Introduction

This document provides an overview of the Public Cloud Edge Interface (PCEI) blueprint as well as an overview of key features and implementations of PCEI in Akraino Release 5.

Overview

Akraino Blueprint: Public Cloud Edge Interface (PCEI)

The purpose of Public Cloud Edge Interface (PCEI) Blueprint is to develop a **set of open APIs**, **orchestration functionalities** and **edge capabilities** for enabling Multi-Domain Interworking across the Operator Network Edge, the Public Cloud Core and Edge, the 3rd-Party Edge as well as the underlying infrastructure such as Data Centers, Compute Hardware and Networks.

Interfaces between the functional domains are shown in the figure below:

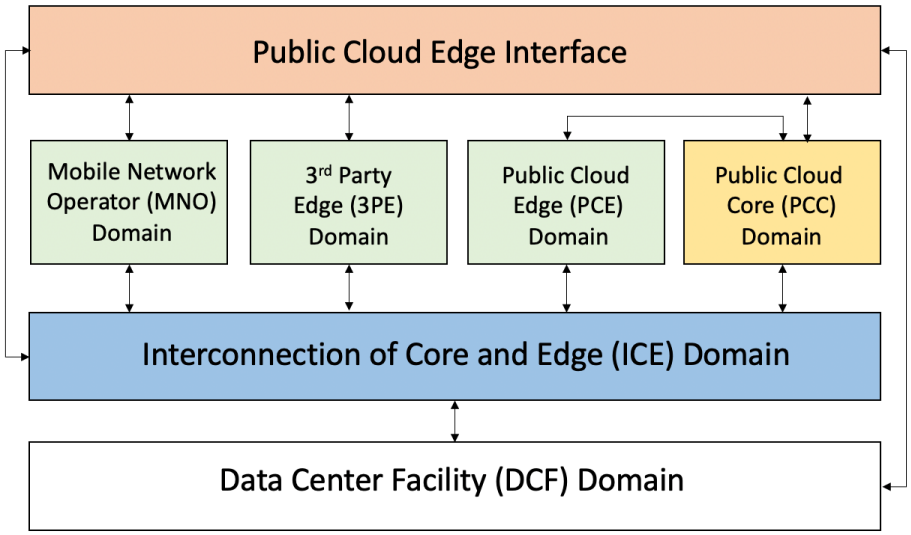


Figure 1. PCEI Functional Domains.

The PCEI Reference Architecture is shown in the figure below. For the full description of the PCEI Reference Architecture please refer to the PCEI Architecture Document.

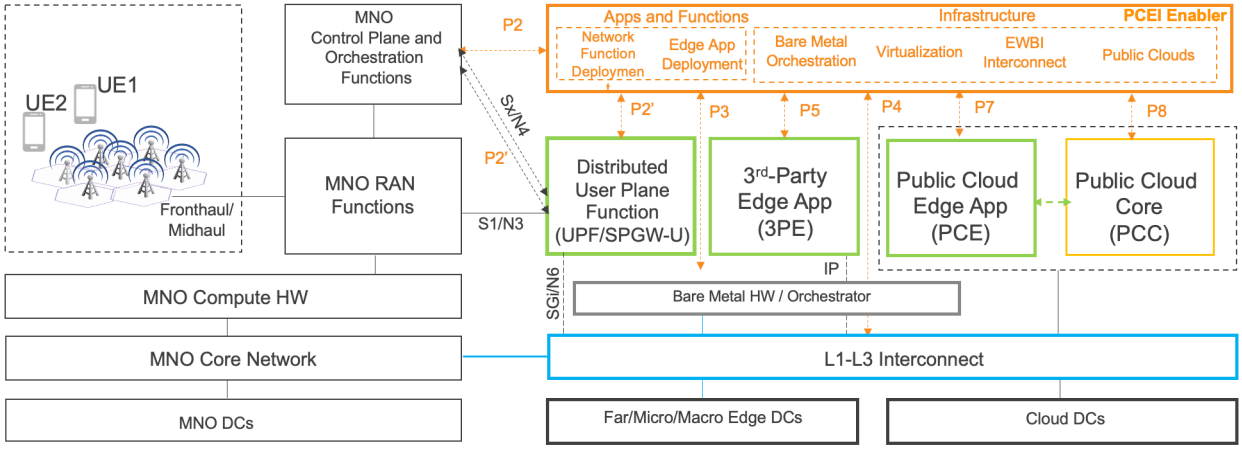


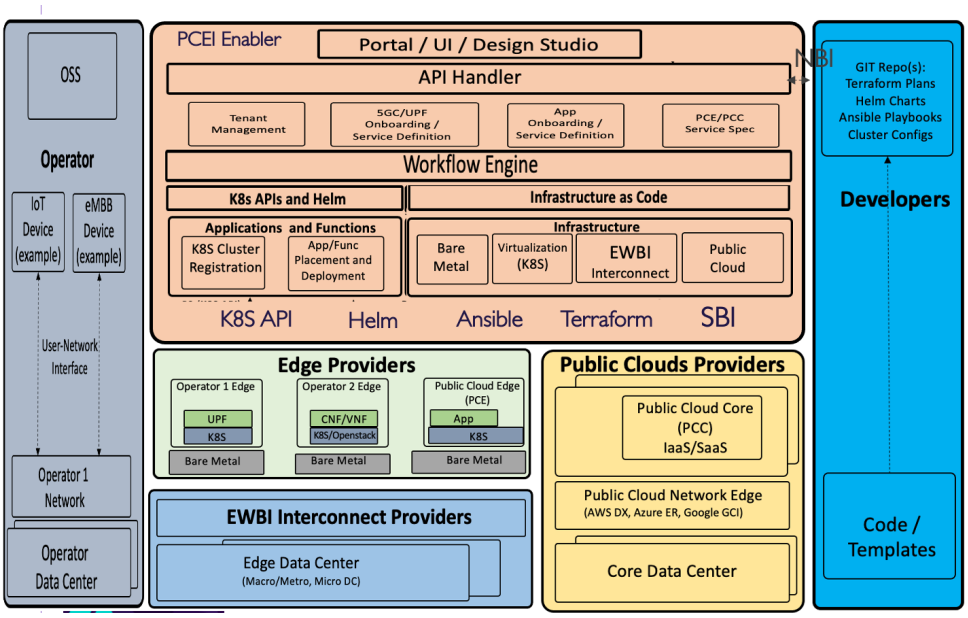
Figure 2. PCEI Reference Architecture.

PCEI in Akraino R6

Public Cloud Edge Interface (PCEI) is implemented based on Edge Multi-Cluster Orchestrator (EMCO) and Controller Design Studio (CDS).

Key features and implementations in Akraino Release 6:

- ❑ **NBI APIs**
  - ❑ **GIT Integration**
  - ❑ **Dynamic Edge Cluster Registration**
  - ❑ **Dynamic App Helm Chart Onboarding**
  - ❑ **Automatic creation of Service Instance in EMCO and deployment of Apps**
  - ❑ **Automatic Terraform Plan Execution**
  - ❑ **Ansible Playbook Execution - NEW**
- ❑ **Workflow Engine**
  - ❑ **Camunda - NEW**
- ❑ **Integrated Terraform Plan Executor**
  - ❑ **Azure (PCC)**
  - ❑ **AWS (PCC)**
  - ❑ **Equinix Fabric (Interconnect)**
  - ❑ **Equinix Metal (Bare Metal Cloud)**
  - ❑ **Openstack (3PE)**
- ❑ **Integrated Ansible Playbook Executor**
  - ❑ **Kubernetes deployment on bare metal (Equinix) - NEW**
- ❑ **Equinix Fabric Interconnect**
- ❑ **Equinix Metal deployment**
- ❑ **Multi-Public Cloud Core (PCC) Orchestration**
- ❑ **Kubernetes Edge**
- ❑ **Openstack Edge**
- ❑ **ETSI MEC Location API 2.1.1 - NEW**
- ❑ **Cloud Native 5G Core and UPF Deployment (in progress)**



- Open-Source Projects:
  - EMCO (Edge Multi Cluster Orchestrator)
  - Controller Design Studio (CDS)
  - Camunda
- Open-Source Technologies
  - Kubernetes
  - Openstack
  - Helm
  - Terraform
  - Ansible

Figure 3. PCEI R6 Implementation.

For more information:

https://wiki.akraino.org/x/Qi0wAw