Our Proposal

- Additional scope to be considered in ONAP for Edge Application Management – as per MEC guidelines

- ONAP deployment to suit edge automation scenarios

- MVP closely following the standards to enable interoperability.

Reference Implementation of Reference Architecture

- **Step1. MVP "Orchestration Level":**
  - MEAO
  - Ref Points: Mm1, Mv1

- **Step2. "Management Level":**
  - MEMPM-V
  - ME Platform LCM
  - ME App LCM
  - Ref Points: Mm2, Mm3*, Mv2, Mm6
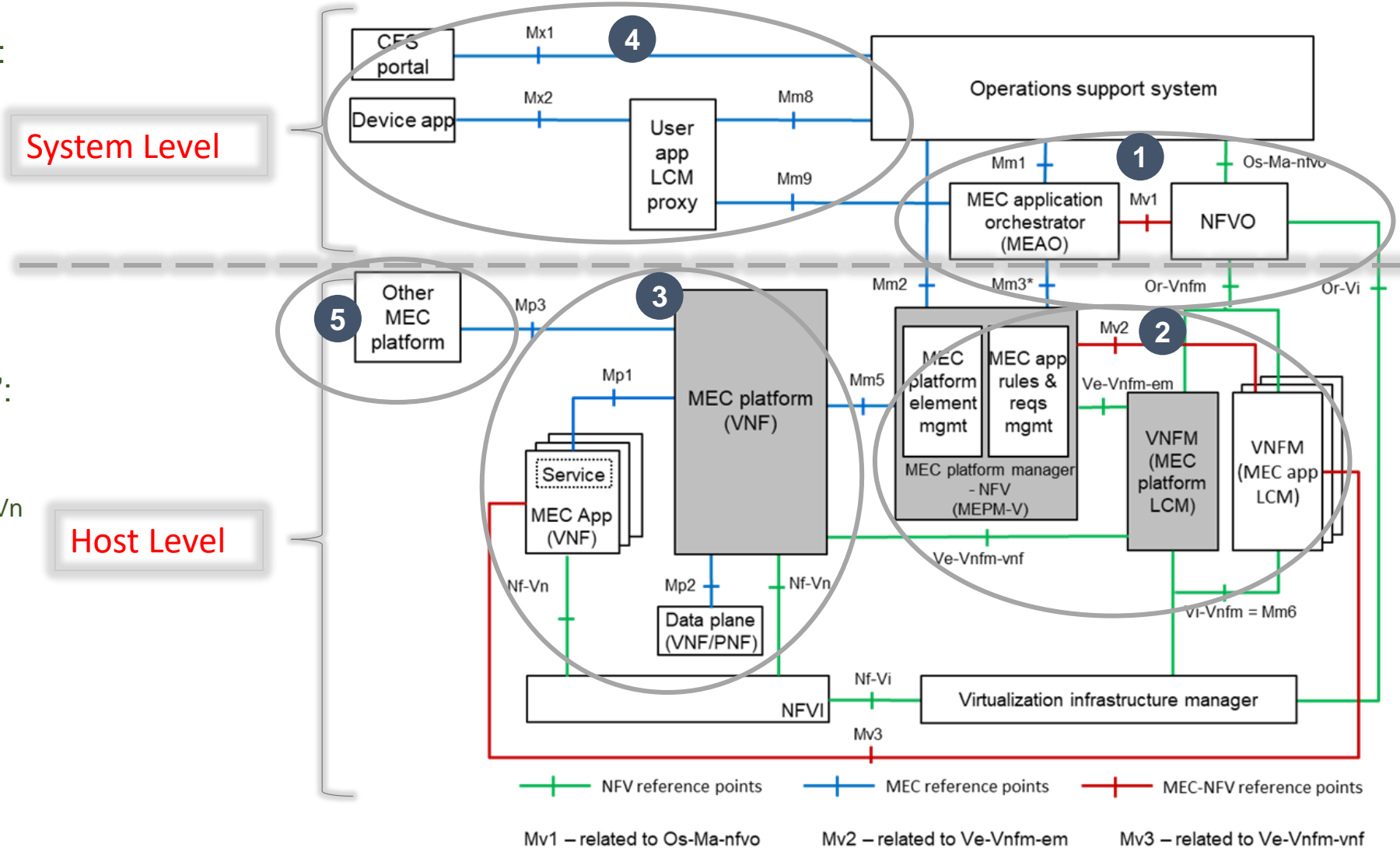
- **Step3. "Platform and Applications":**
  - ME Platform
  - ME Application
  - Ref Points: Mm5, Mp1, Mp2, Mv3, Nf-Vn

- **Step4. "External Interfaces"**
  - CFS Portal
  - UE Application
  - User App LCM Proxy
  - Ref Points: Mx1, Mx2, Mm8, Mm9

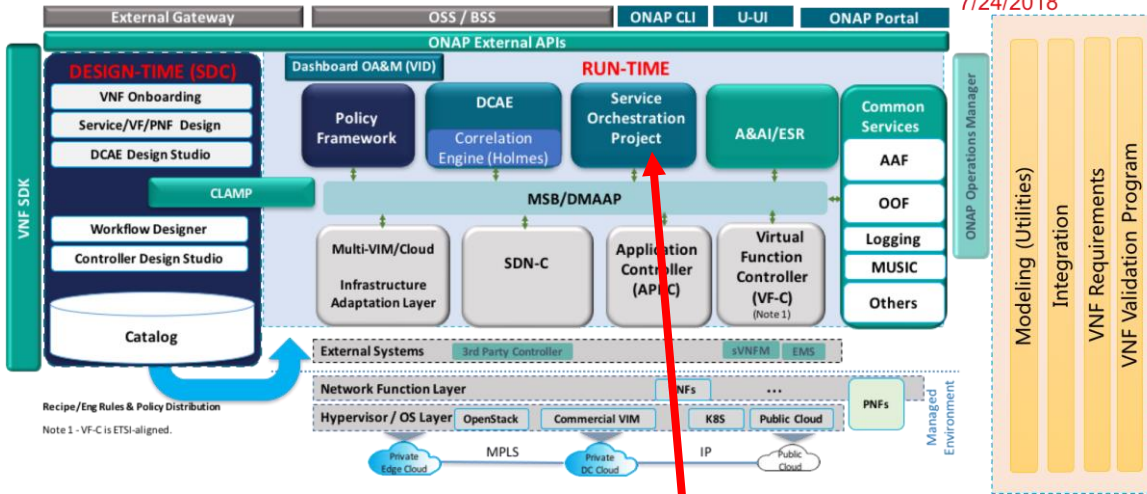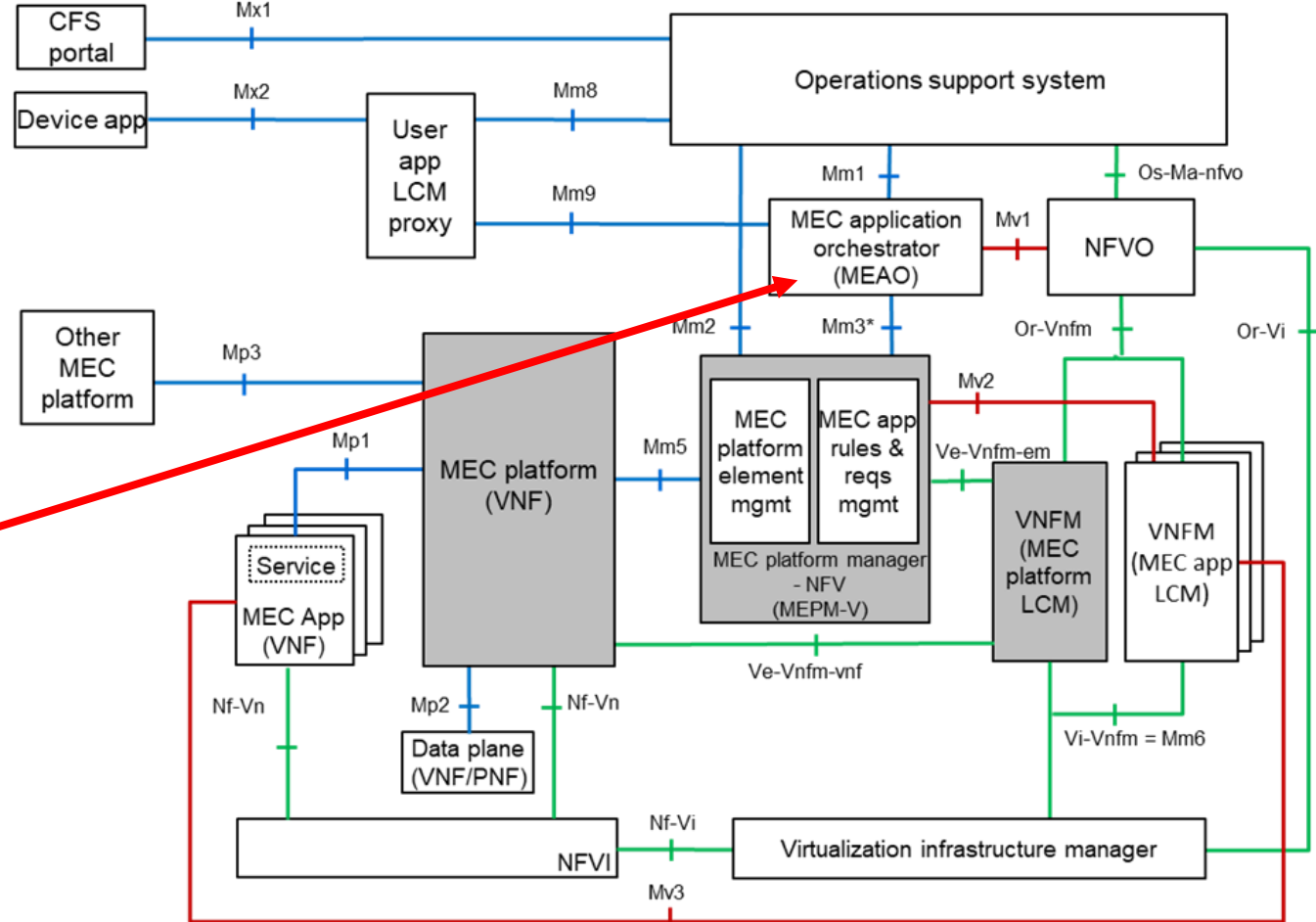- **Step5. "Network Edge":**
  - Ref Point: Mp3

ONAP SO for ETSI MEAO
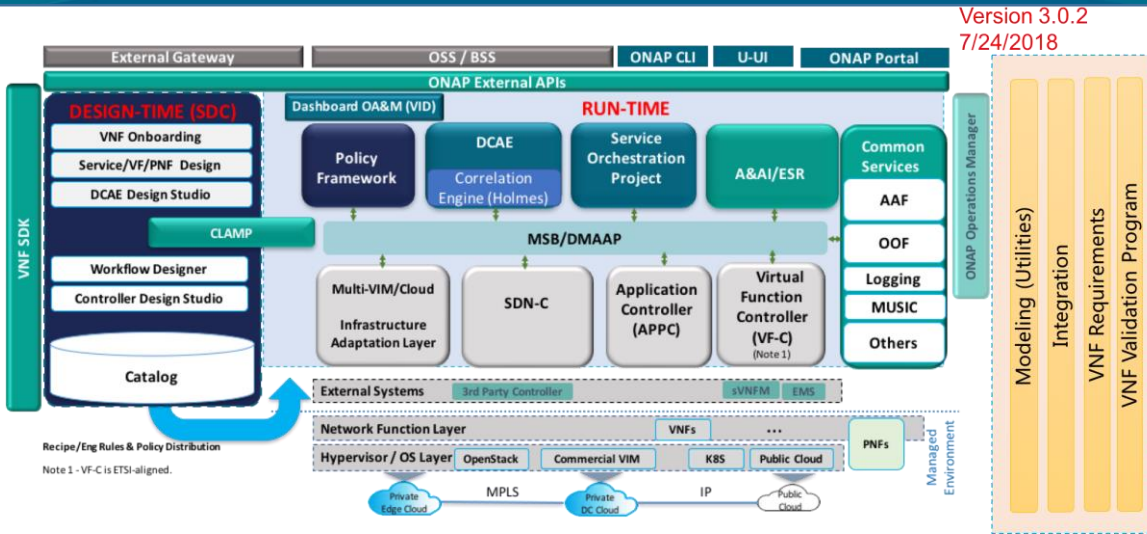

Support Distributed Cloud Application Orchestration

MEC – is a prune and refactored ONAP instance
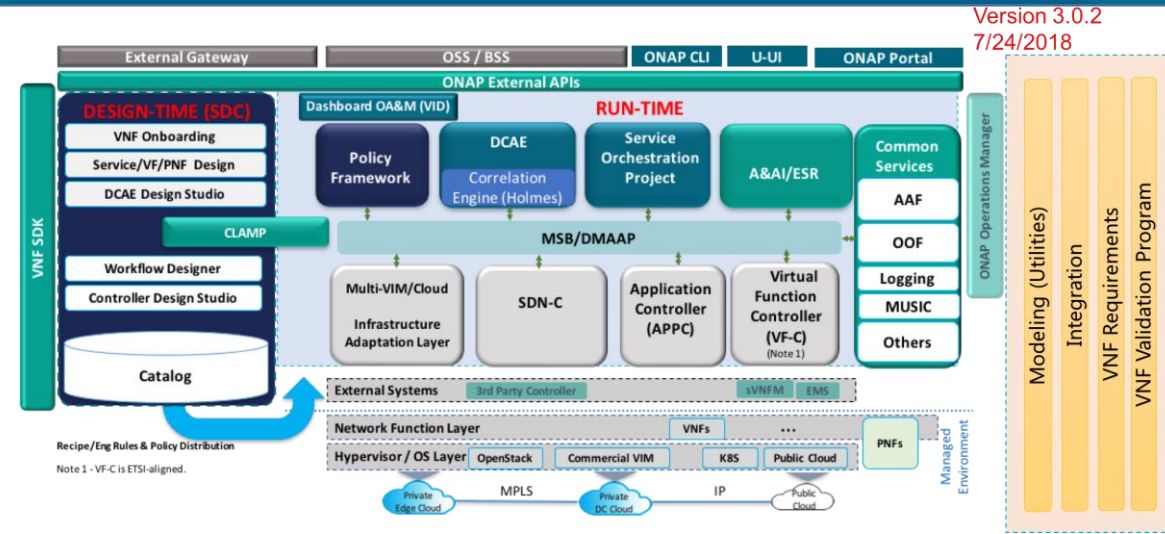
ONAP instance
(VNF LCM)
→ prune and refactoring →
Light ONAP Instance
(AF LCM)

Potential ONAP Edge Deployment Scenarios

MVP1

Central ONAP

Edge Infra
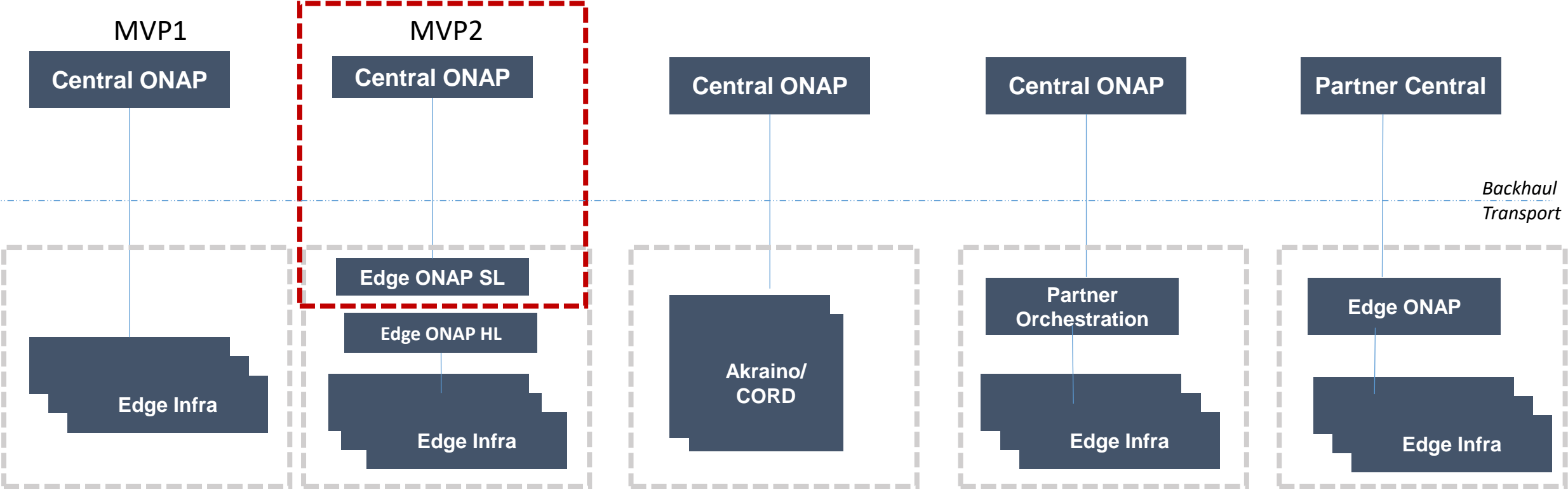
Edge without a local Orchestration Solution

MVP2

Central ONAP

Edge ONAP SL

Edge ONAP HL

Edge Infra

Edge with local ONAP Orchestration Solution

Central ONAP

Backhaul Transport

Akraino/ CORD

Edge with Akraino connected to Central ONAP

Central ONAP

Partner Orchestration

Edge Infra

Partner Edge with non-ONAP Orchestration Solution

Partner Central

Edge ONAP

Edge Infra

ONAP at Edge Connected to a Partner Central Orchestrator

MVP1 – current candidate
MVP2 – new proposal candidate

Central and Edge ONAP – not mean physical location of ONAP instance, but responsibility.

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An MVP View for ONAP at Edge and Central

OSS/BSS

ONAP Central (End to End Scope)

SDC (Application Package, VNF Package, NS Package)

VNFD

NSD

Orchestration
- RT Catalog
- WF Engine
- Adaptors

A&AI
- Full Deployment

Policy FW
- PAP
- PIP
- PDP

DCAE
- Full Deployment

External API
- SDNC
- Generic Controller

Edge Infra service Orchestration

Long term storage at central site based on pull model from Central

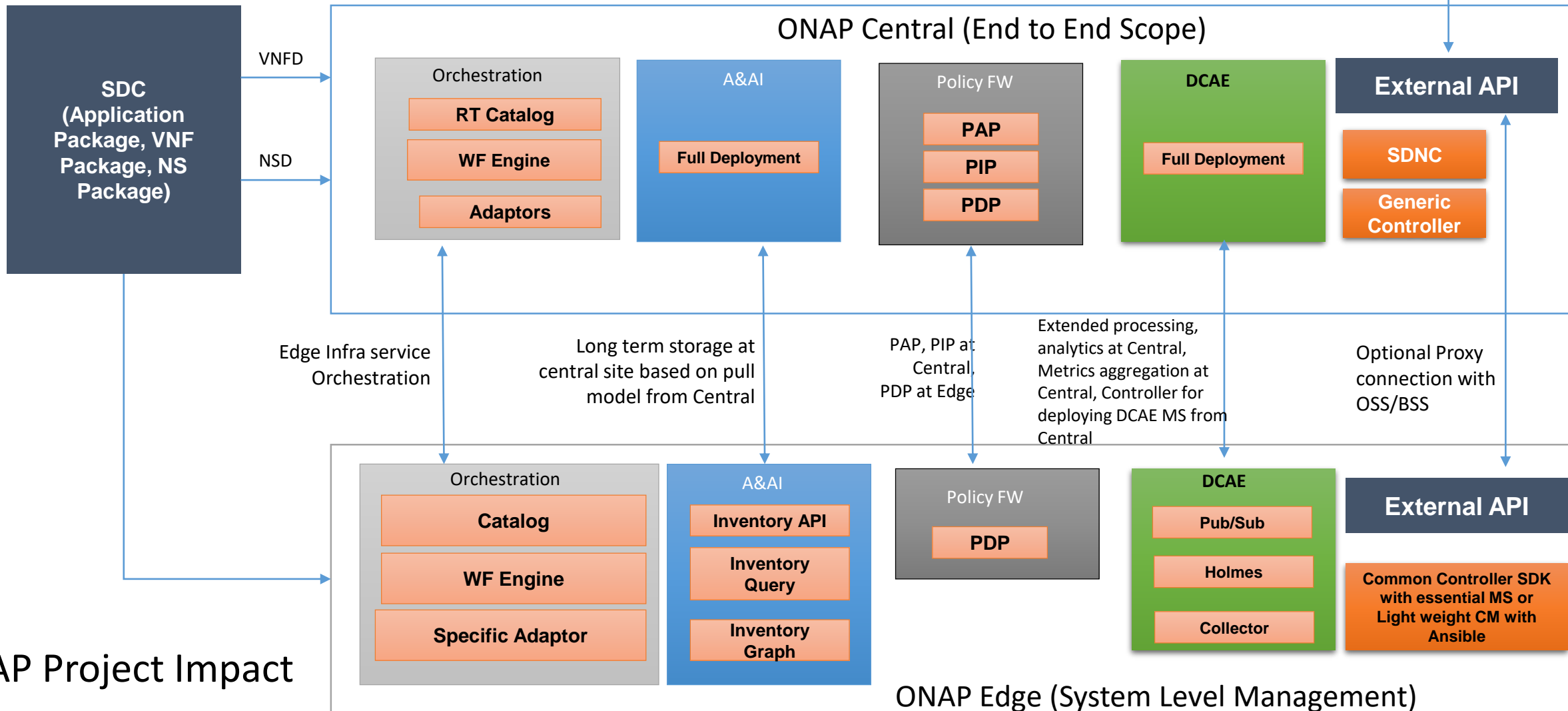PAP, PIP at Central, PDP at Edge

Extended processing, analytics at Central, Metrics aggregation at Central, Controller for deploying DCAE MS from Central

Optional Proxy connection with OSS/BSS

ONAP Project Impact

Orchestration
- Catalog
- WF Engine
- Specific Adaptor

A&AI
- Inventory API
- Inventory Query
- Inventory Graph

Policy FW
- PDP

DCAE
- Pub/Sub
- Holmes
- Collector

External API
- Common Controller SDK with essential MS or Light weight CM with Ansible

ONAP Edge (System Level Management)

Typical Management Functionalities at Edge for various NFV based Use Cases (General) – Reference ETSI MEC

System Level Management

Edge Orchestrator

- Inventory Management ⭐
- Catalog Management ⭐
- Application Placement and LCM Triggering ⭐
- NFVO ⭐

Application LCM Proxy

Interaction with OSS/BSS

License Management

Assurance (System Level) ⭐

Host Level Management

Platform Manager (MEPM-V)

- Platform Element Mgmnt
- Assurance (Host Level)

App LCM 🔶

Platform LCM 🔶

VIM

Mm3

Or-Vnfm

Vi-Vnfm

Mm2

← Scope of ONAP MVP. Can be aggregate for multiple Edges

↑ Scope of VNF vendor and infrastructure Provider

⭐ Available Functions in ONAP, but need adaptation for MEC.

🔶 Optionally placed at System Level as well

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Summary – What we are suggesting ?

- MEC recommends separation of System Level and Host Level Management

- Accommodate System Level Management Capabilities for Edge ONAP

- Enhance ONAP scope to handle Application Orchestration
  - Modelling constructs to support Application Descriptors
  - License Management of Applications
  - Application onboarding and instantiation workflows
  - End user dynamic application instantiation capability

Next Steps

- Wiki pages detailing (target: Dublin)
  - A study on the impact of Application Orchestration on ONAP
  - A study on aligning ONAP with MEC Architecture

- A use case proposal for edge application orchestration through ONAP (target: Dublin)