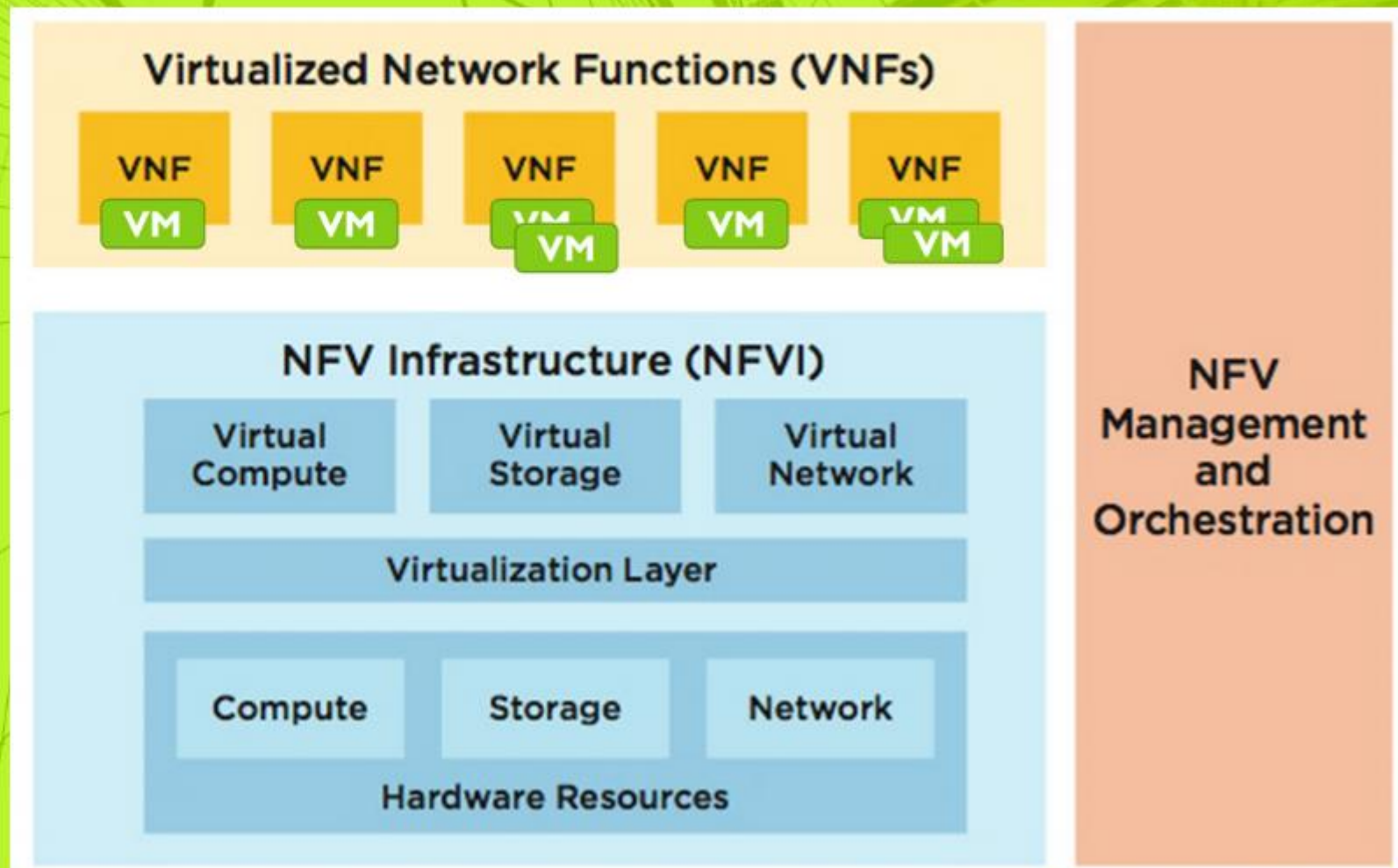


Introduction

NFV

Telco Cloud Networks



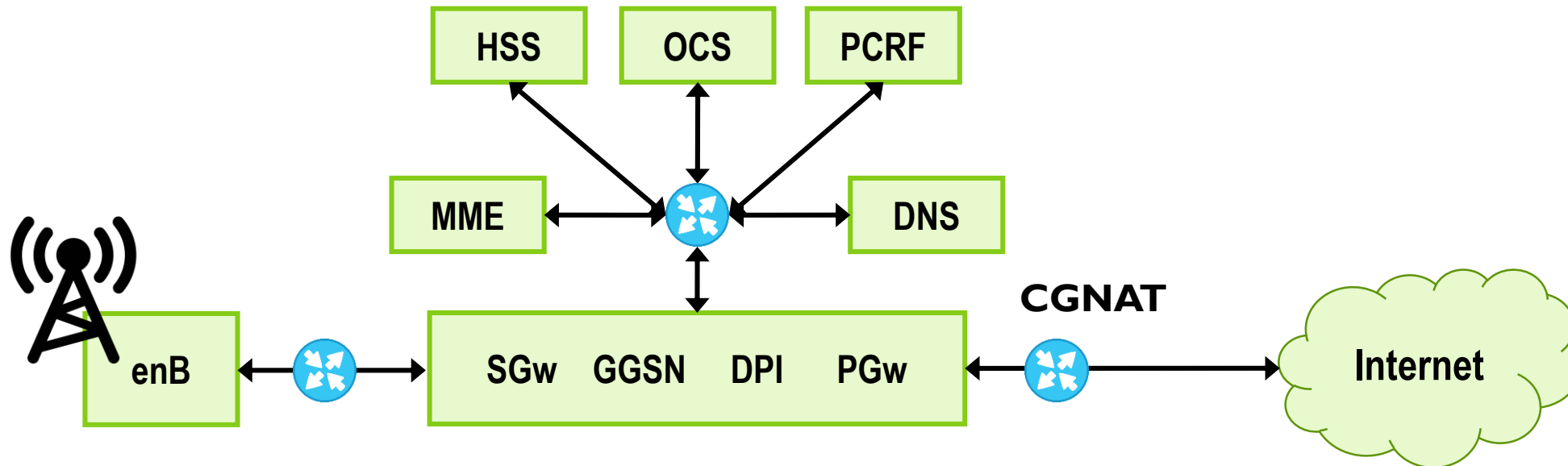


What is Cloud ? Why Cloud is necessary ?

- Demystifying Cloud :-
 - **NFV**
 - **SDN**
 - **Hypervisor Vs Container**

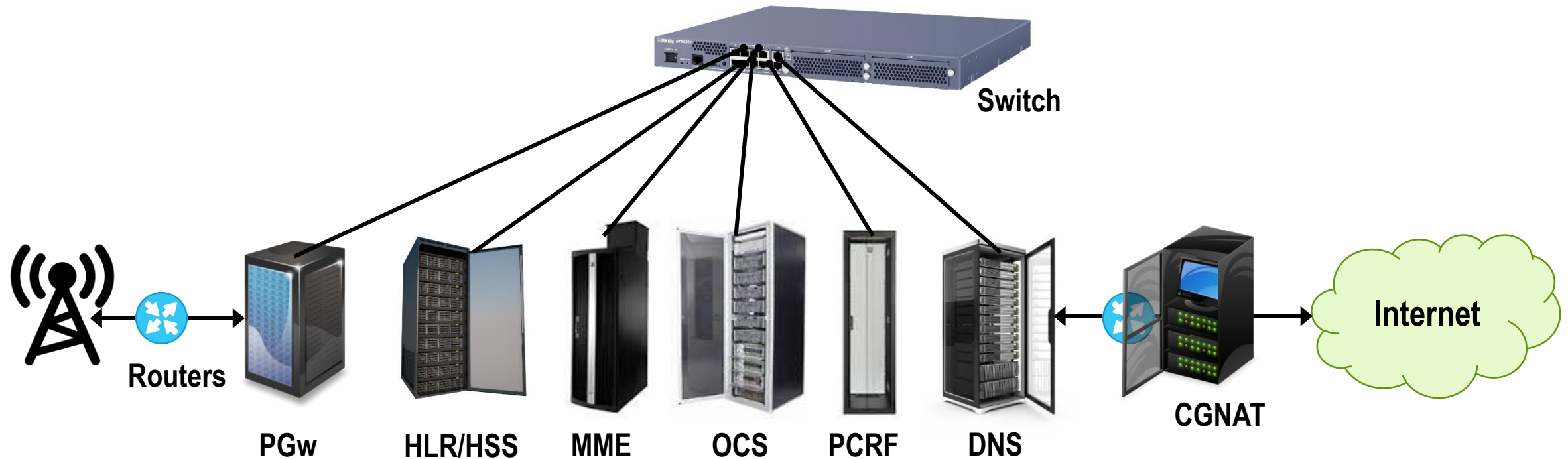
NFV : Network function Virtualization

also known as virtual network function (VNF)



Traditional LTE Network

NFV : Network function Virtualization



Specialized Appliances / Purpose Build
Combination of Capacity & Functionality

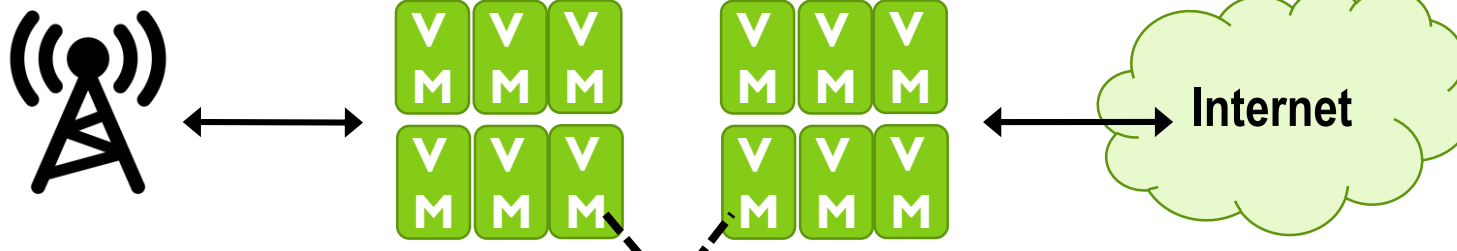
Traditional LTE Network

NFV : Network function Virtualization

Features of NFV

Virtual Network

Generic Hardware



NFV

- Softwarization
- Virtualization
- Orchestration

COTS HARDWARE

Common hardware for all Apps
Commercial off-the-shelf

✓ Purpose Build hardware to Generic Hardware

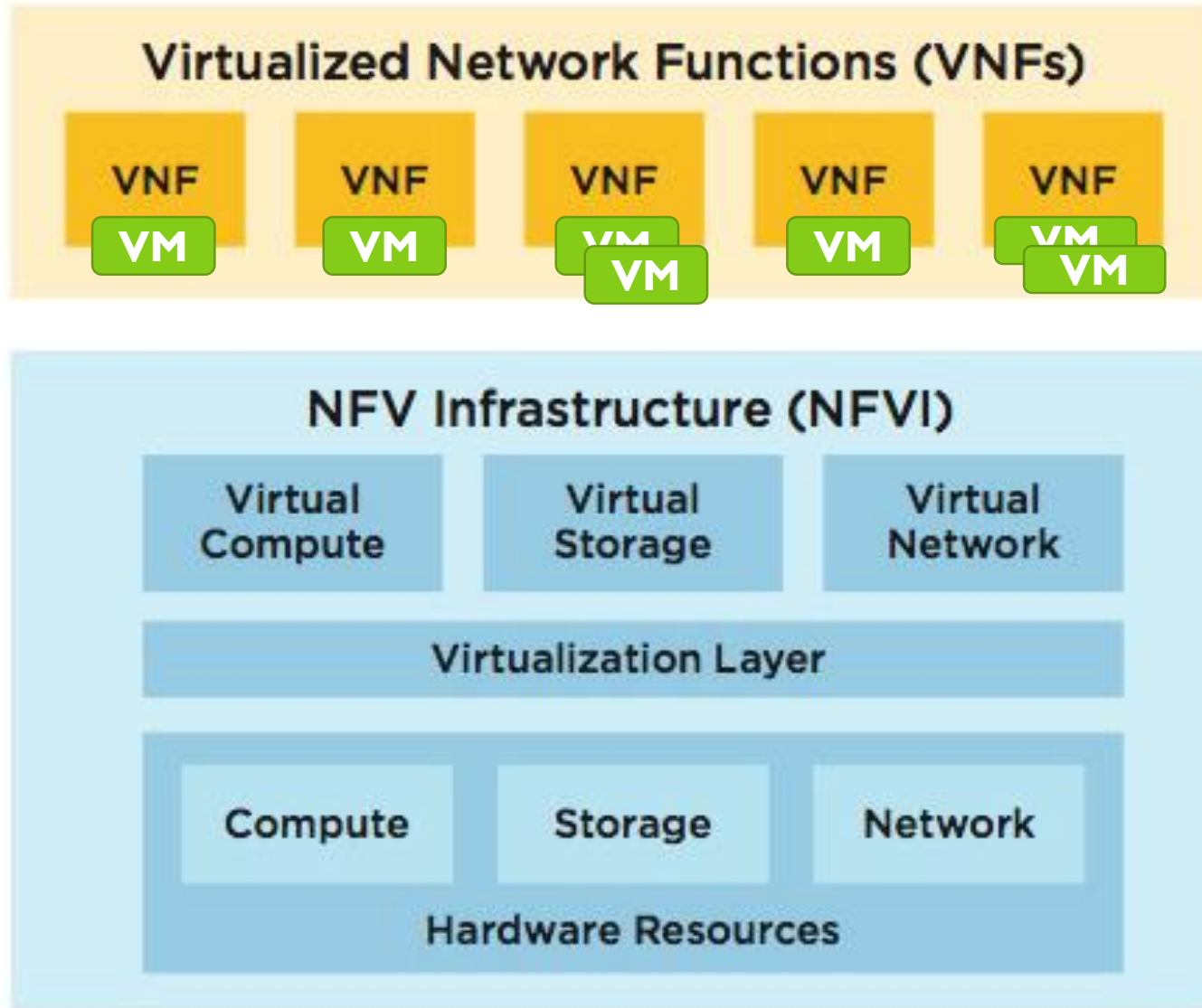
✓ App running on Software

✓ Separation of Network Function & Capacity

✓ Easy Capacity Scale Up / Down

✓ VM are Building Blocks

NFV Architecture



NFV Layers

Governing Specs

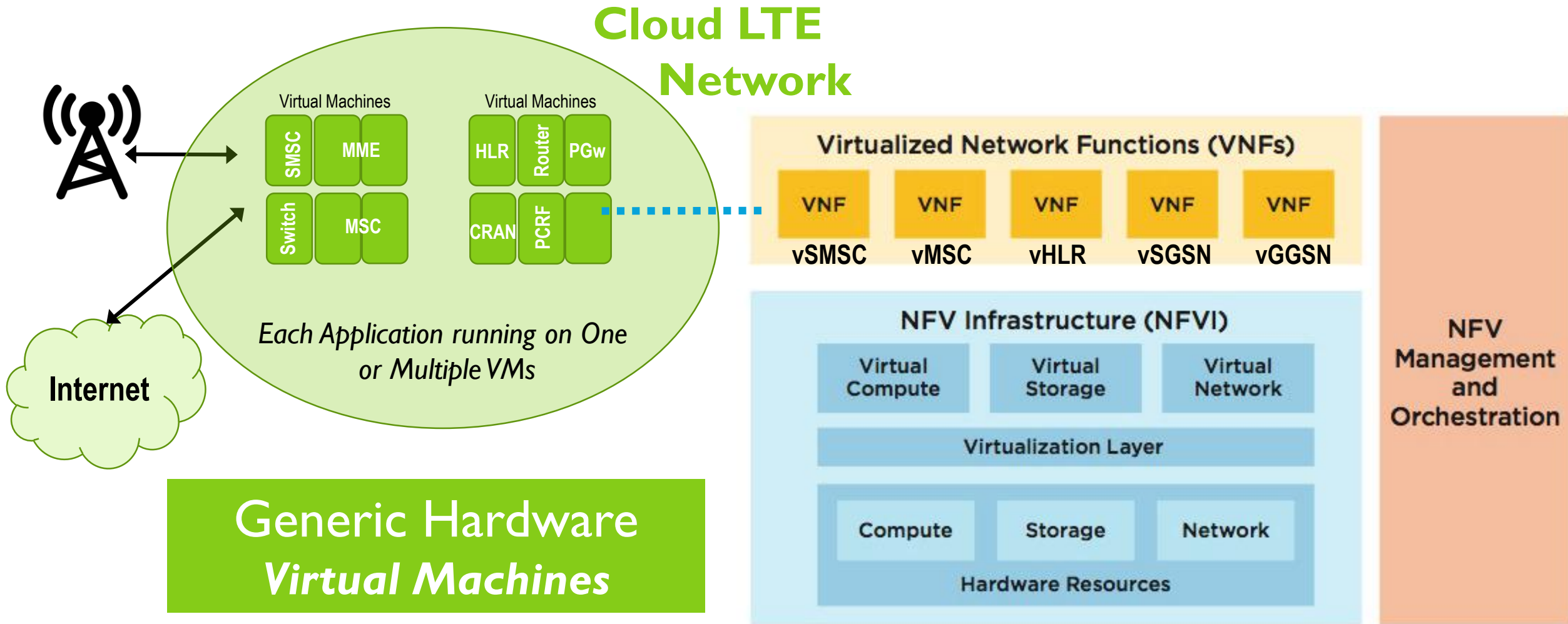


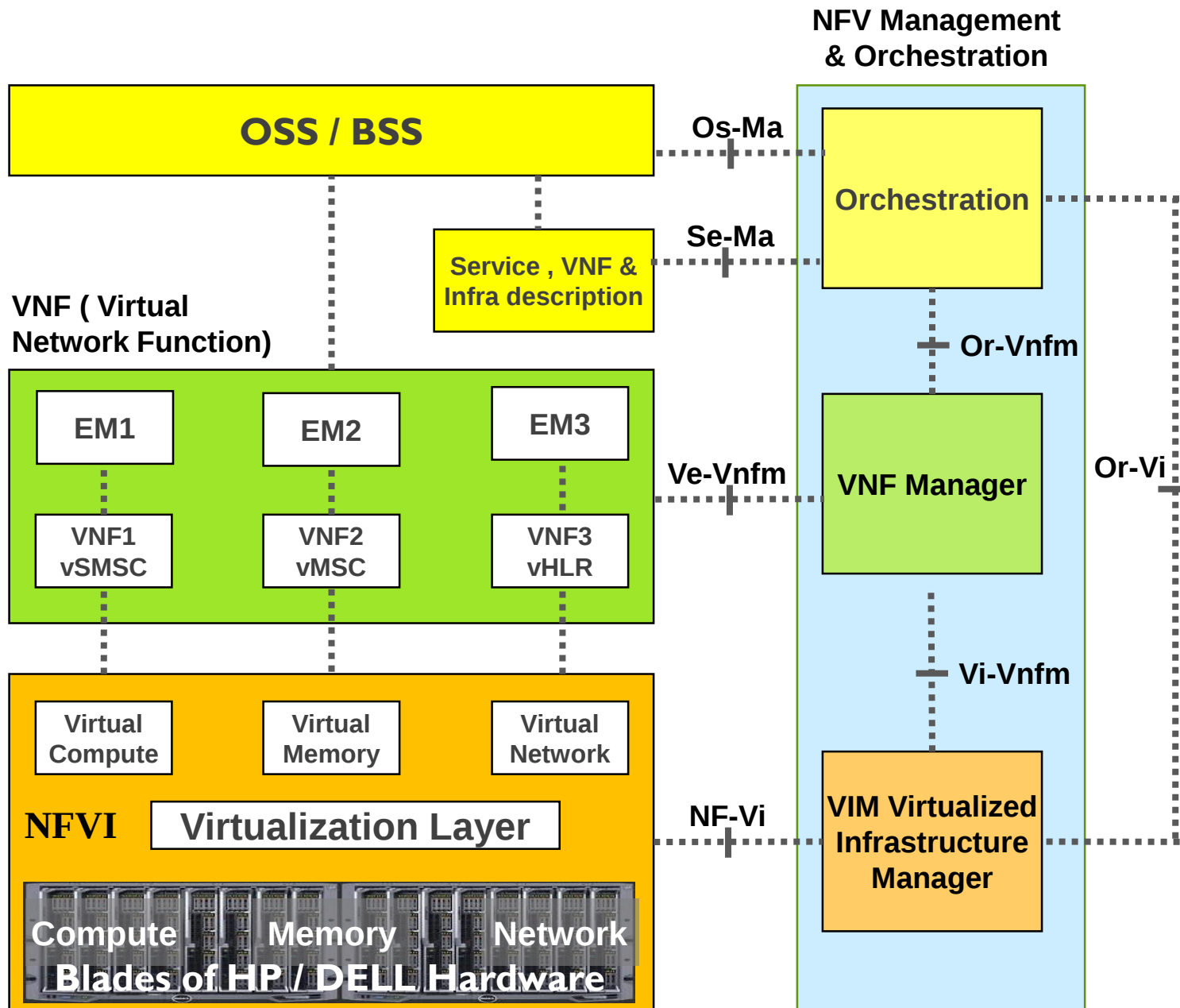
October 2012 White Paper

- AT&T USA
- BT
- CenturyLink
- China Mobile
- Colt
- Deutsche Telekom
- KDDI
- Orange
- Telecom Italia
- Telefonica
- Telstra
- Verizon

NFV : Network function Virtualization

Components of NFV





NFVI

(Network Function Virtualization Infrastructure)

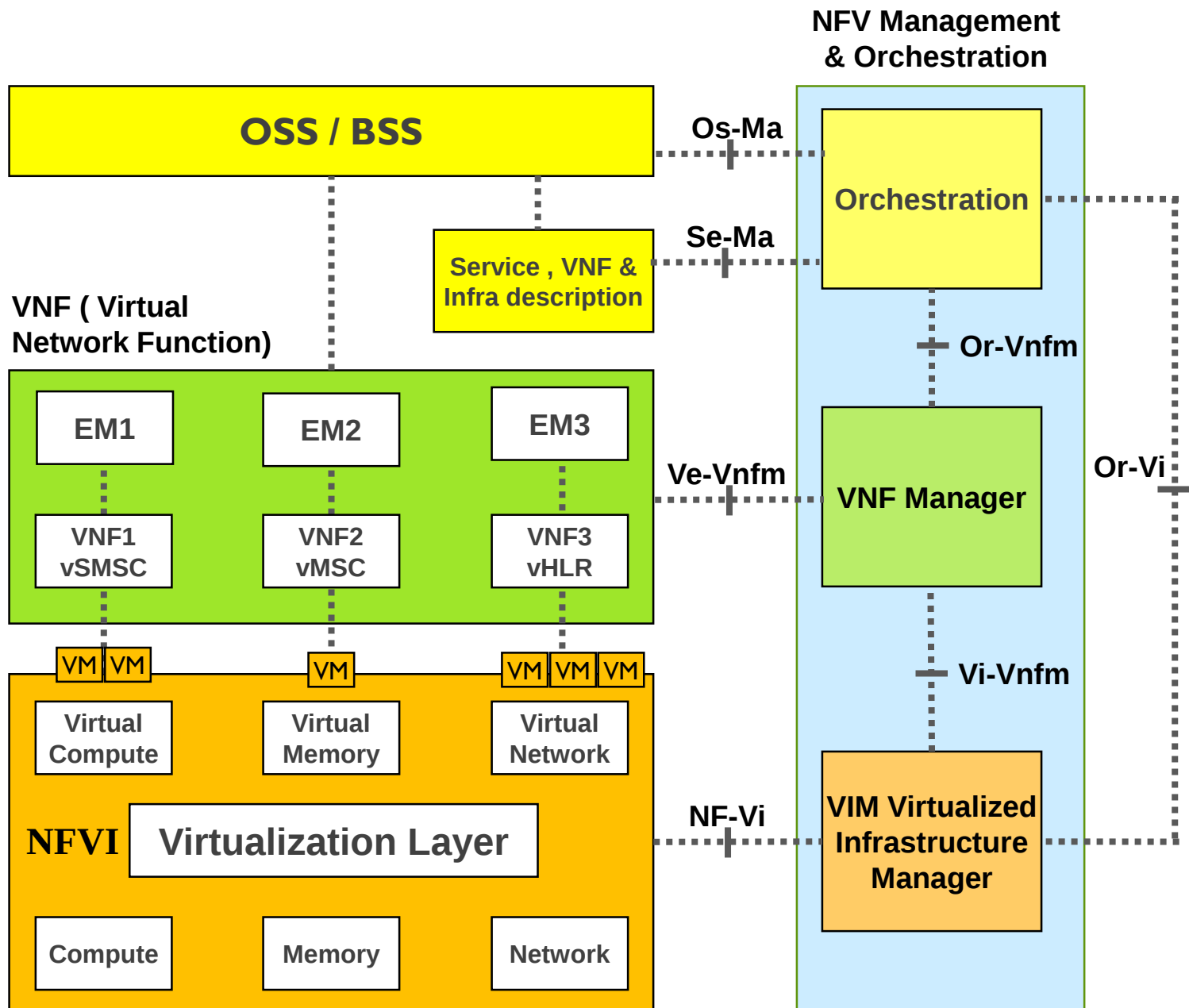
- Manage Physical part in NFVI
- Hypervisor : Responsible for abstracting physical resources into virtual resources

VIM

(Virtualized Infrastructure Manager)

- Management / Control for NFVI
- Also manages Reports & events

NFV Architecture



NFV Layers

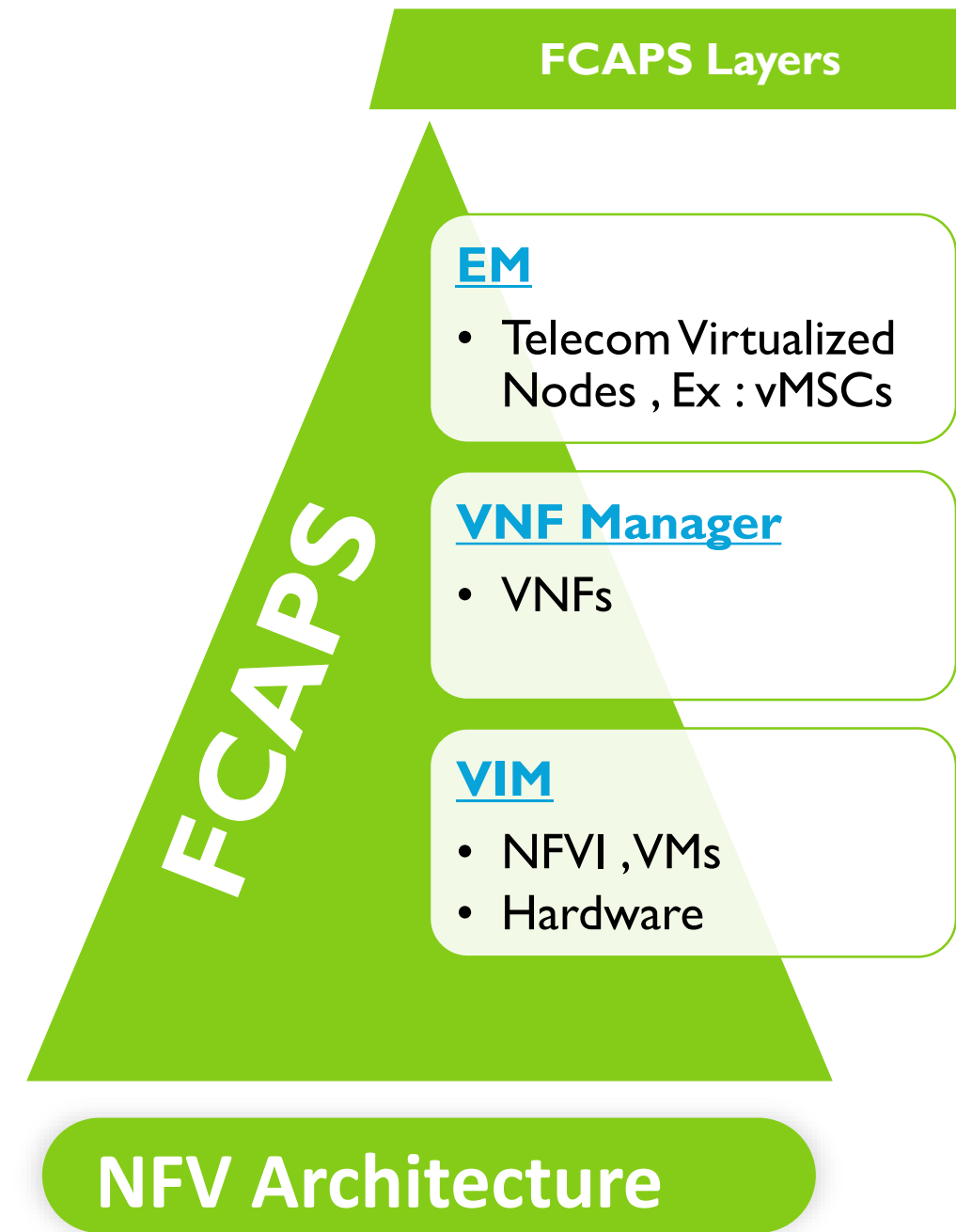
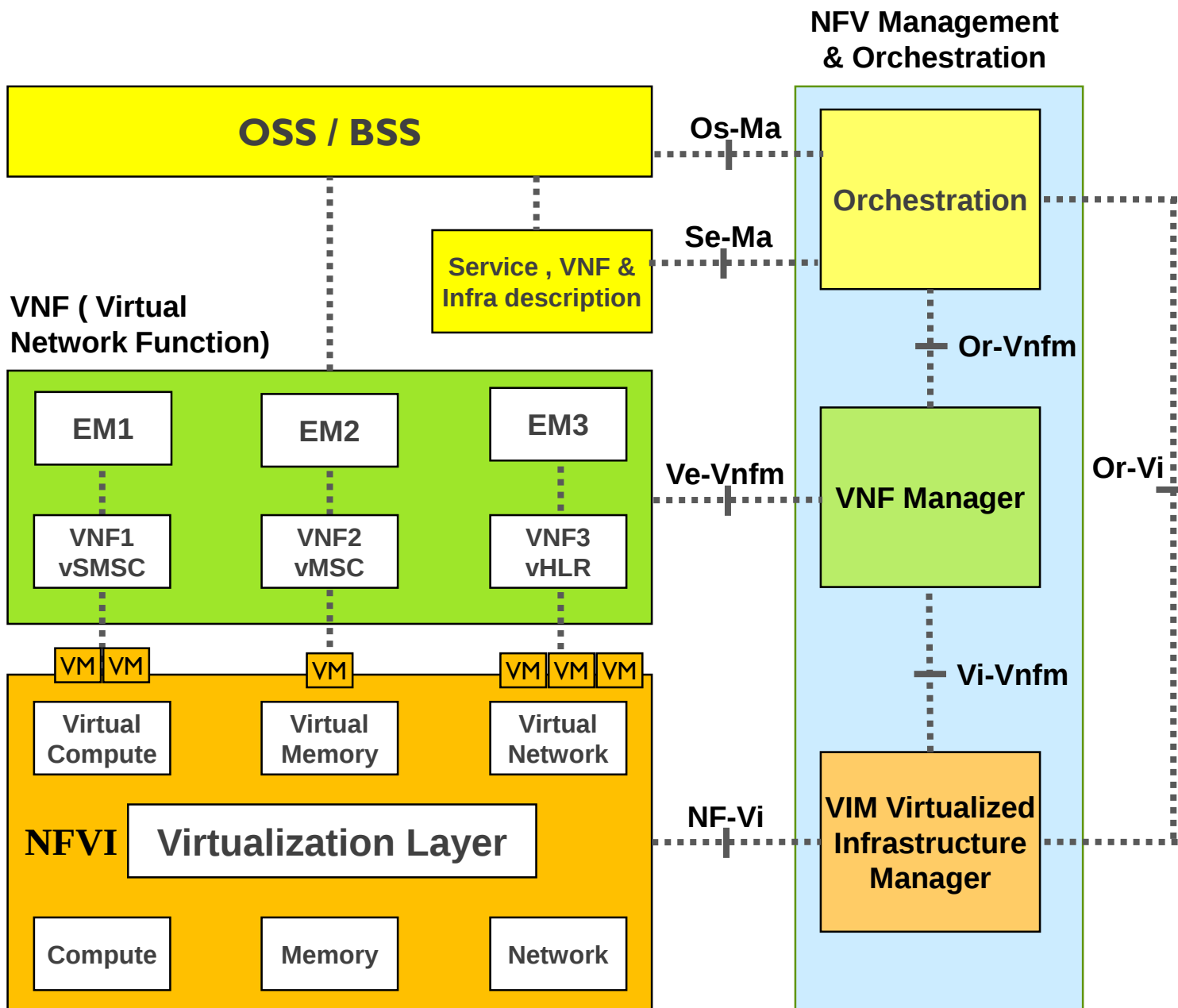
VNF

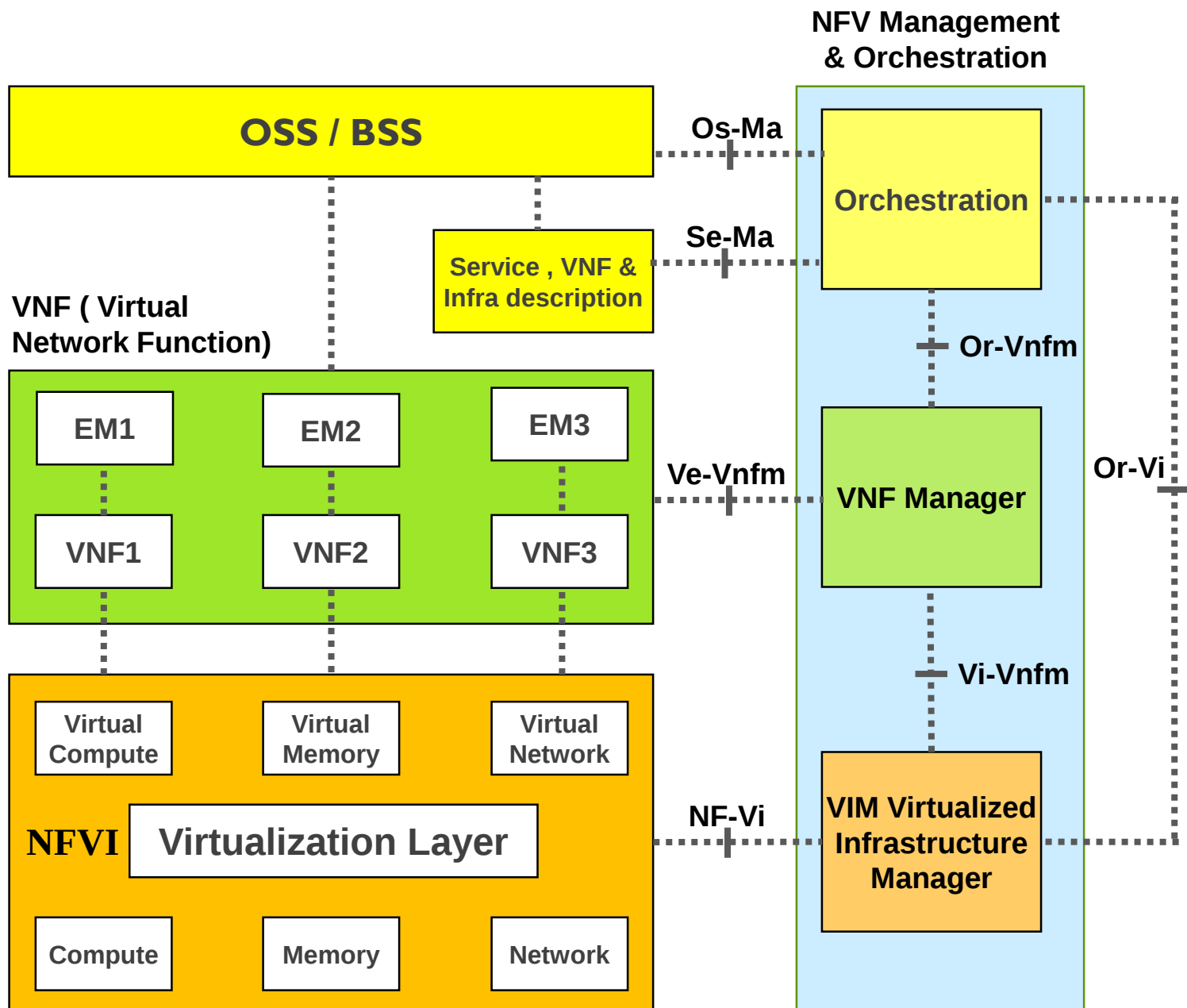
- A VNF is the basic block in NFV Architecture , Example :-
 - vIMS
 - vMME
 - vMSC
 - vSwitch
 - vRouter
- EM (Element Management) *FCAPS* of Application such as Link down , KPI Degradation etc.

VNF Manager

- Life cycle VNFs :
 - setting up/
 - Maintaining
 - Tearing down
- FCAPS of Virtualization and VNF

NFV Architecture





NFV Layers

NFV Orchestrator (NFVO)

- Key to Automation of SDN & NFV
- Performs :-
 - Resource orchestration
 - Network service orchestration
- Global resource management of NFVI resources via VNFM & VIM
- Allocating and scaling resources
- Single Orchestrator for NFV service

NFV Architecture

https://docbox.etsi.org/ISG/NFV/Open/Publications_pdf/Specs-Reports

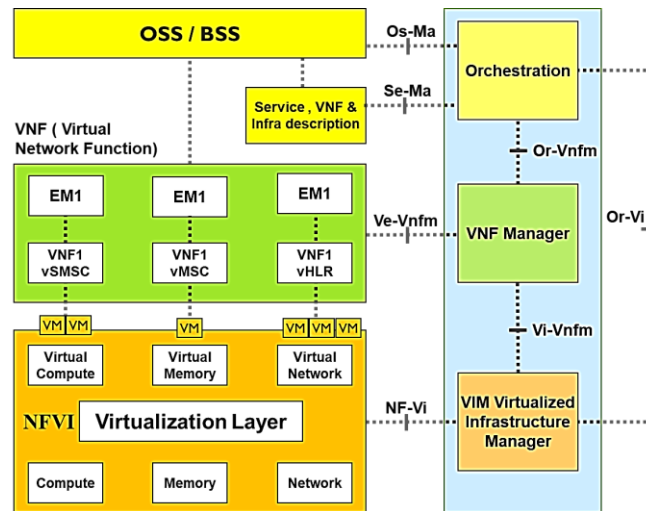


New Service or Node

Virtual Compute

Network Reachability

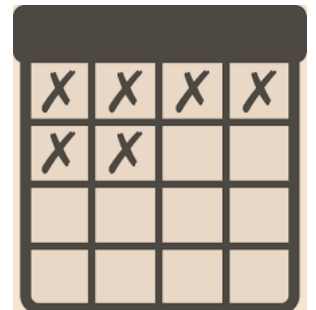
NFV



?

Few Days

- IP Allocation
- Policy Opening
- Routing changes
- Bandwidth Allocation
- End to End Reachability
- Service testing



Few Seconds



VIKAS
SHOKEEN



What is Cloud ? Why Cloud ?



Demystifying Cloud :-



NFV

- **SDN**

- *Hypervisor Vs Container*



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