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OPEN NETWORK AUTOMATION PLATFORM

# ONAP R8 Honolulu PoC Requirement

- Support for Vertical Industry, by CMCC and Huawei

# Support for Vertical Industry

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**Executive Summary** – Vertical Industry is one of the greatest potential 5G markets. Unlike traditional 2C scenarios, where the consumers of OSS are CSP internal operation staff or BSS system, in 5G area operators need to provide O&M capabilities for potentially multiple vertical industries consumers. This requirement propose to help operators to manage multiple vertical industry networks using ONAP. In R8, it will contain the following scenarios: a) One centralized operator ONAP only manages multiple vertical industry networks established by operators, and b) One centralized operator ONAP manages both vertical industry networks and traditional mobile networks (e.g. slicing).

**Business Impact** - Vertical industry networks contain various combinations of resources, such as VNFs, PNFs, and service instances. Providing one unified OM platform is the most efficient way to satisfy various vertical industry's requirements. ONAP can be a great automation management platform for 5G vertical industry.

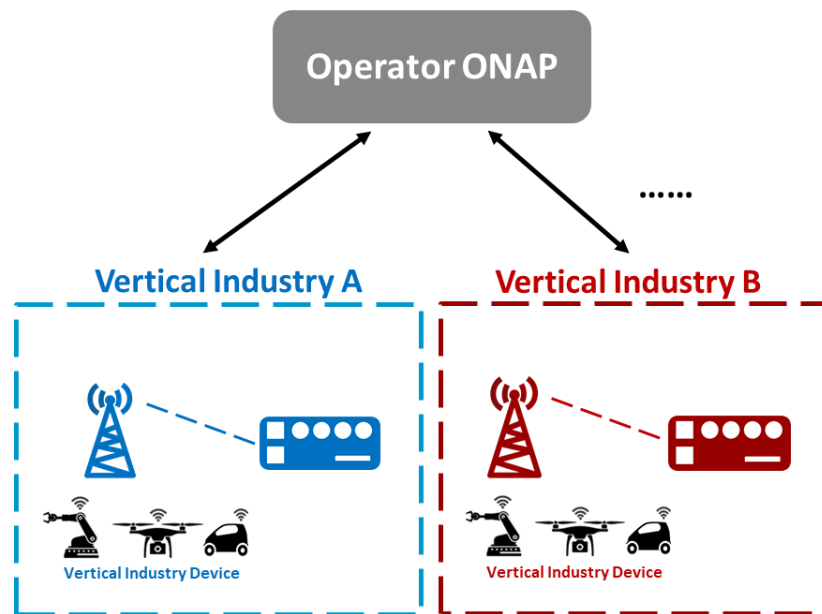
**Business Markets** - All operators and service providers that want to use ONAP to support the management of vertical industry networks.

**Funding/Financial Impacts** - Reduce the operation expense while providing Network O&M service for different vertical industries.

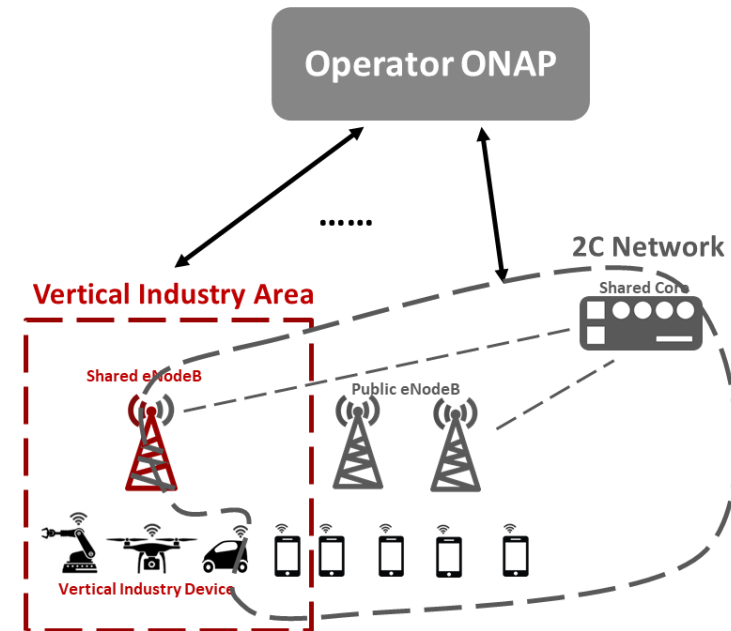
**Organization Mgmt, Sales Strategies** - There is no additional organizational management or sales strategies for this use case outside of a service providers "normal" ONAP deployment and its attendant organizational resources from a service provider.

# Support for Vertical Industry Scenarios

- ONAP supporting for vertical industry has two typical scenarios:
  - Scenario A: One centralized operator ONAP only manages multiple vertical industry networks. Some medium/large-sized verticals may want operator to help them build separate vertical industry networks. Operator ONAP provides centralized O&M capabilities.
  - Scenario B: One centralized operator ONAP manages both vertical industry networks and traditional mobile networks. Some small/medium-sized verticals may rely on operators to deploy necessary network devices in their vertical area and share some network resource with operator network (2C Network). Operator ONAP needs capabilities to manage shared resources and provide O&M services for both.



Scenario A



Scenario B

# Requirement in R8 (Honolulu)

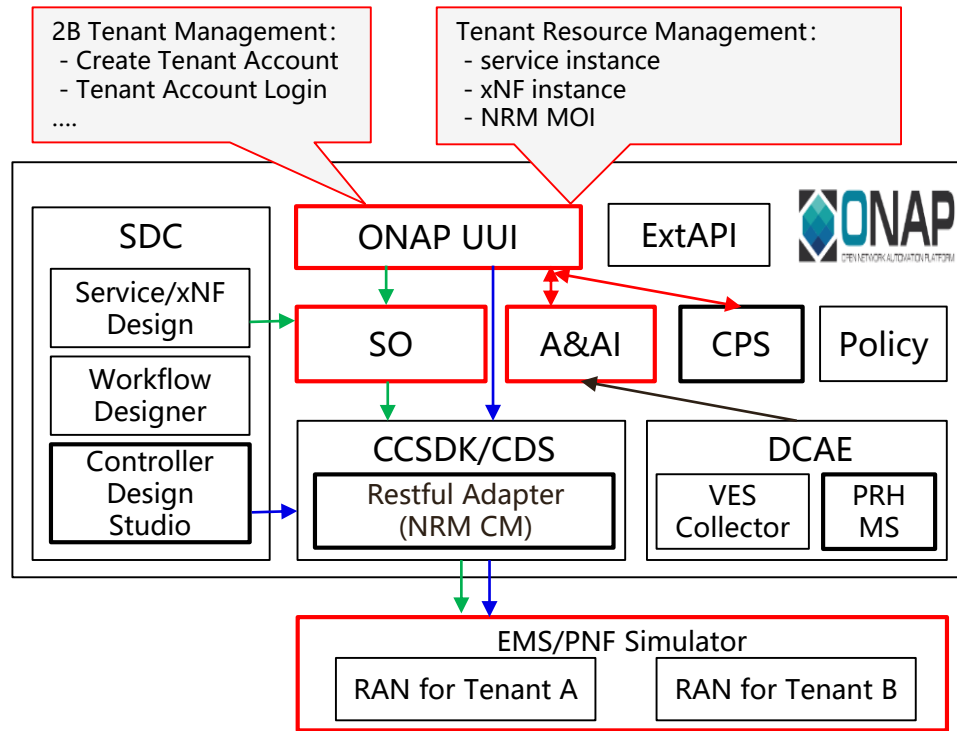
- Tenant management and isolation for Vertical Industry
  - Enhance A&AI Schema for vertical industry tenant, including basic tenant profile:
    - Add schemas for vertical industry tenant profile. Those schemas describe the base info about vertical industry tenant:
      - ◆ vertical industry tenant unique ID info
      - ◆ vertical industry description info
      - ◆ vertical industry location info
      - ◆ relation between resource and vertical industry tenant
    - Enhance the schema for PNF. The PNF schema should include the info which can be used to map the PNF resource to some tenant account (e.g. location info).
  - Isolate resources from different vertical industry tenants. Associate the isolated resources to the corresponding vertical industry tenants.
  - Implement permission control for different vertical industry tenants by leveraging Multi-tenancy in ONAP. For example, in Scenario A, PNF is owned and managed by operator, but vertical industry tenant also has permission to access PNF resource data.

# Requirement in R8 (Honolulu)

- Provide centralized user interface in UUI for different vertical industry tenants:
  - Allow vertical industry to create tenant account and query/update tenant profile info.
  - Allow vertical industry to associate the isolated resource to the corresponding tenant profile.
  - Allow vertical industry tenant to access their own data, including resources and necessary configurations.
- Enhance service instantiation procedure with specified tenant and necessary vertical industry area (aka. specified locations).
  - Adding necessary building blocks or workflows for service instantiation in ONAP SO.

# PoC demo in R8 (Honolulu)

## Support for vertical industry scenario A in R8



- PNF PnP (No impact)
- PNF Instantiation (Enhanced)
- NRM CM (No impact)
- Tenant Management (New added)

### Pre-conditions:

- Create two tenant accounts for vertical industry A and vertical industry B.
- Design and publish Service/PNF/Workflow for vertical industry tenants.
- Design and publish corresponding CDS Blueprint.

### Steps:

1. Two vertical industry tenants query the current resource instance separately (None).
2. Operator activate and complete PNF PnP/Instantiation for vertical industry tenant A. During the process, PNF1 will be associated to the tenant account of vertical industry A based on location info automatically.
3. Vertical industry tenant A query the current service/PNF instance (pnf-1).
4. Operator activate and complete PNF PnP/Instantiation for vertical industry tenant B. During the process, PNF2 will be associated to the tenant account of vertical industry B based on location info automatically.
5. Vertical industry tenant B query the current service/PNF instance (pnf-2).
6. Operator implement the NRM configuration for PNF1 and PNF2 (e.g. gNB Function & NRCcell).
7. Vertical industry tenant A query the current gNB & Cell MOI info (gNB & Cell MOI info in pnf-1).
8. Vertical industry tenant B query the current gNB & Cell MOI info (gNB & Cell MOI info in pnf-2).



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**Thank You**