ONAP 5G Use cases and Network Slicing Demo
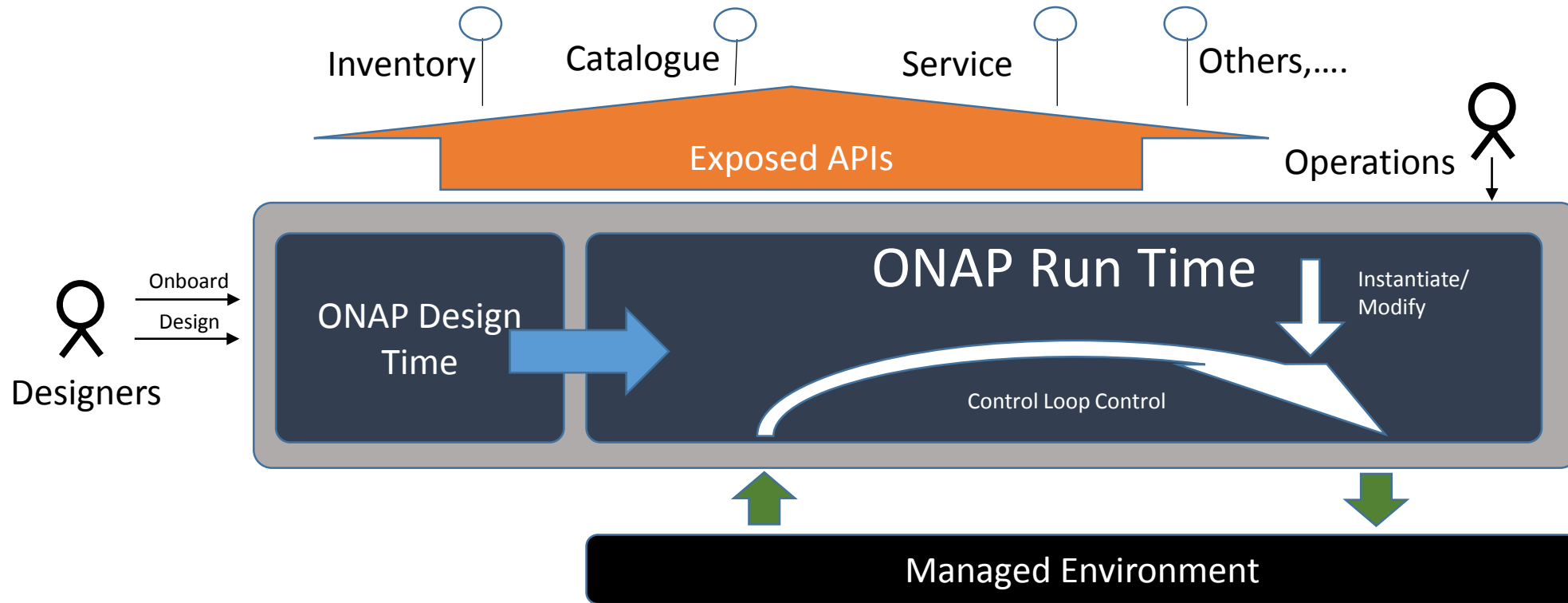
Presenter: Wendy Zhou

Ericsson MNEA OSS portfolio manager

Introduction

Inventory **Catalogue** **Service** **Others,....**

Exposed APIs

Operations

Designers

Onboard
Design

ONAP Design Time

ONAP Run Time

Instantiate/ Modify

Control Loop Control

Managed Environment

ONAP provides an automation platform for managing services and resources throughout their entire life cycle.
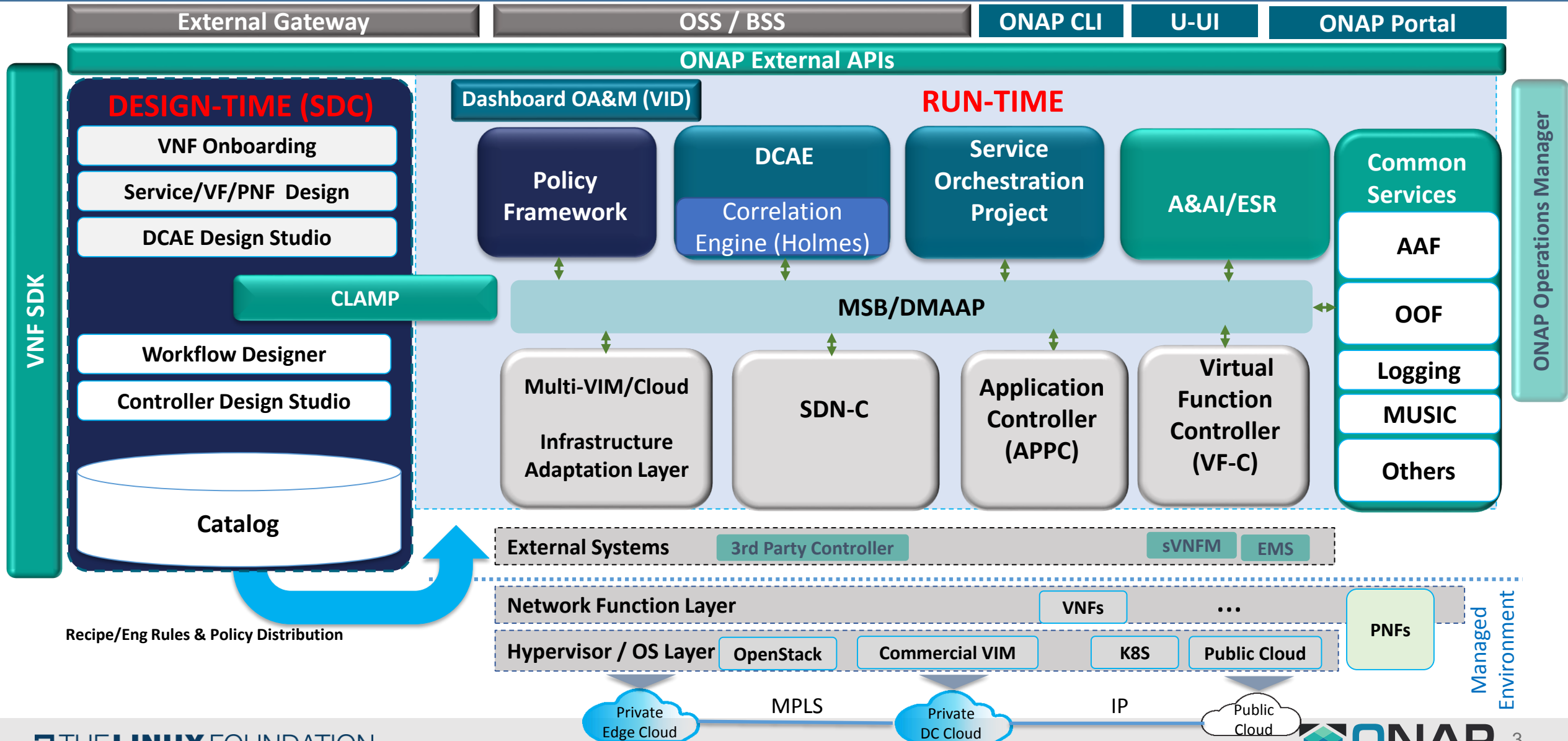
It provides a reference functional architecture

It provides a reference Component Definition & Interfaces
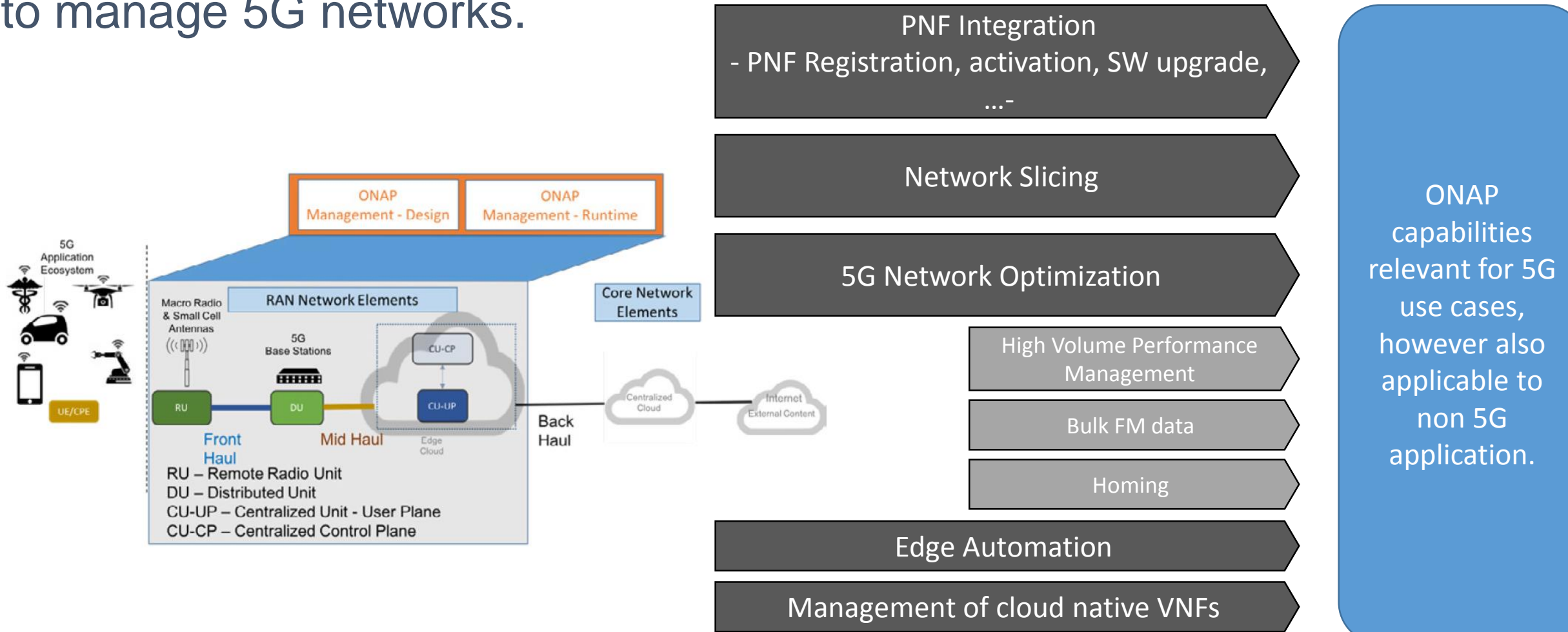
It provides reference source code

It provides requirements on the managed V/P NFs

The Architecture

External Gateway   **OSS / BSS**   **ONAP CLI**   **U-UI**   **ONAP Portal**

ONAP External APIs

VNF SDK

DESIGN-TIME (SDC)

- **VNF Onboarding**
- **Service/VF/PNF Design**
- **DCAE Design Studio**

CLAMP

- **Workflow Designer**
- **Controller Design Studio**

Catalog

Dashboard OA&M (VID)

RUN-TIME

Policy Framework

DCAE
Correlation Engine (Holmes)

Service Orchestration Project

A&AI/ESR

Common Services

- **AAF**
- **OOF**
- **Logging**
- **MUSIC**
- **Others**

MSB/DMAAP

Multi-VIM/Cloud
Infrastructure Adaptation Layer

SDN-C

Application Controller (APPC)

Virtual Function Controller (VF-C)

ONAP Operations Manager

External Systems   **3rd Party Controller**   **sVNFM**   **EMS**

Recipe/Eng Rules & Policy Distribution

Network Function Layer   **VNFs**   ...   **PNFs**

Hypervisor / OS Layer   **OpenStack**   **Commercial VIM**   **K8S**   **Public Cloud**

Managed Environment

Private Edge Cloud   MPLS   Private DC Cloud   IP   Public Cloud

5G UseCase/BluePrints

As an automation platform ONAP is evolving to support the capabilities to manage 5G networks.

PNF Integration
- PNF Registration, activation, SW upgrade, ...-

Network Slicing

5G Network Optimization

High Volume Performance Management

Bulk FM data

Homing

Edge Automation

Management of cloud native VNFs

ONAP capabilities relevant for 5G use cases, however also applicable to non 5G application.

Today we have a demo Video of ONAP Network Slicing

- Joint Collaboration with ATT and Ericsson
- Illustrates establishing network slices with two different quality of experience
- The demo uses real radio.
- Leverages the ONAP allocated resource concept for the equipment that is shared between slices.

Network Slicing with ONAP LCM PoC

A world's first!

ONAP based Network Slicing PoC
Enterprise use case

ACME, Inc. wants to provide 2 levels of Guaranteed Bandwidth (GB) MBB service for their employees at their premises in addition to the current Best Effort (BE) mobile service it's employees currently receive.
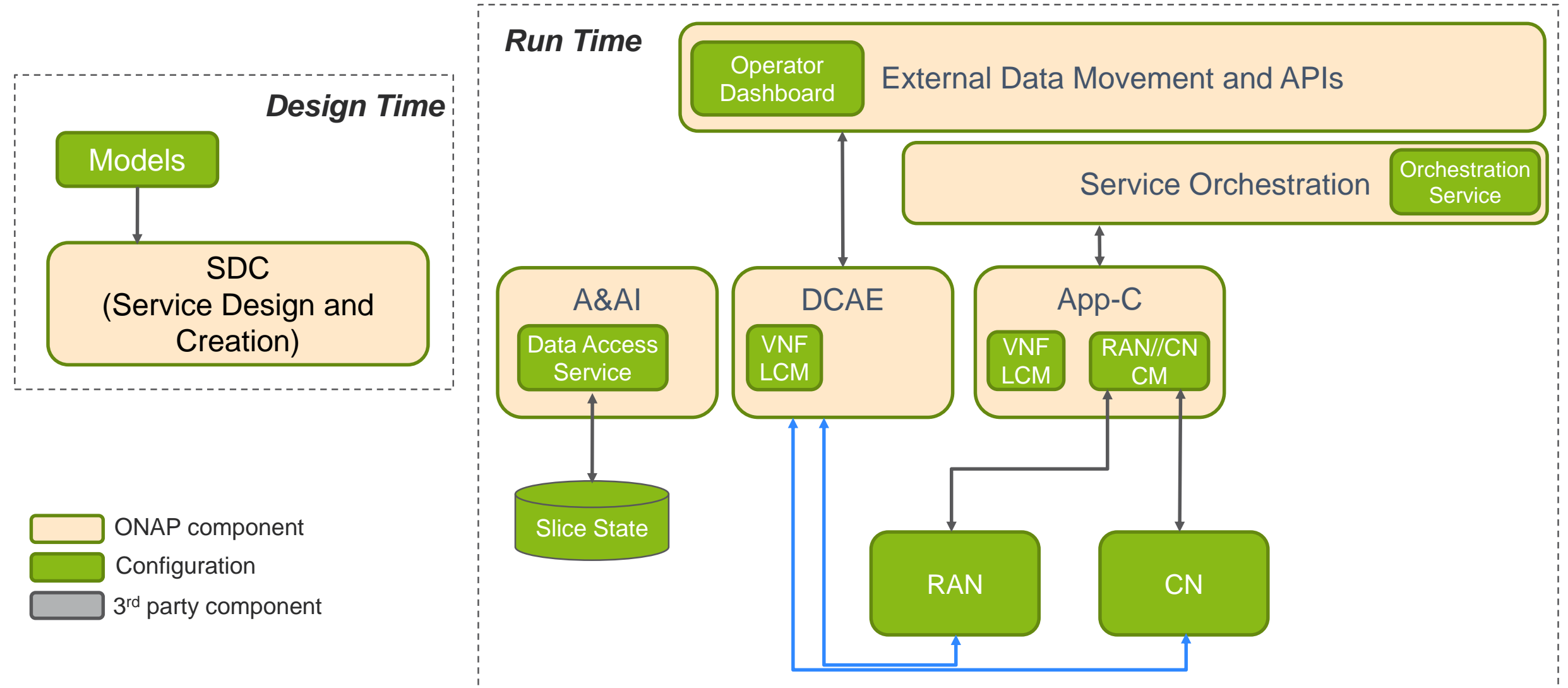
RAN

Core

MBB Core

ACME Inc coverage
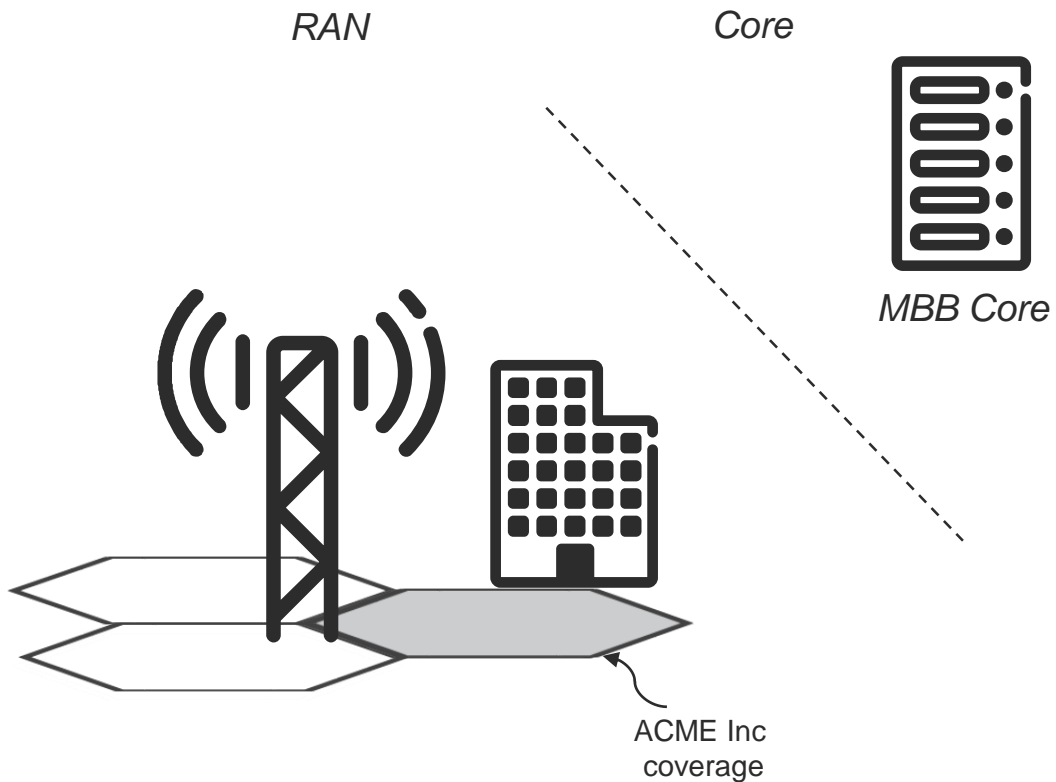
Activation & Modification

a. Activate platinum level GB MBB service at the ACME, Inc. head office

b. Create the new service Core (the vEPG)

c. Modify existing elements including the Core vMME and the serving RBS

d. Repeat b & c for the silver level Guaranteed Bandwidth MBB service

Note: A MBB service for other users (i.e., non ACME, Inc. employees) will already exist as a precondition to this PoC.
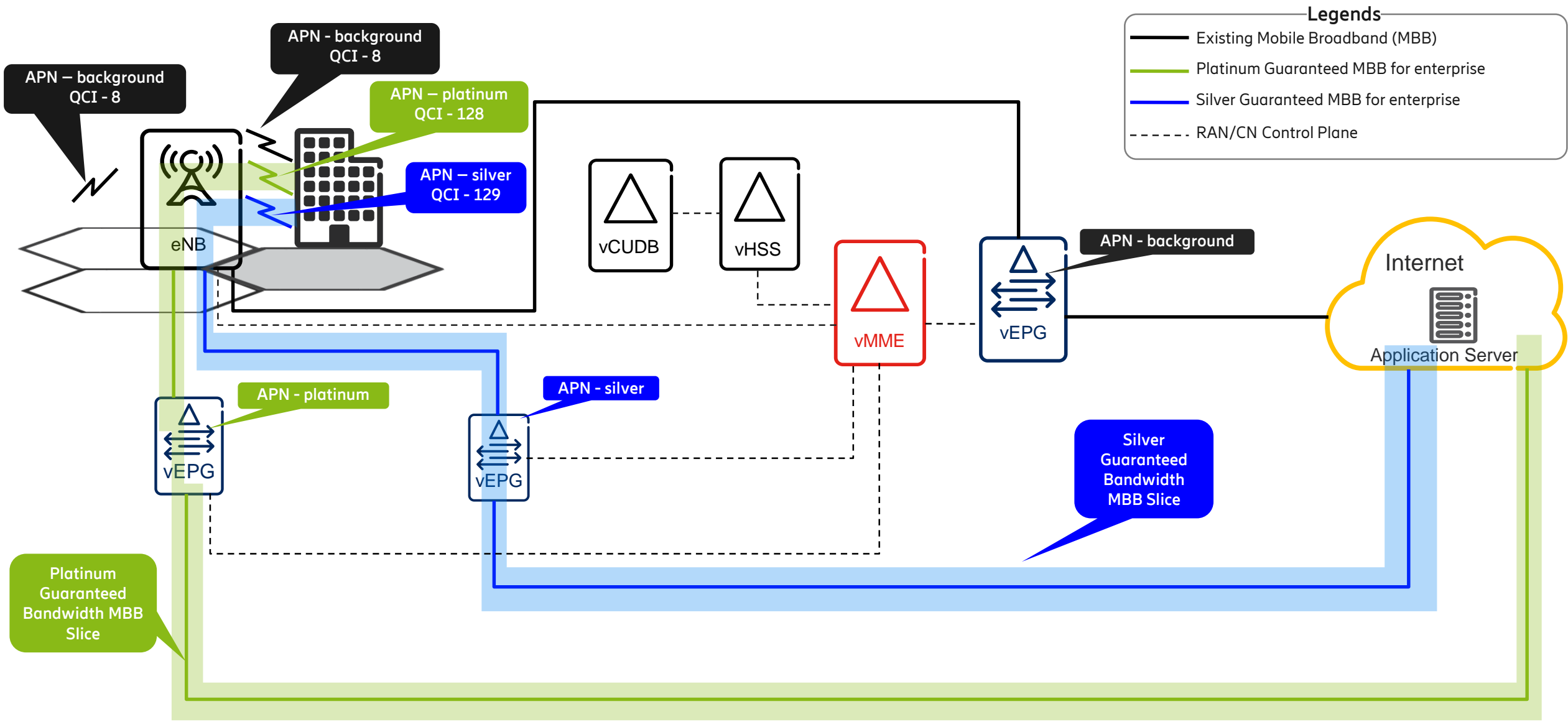
ONAP based Network Slicing PoC
ONAP Architecture

Design Time

Models

SDC
(Service Design and Creation)

Run Time

Operator Dashboard

External Data Movement and APIs

Service Orchestration — Orchestration Service

A&AI
Data Access Service

DCAE
VNF LCM

App-C
VNF LCM | RAN//CN CM

Slice State

RAN

CN

ONAP component
Configuration
3rd party component

ONAP based Network Slicing PoC
Network Architecture

AT&T Atlanta Lab Setup
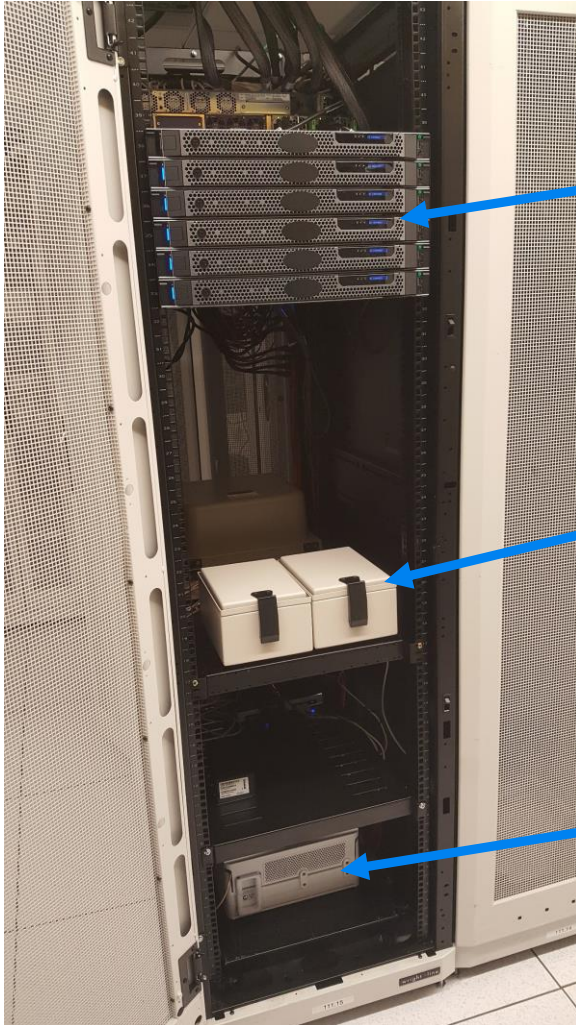

6 Dell R640's hosting ONAP & the Packet Core

4 Samsung S9's inside 3 test chambers

1 RBS6601

1 Radio 4415

Front Cabinet View

Back Cabinet View

Remote demo execution user

Windows Server

Galaxy S9s connected via Android USB for remote control

Network Slicing
with ONAP LCM PoC

A world's first!