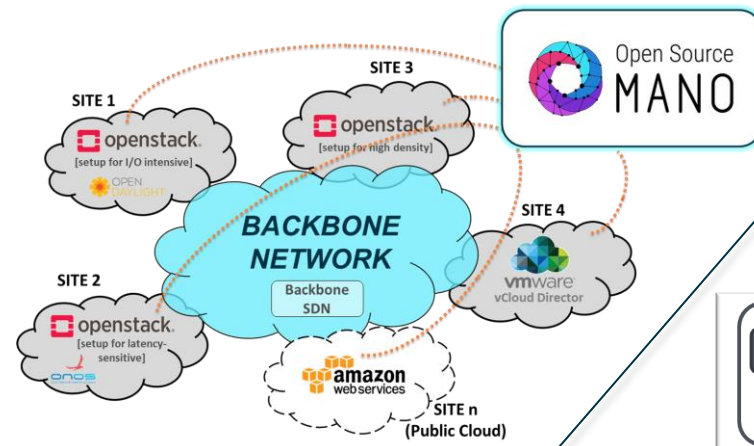
Resolution of inter-NF relations

Multi-Cloud Deployments

OSM orchestrates …

… on different types of infrastructure and
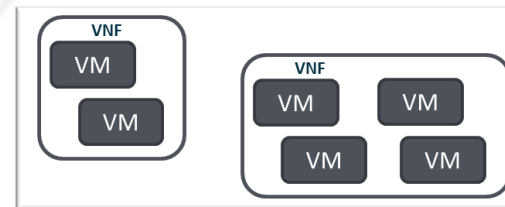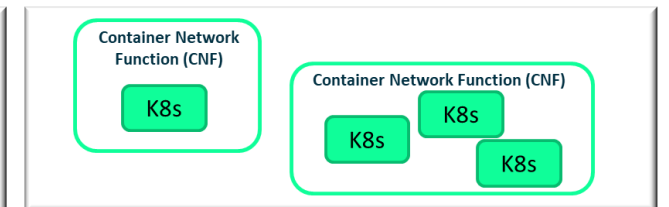across different locations…

MULTI-VIM & MULTI-SDN

MULTI-SITE

… with NFs composed of **VMs,
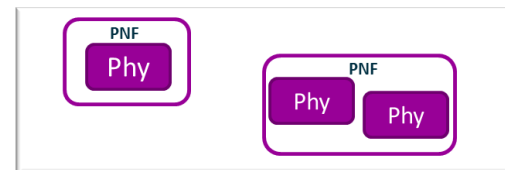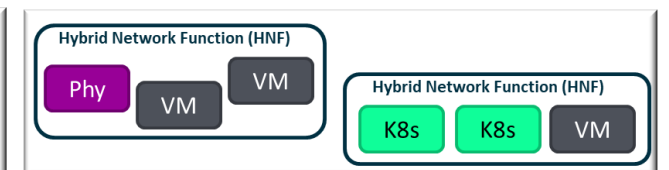containers** and/or **physical elements**…

a) All VMs

b) All Containers

c) All Physical

d) Hybrid cases

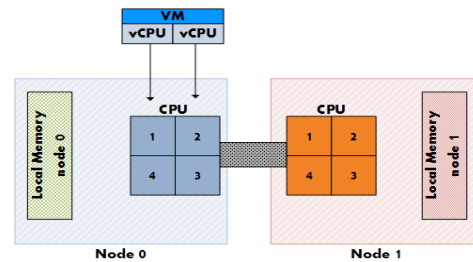# … and ready for network-specific workloads whenever needed

Huge Pages

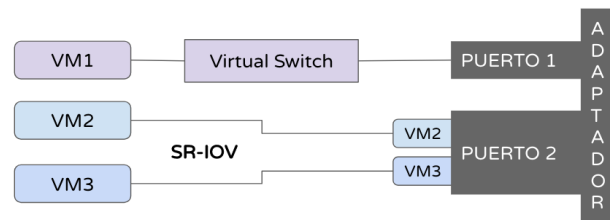**NUMA Topology Awareness**

CPU Pinning

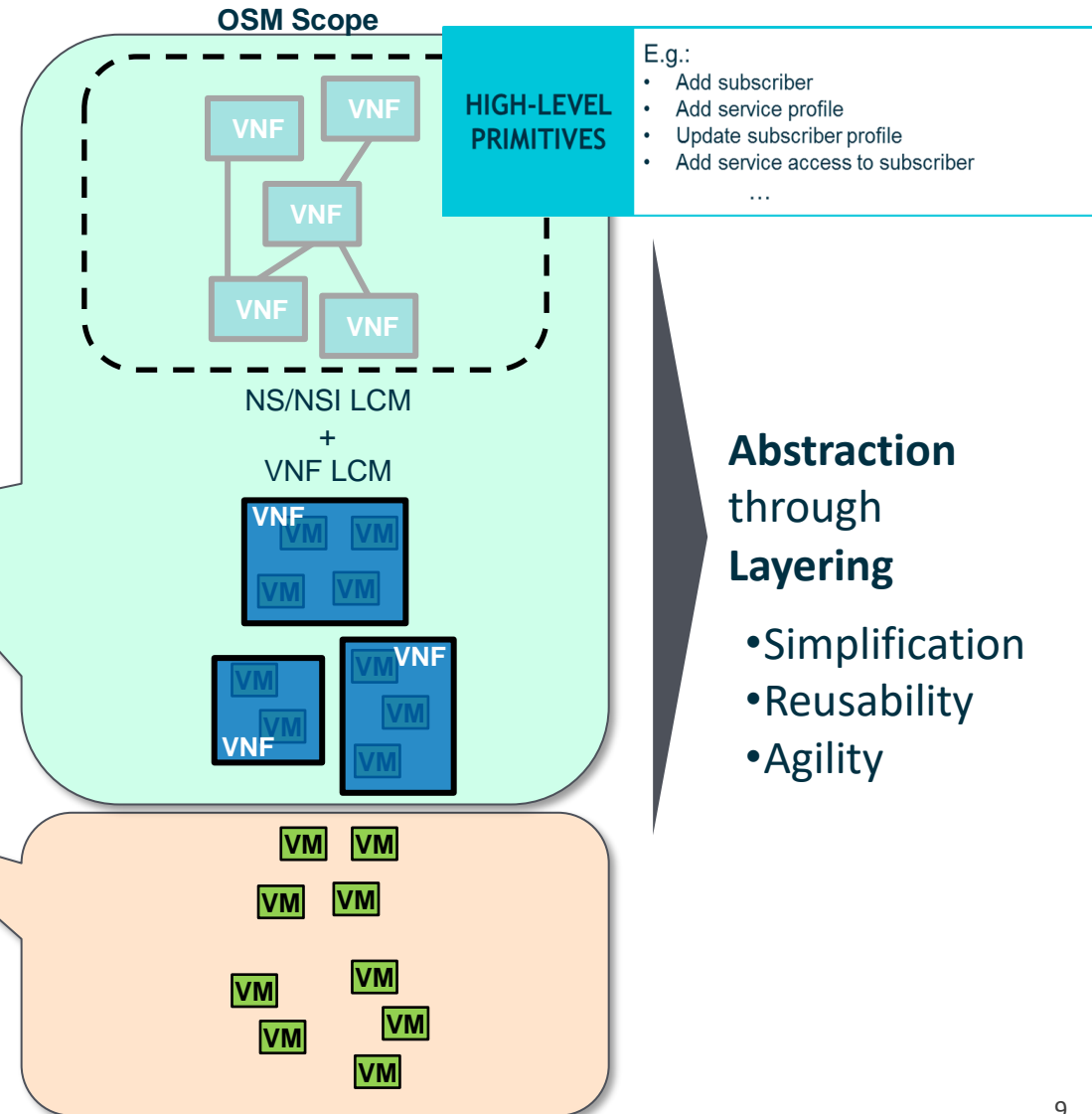**Data Plane assignment**

Line rate with all frame sizes

x100

x100

Scope of OSM

OSS/BSS

SOL005 + NS LCM calls

E2E Service Orchestration — Open Source MANO

IM integrated (charm based)

Or-Wi

Or-Vi

NETWORK FUNCTIONS (VNF, PNF, HNF)

TRANSPORT DOMAIN (WIMs)

VIRTUAL DOMAIN (VIMs)

OSM Scope

VNF VNF VNF VNF VNF

NS/NSI LCM + VNF LCM

HIGH-LEVEL PRIMITIVES

E.g.:
- Add subscriber
- Add service profile
- Update subscriber profile
- Add service access to subscriber
- …

VNF VM VM VM VM

VNF VM VM

VNF VM VNF VM

Abstraction through **Layering**

- Simplification
- Reusability
- Agility

© ETSI
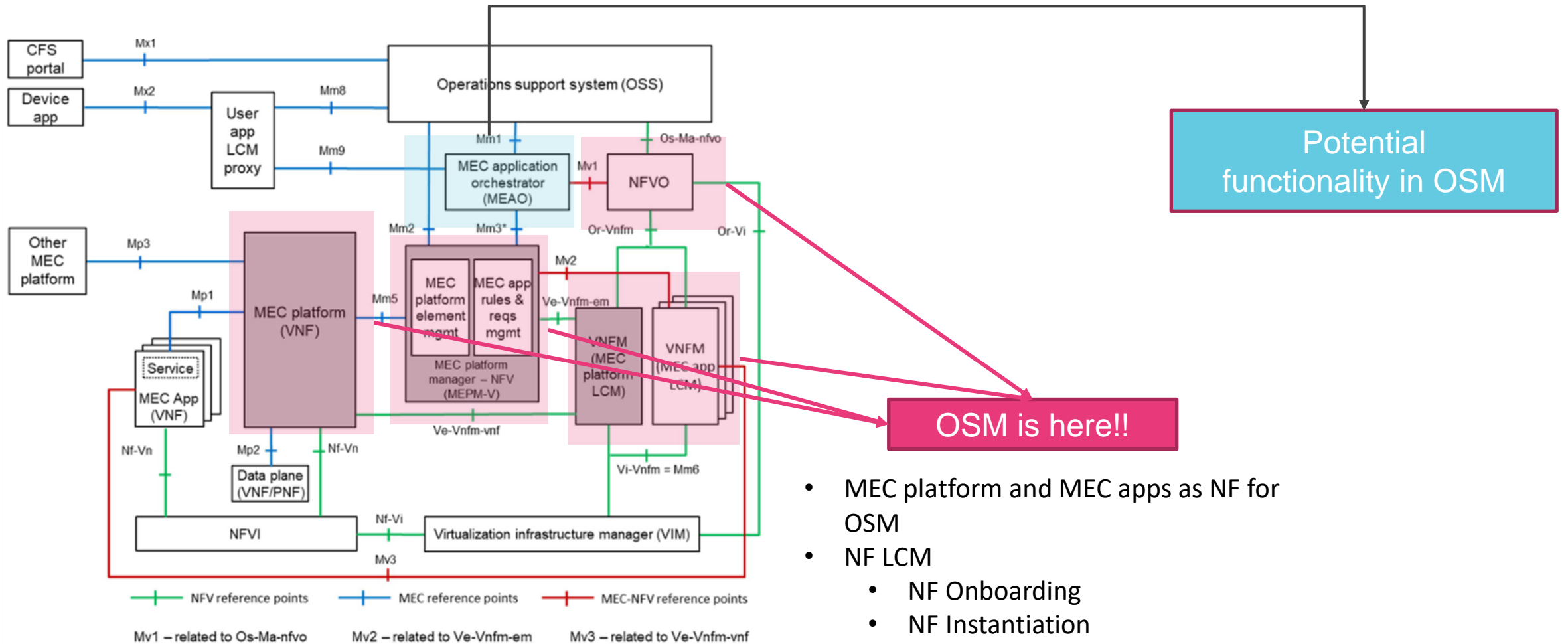
9

OSM in ETSI NFV architecture
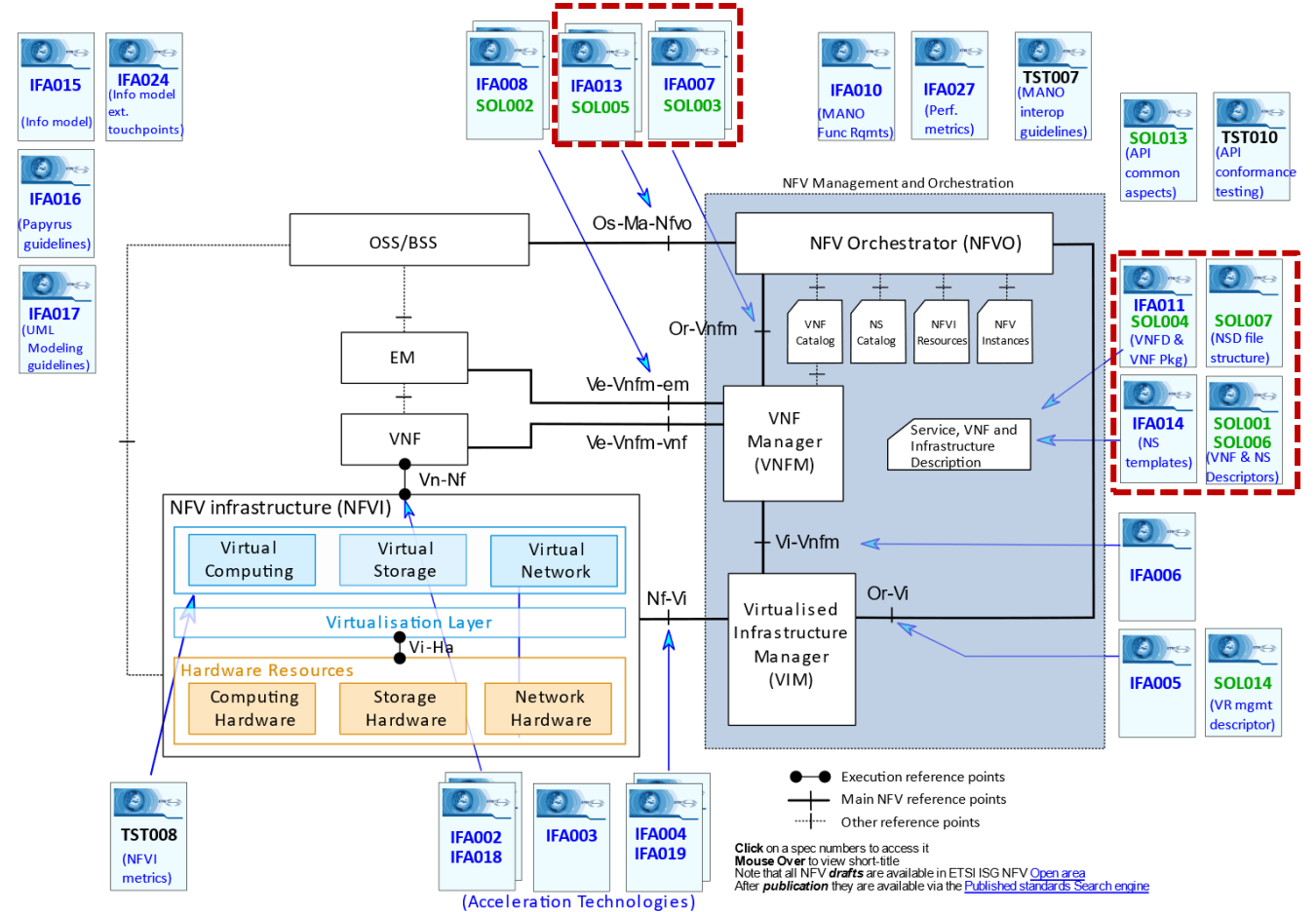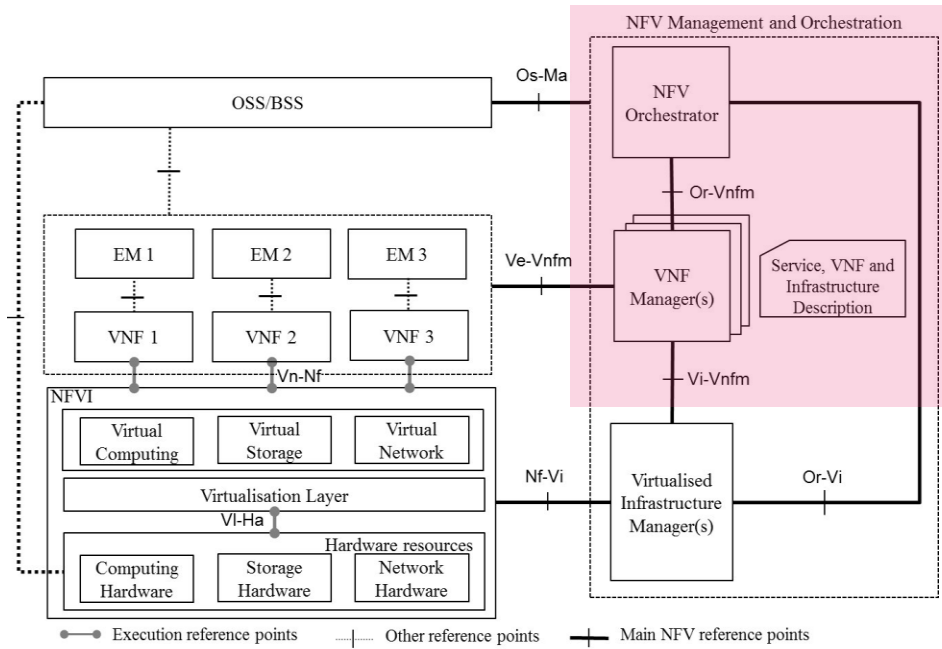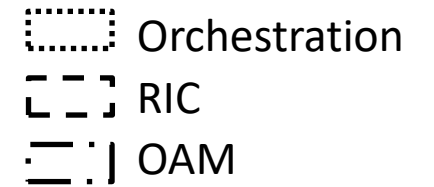
Relation to ETSI MEC architecture

Potential functionality in OSM
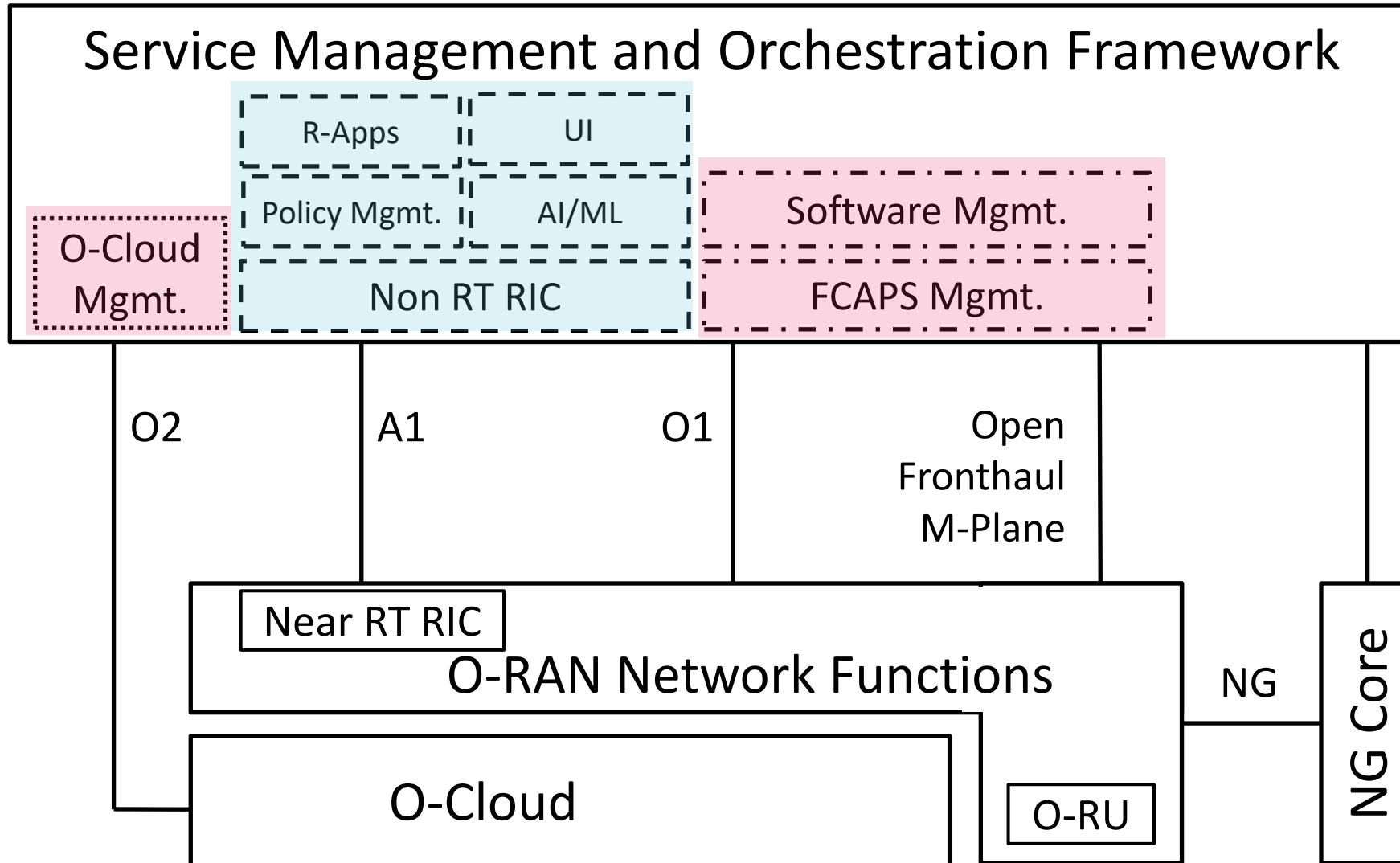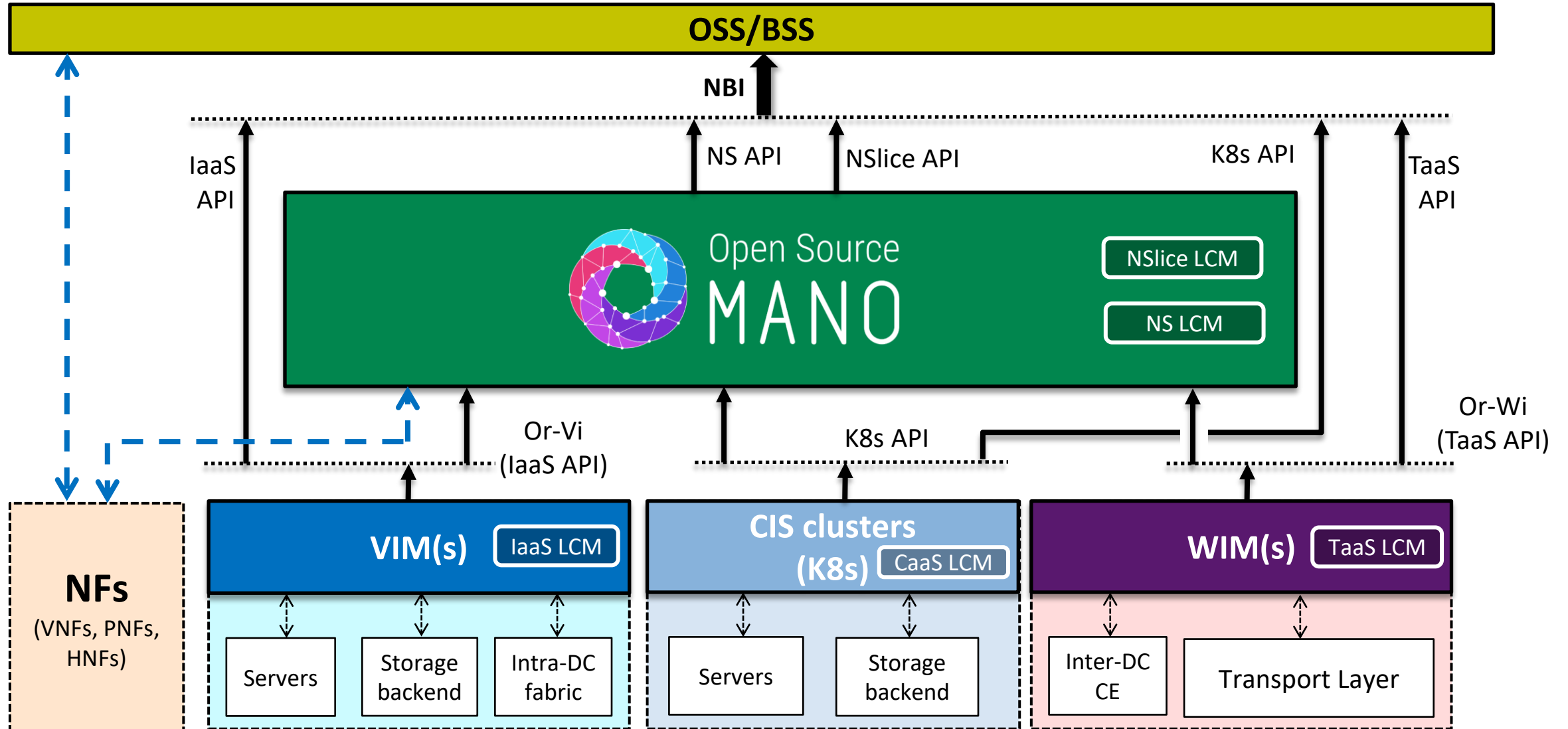
OSM is here!!

- MEC platform and MEC apps as NF for OSM
- NF LCM
  - NF Onboarding
  - NF Instantiation
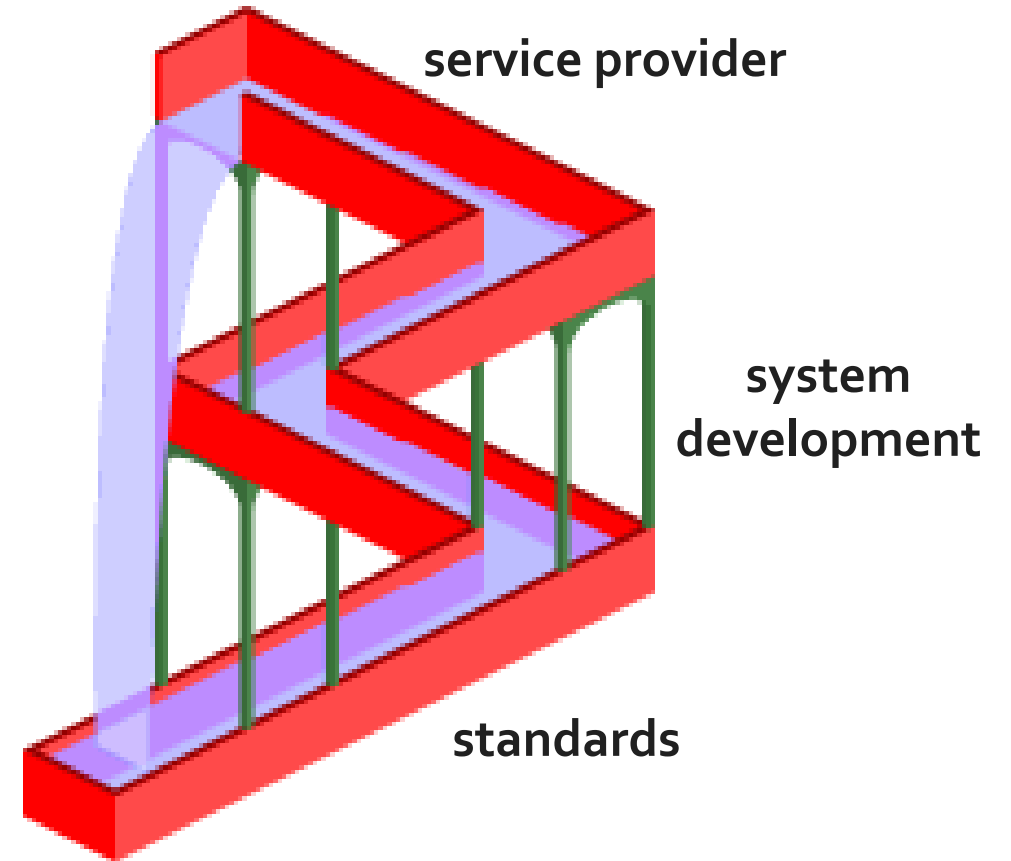 - NF Operation
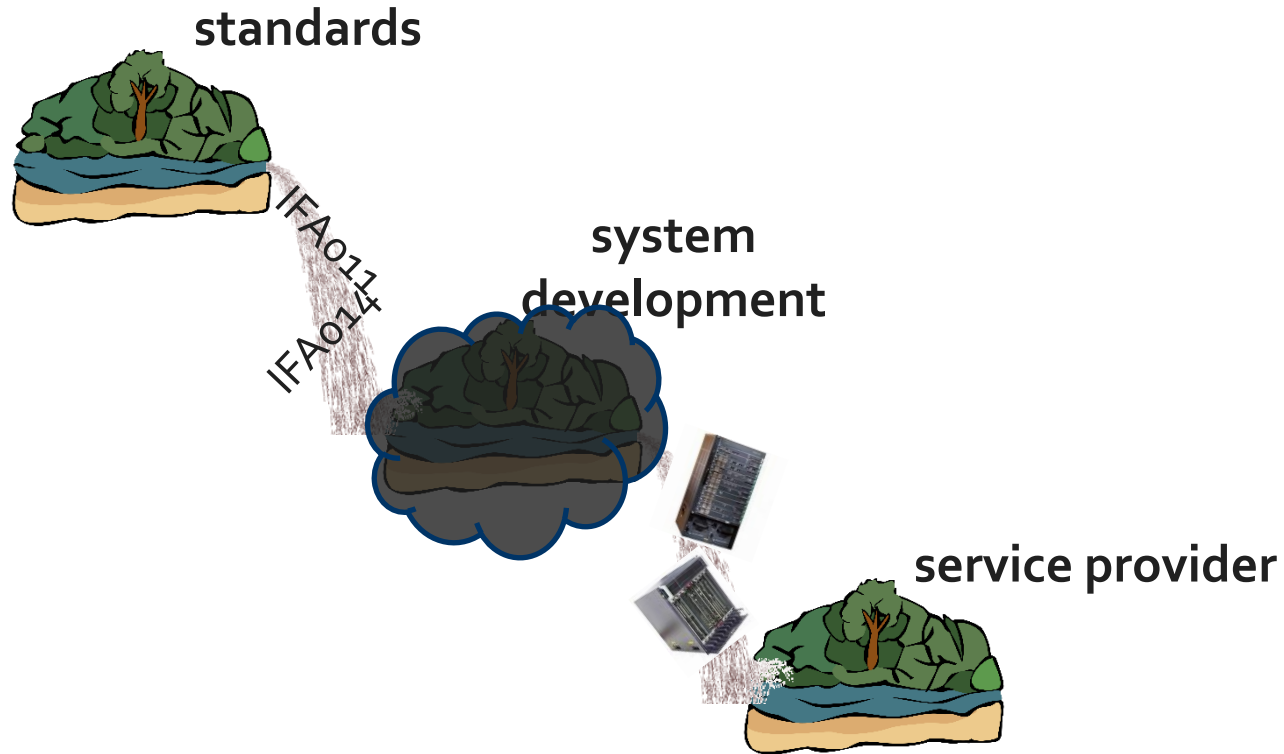
Relation to O-RAN architecture
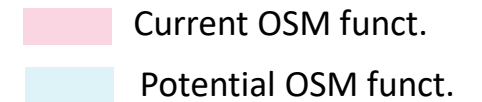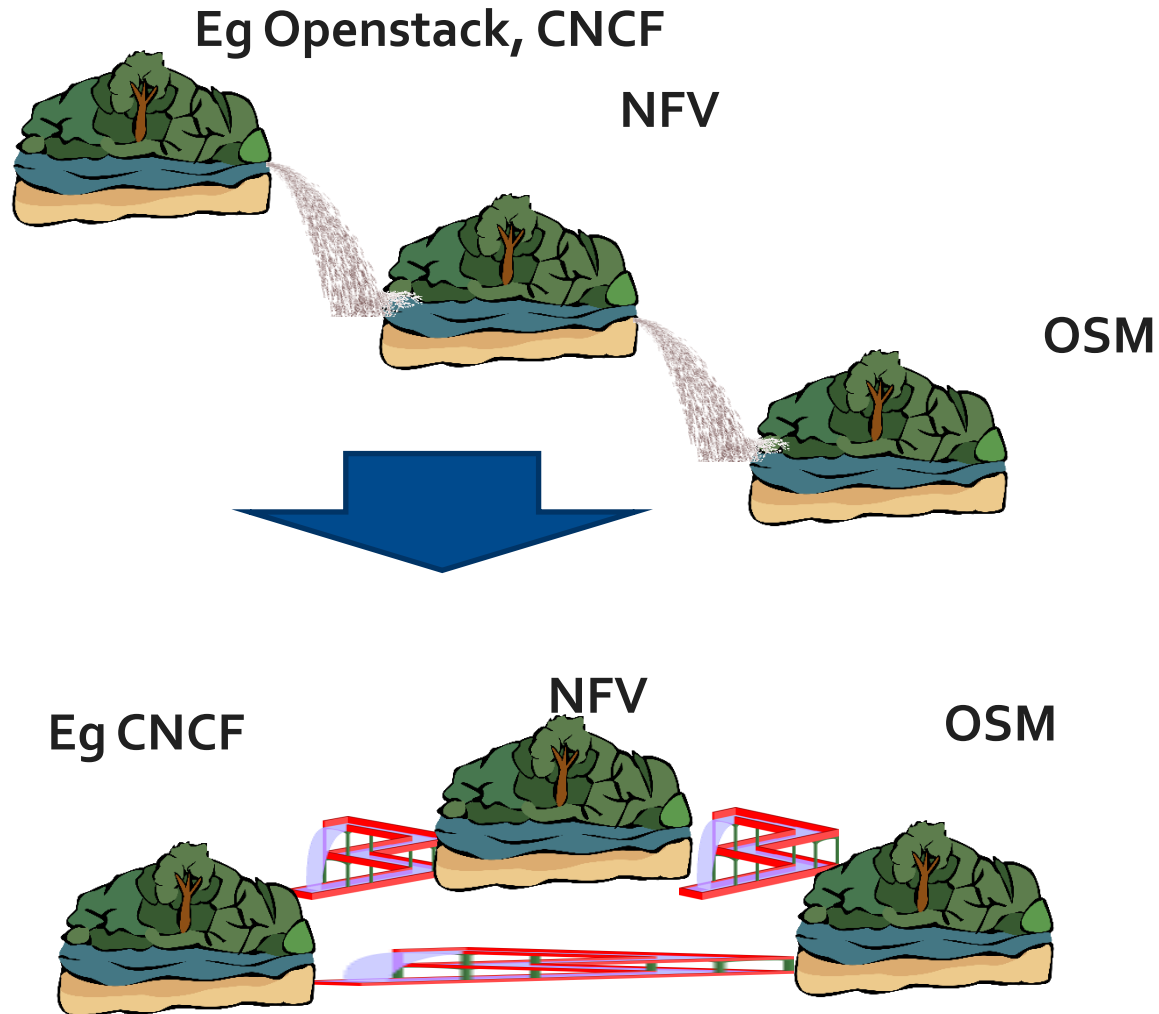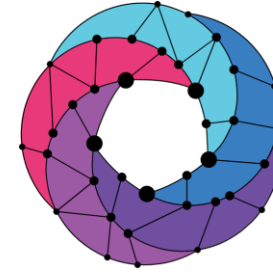
Interoperability architecture is key

Learning by doing   (OSM EUAG Slide from 2017)

standards

system development

service provider

IFA011

IFA014

service provider

system development

standards

Evolving NFV-OSM Cooperation

- But …
  - OSM does not currently implement every feature specified in NFV
  - OSM has already implemented some features not yet addressed by NFV

- And …
  - CNCF projects do not always recognise or prioritise NFV features
  - Some CNCF projects are commencing without NFV input

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Thank You!