NGMN & XGVela Joint Meeting

XGVela Team

12/14/2020

XGVela Overview| Brief Introduction

Status

Launch at: April 30, 2020

Currently a LF unfunded project

Plan to join LFN in 2021

Name explanation

XG: 4G, 5G, 6G …… XG

Vela: Sail in Latin to accelerate cloud native transformation and innovation

Project definition

An open source cloud native PaaS for applications and telco network functions, which is to enable new services and help mobile operators to seize the business opportunity from vertical industries in the 5G era
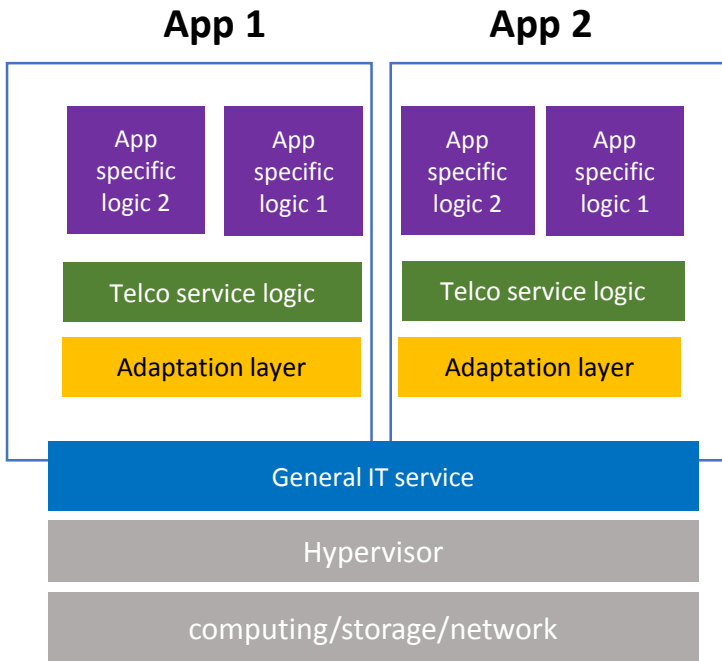
TSC member (In alphabetical order)

More Operators and end users are welcomed!
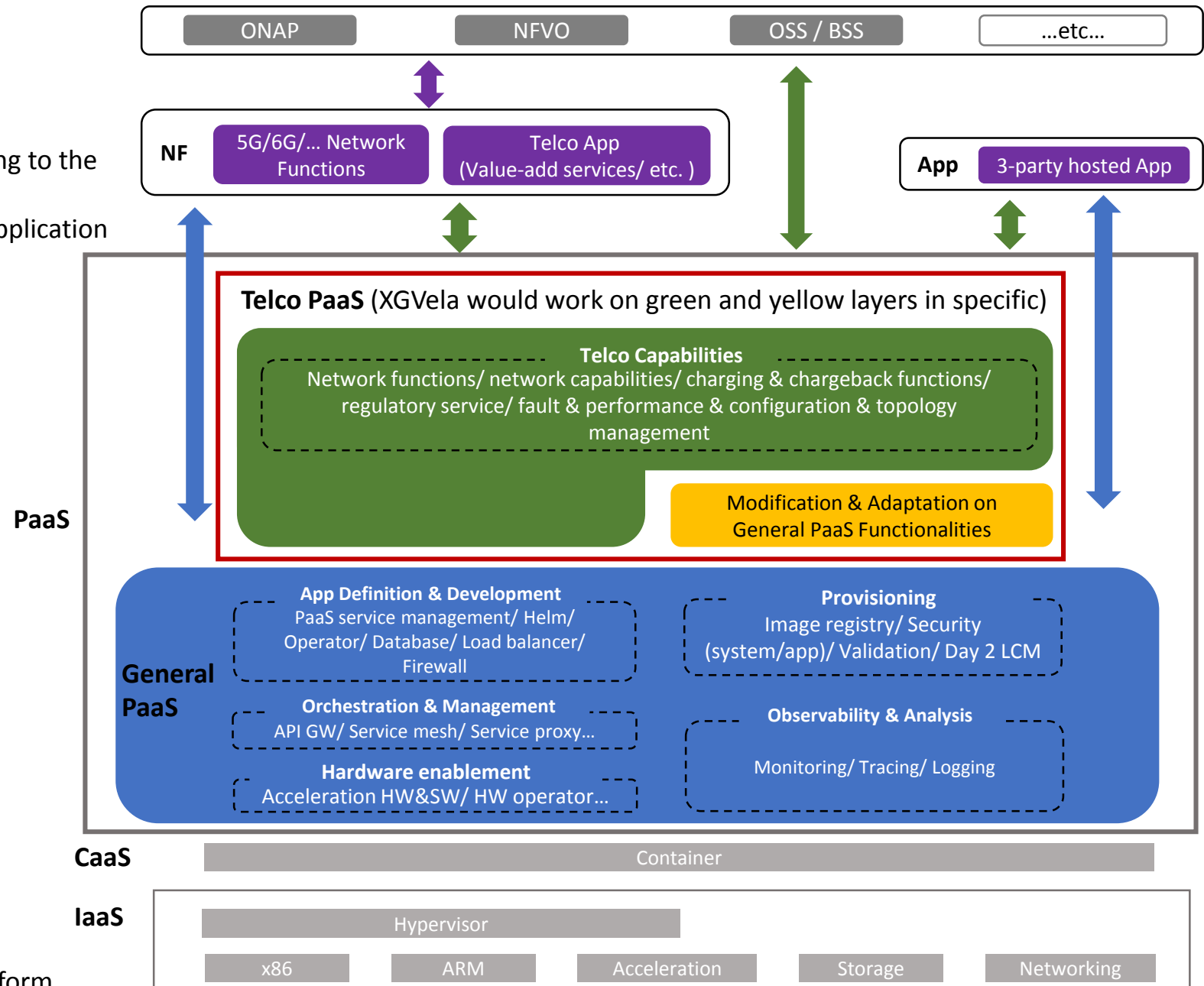
XGVela Update| Architecture

1. Application tailoring:

- The NFs / applications are further decomposed according to the microservices architecture
- Strip away the parts that have nothing to do with the application itself

App 1

App specific logic 2	App specific logic 1
Telco service logic	
Adaptation layer	

App 2

App specific logic 2	App specific logic 1
Telco service logic	
Adaptation layer	

General IT service

Hypervisor

computing/storage/network

2. Platform addition:

- Support the coexistence of multiple resource forms
- Based on network element software architecture, the implementation of the general service rely on the platform
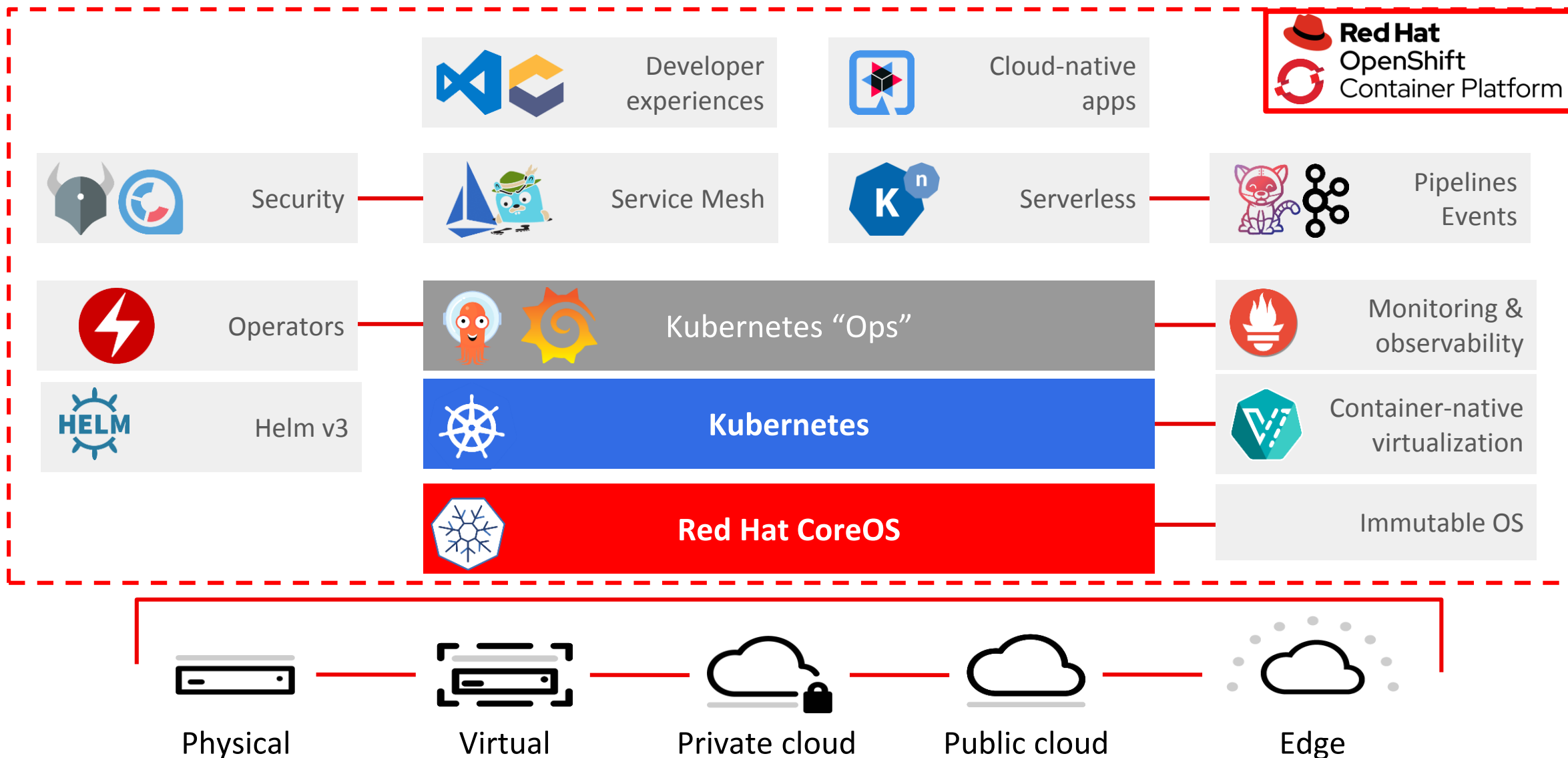- Provides unified capabilities through API

ONAP	NFVO	OSS / BSS	...etc...

NF | 5G/6G/... Network Functions | Telco App (Value-add services/ etc.)

App | 3-party hosted App

PaaS

Telco PaaS (XGVela would work on green and yellow layers in specific)

Telco Capabilities
Network functions/ network capabilities/ charging & chargeback functions/ regulatory service/ fault & performance & configuration & topology management

Modification & Adaptation on General PaaS Functionalities

General PaaS

App Definition & Development
PaaS service management/ Helm/ Operator/ Database/ Load balancer/ Firewall

Provisioning
Image registry/ Security (system/app)/ Validation/ Day 2 LCM

Orchestration & Management
API GW/ Service mesh/ Service proxy...

Observability & Analysis
Monitoring/ Tracing/ Logging

Hardware enablement
Acceleration HW&SW/ HW operator...

CaaS | Container

IaaS

Hypervisor

| x86 | ARM | Acceleration | Storage | Networking |

XGVela Update| Architecture Document

Architecture Outline

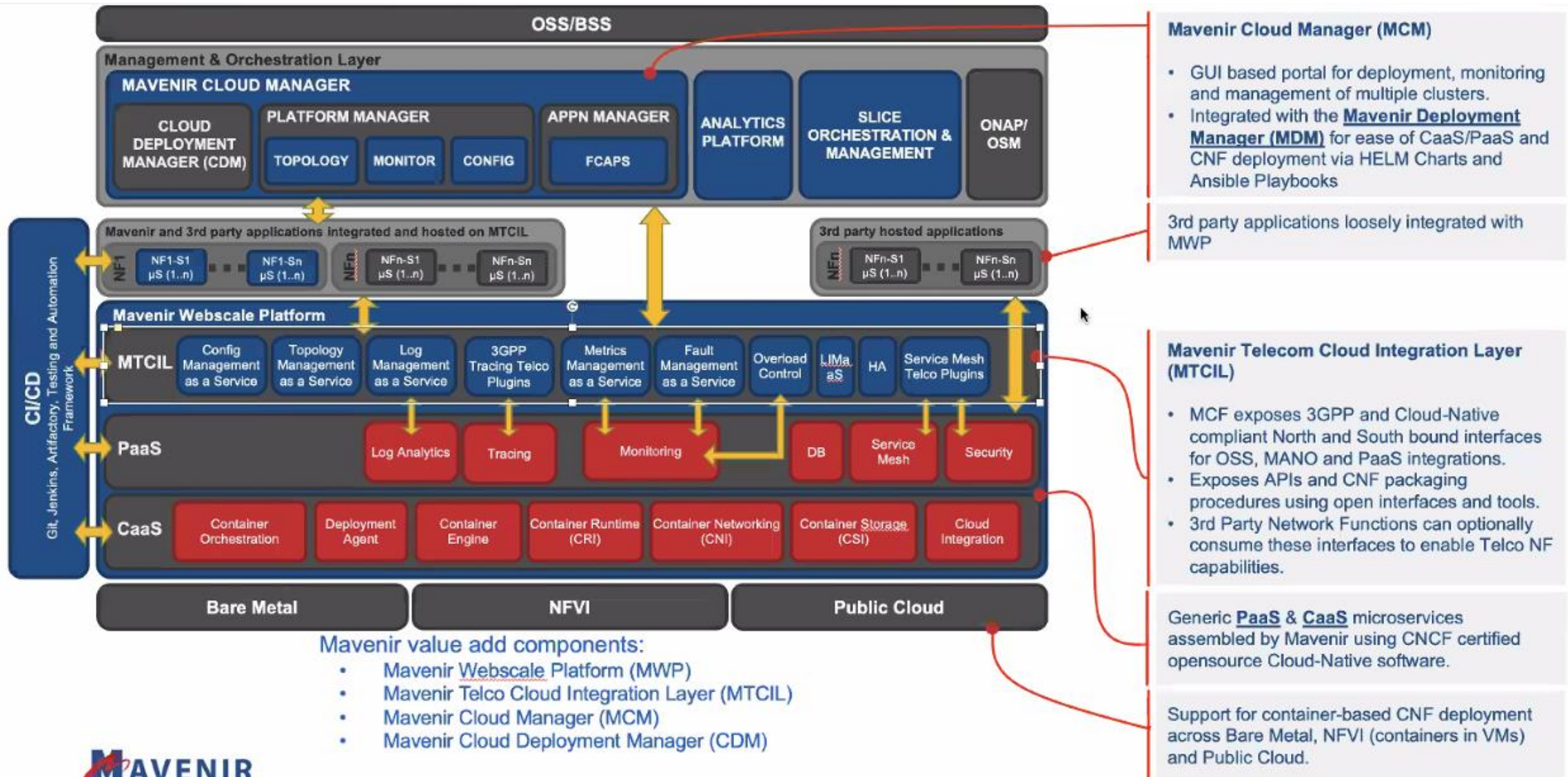GOAL: Create an architecture outline identifying key areas that need work

- Key areas identified so far
  - Networking
  - Telemetry and Management
  - Common Data and Information models
  - Regulatory Services
  - Platform and Workload policy
  - API Management
  - Etc... 16-17 such sub topics

- Assigned subsections to volunteers/owners
- Reviewed contributions in weekly meetings
- Seed code expected to kick start the work
- Plenty of good ideas and operationalizing it slowly

Participation and technical contributions welcome!!!

Telco PaaS - Much more than Kubernetes

XGVela Update| MTCIL as Seed code

Mavenir Cloud Manager (MCM)

- GUI based portal for deployment, monitoring and management of multiple clusters.
- Integrated with the **Mavenir Deployment Manager (MDM)** for ease of CaaS/PaaS and CNF deployment via HELM Charts and Ansible Playbooks

3rd party applications loosely integrated with MWP

Mavenir Telecom Cloud Integration Layer (MTCIL)

- MCF exposes 3GPP and Cloud-Native compliant North and South bound interfaces for OSS, MANO and PaaS integrations.
- Exposes APIs and CNF packaging procedures using open interfaces and tools.
- 3rd Party Network Functions can optionally consume these interfaces to enable Telco NF capabilities.

Generic **PaaS** & **CaaS** microservices assembled by Mavenir using CNCF certified opensource Cloud-Native software.

Support for container-based CNF deployment across Bare Metal, NFVI (containers in VMs) and Public Cloud.

XGVela Update| Community Scope

Document

- XGVela architecture, requirements, use cases, etc.
- XGVela platform User Guide

Development

- Telco specific PaaS capabilities (Functionalities, APIs, etc.)
- Modification, adaptation and enhancement on General PaaS functionalities (drivers, plug-ins, etc.)

Integration

- General-PaaS & Telco-PaaS

Testing

- XGVela with cloud native NF/applications
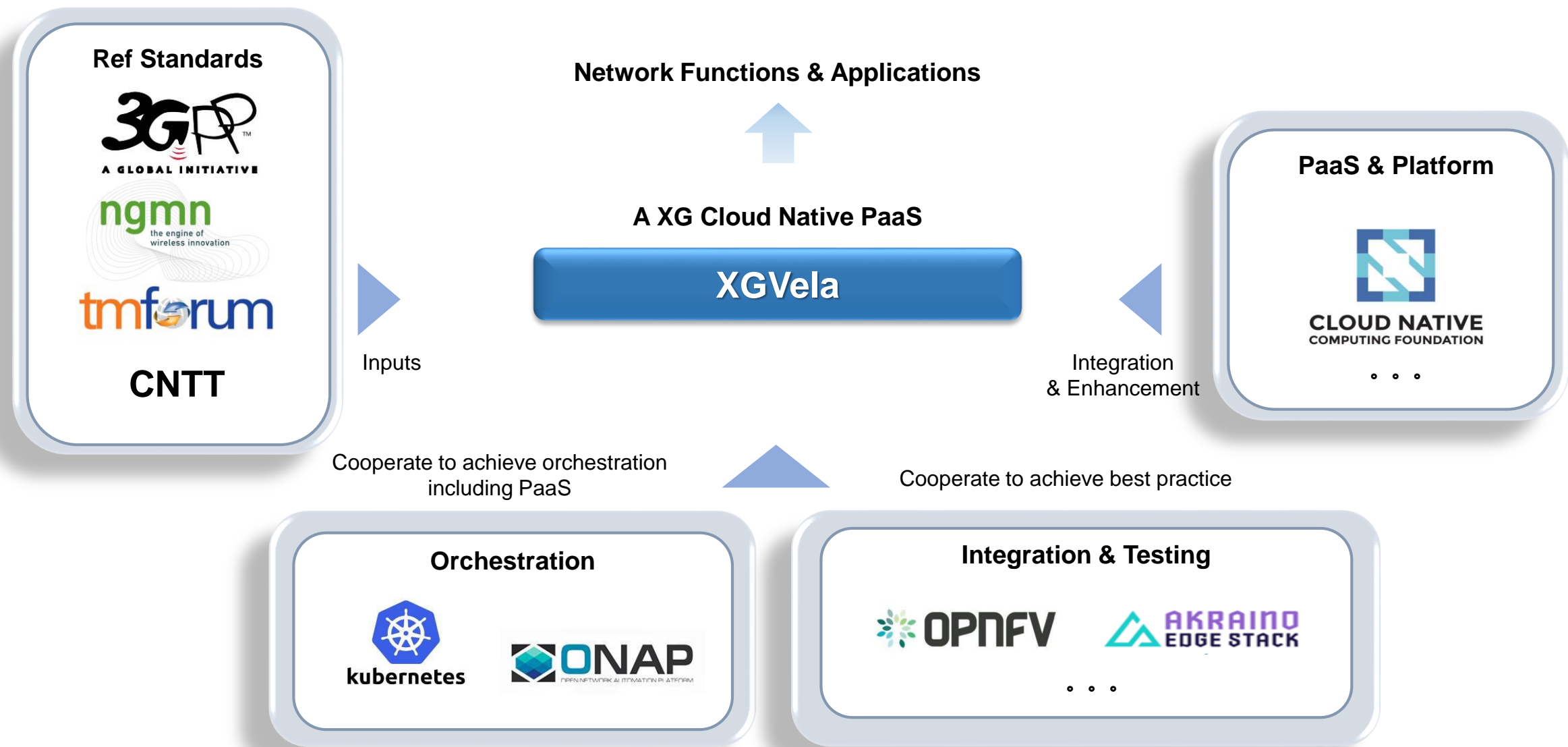- XGVela with related orchestration and management systems, etc.

Certification

- Commercial product certification (long-term scope)

XGVela Update| References

Project links

- *Github Wiki: https://github.com/XGVela/XGVela/wiki*

- *Meetings :*

  - *TSC meeting: every Tuesday, 13:00-14:00 UTC,*

    https://zoom.us/j/95282670859?pwd=Y2tZSGJGTVp3NGYwZHljMEhraG81UT09

  - *Global meeting: every other Friday, 13:00-14:00 UTC,*

    https://zoom.us/j/95137785359?pwd=eDhXSmJXdVVKOUpUcnNaS0N4d3FUdz09

- *Mailing list: https://lists.xgvela.org/g/xgvela-tsc*

- *Domain: https://xgvela.org/*

- *Slack: https://join.slack.com/t/xgvela/shared_invite/zt-i0jerfw6-MTzStY34B5rFGHxLkwns4w*

- *Architecture outline:*

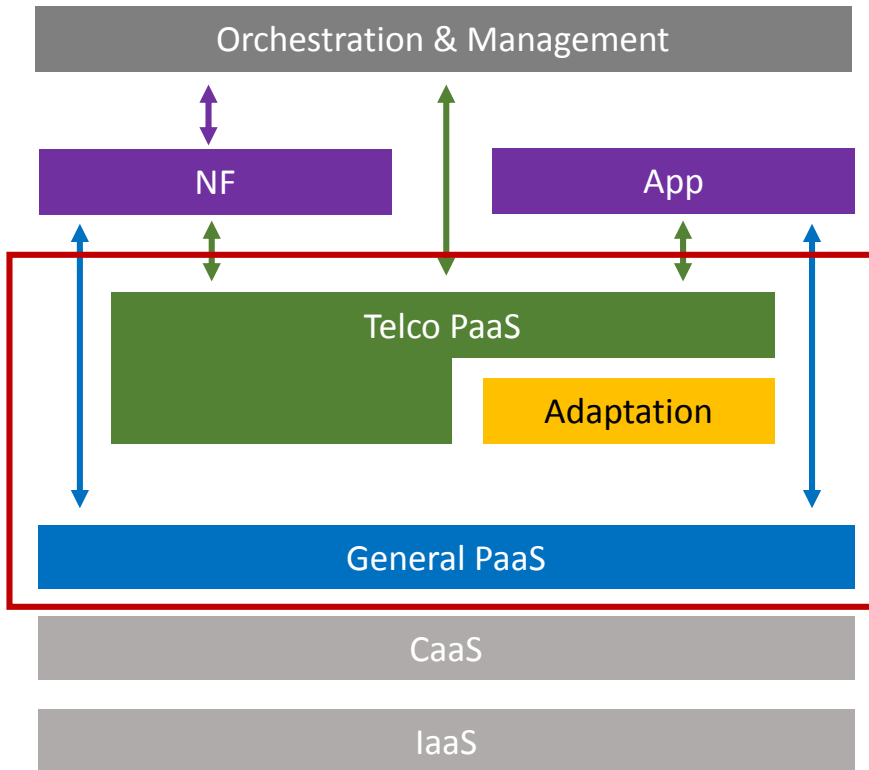 - *https://docs.google.com/document/d/15_JnwoSxl0-MAy3u_y6WSvyFVkrNCnuqJ0kWkK7Z6bk/edit*

XGVela Cross-Community Collaboration

Ref Standards

3GPP
A GLOBAL INITIATIVE

ngmn
the engine of
wireless innovation

tmforum

CNTT

Inputs

Network Functions & Applications

A XG Cloud Native PaaS

XGVela

Integration
& Enhancement

PaaS & Platform

CLOUD NATIVE
COMPUTING FOUNDATION

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Cooperate to achieve orchestration
including PaaS

Cooperate to achieve best practice

Orchestration

kubernetes

ONAP
OPEN NETWORK AUTOMATION PLATFORM

Integration & Testing

OPNFV

AKRAINO
EDGE STACK

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XGVela Collaboration| With NGMN

A NGMN Project – **Future Network Cloud Native Platform**

◆ One of the project goals is to **define an Open Telco Platform**
◆ Contents of this NGMN project cover SDO/open source gap analysis, cloudification of Open Telco Infrastructure, Open Architecture & ecosystem

◆ **Coordination point 1: Use cases of operators**
  - NGMN cloud native use case and requirements help XGVela to enrich PaaS platform
    - Using scenarios, required common PaaS capabilities
    - Multi-operator common process/capabilities derived from use cases

◆ **Coordination point 2: Platform definition and implementation**
  - NGMN & XGVela define and implement PaaS platform together
    - Functionalities, APIs, Enhancement points, PaaS lifecycle management process, etc.

◆ **Coordination point 3: PaaS promotion**
  - NGMN & XGVela make PaaS a widely recognized platform in SDO, Open source community and industry
    - PaaS merging with NFV or not?
    - How to orchestrate NF if introducing PaaS
    - Change of role between operators and vendors after introducing PaaS

Thank you