COMAC
Converged Multi Access & Core

Oğuz Sunay, Chief Architect, ONF

Outline

- COMAC – What is it?
- Why Multi Access? Why Convergence? Why now?
- Achieving Convergence
  - Disaggregate first
  - Integrate with programmable access
  - Enable co-existence
  - Re-aggregate next
    - User plane convergence
    - Control plane convergence

COMAC

Scope

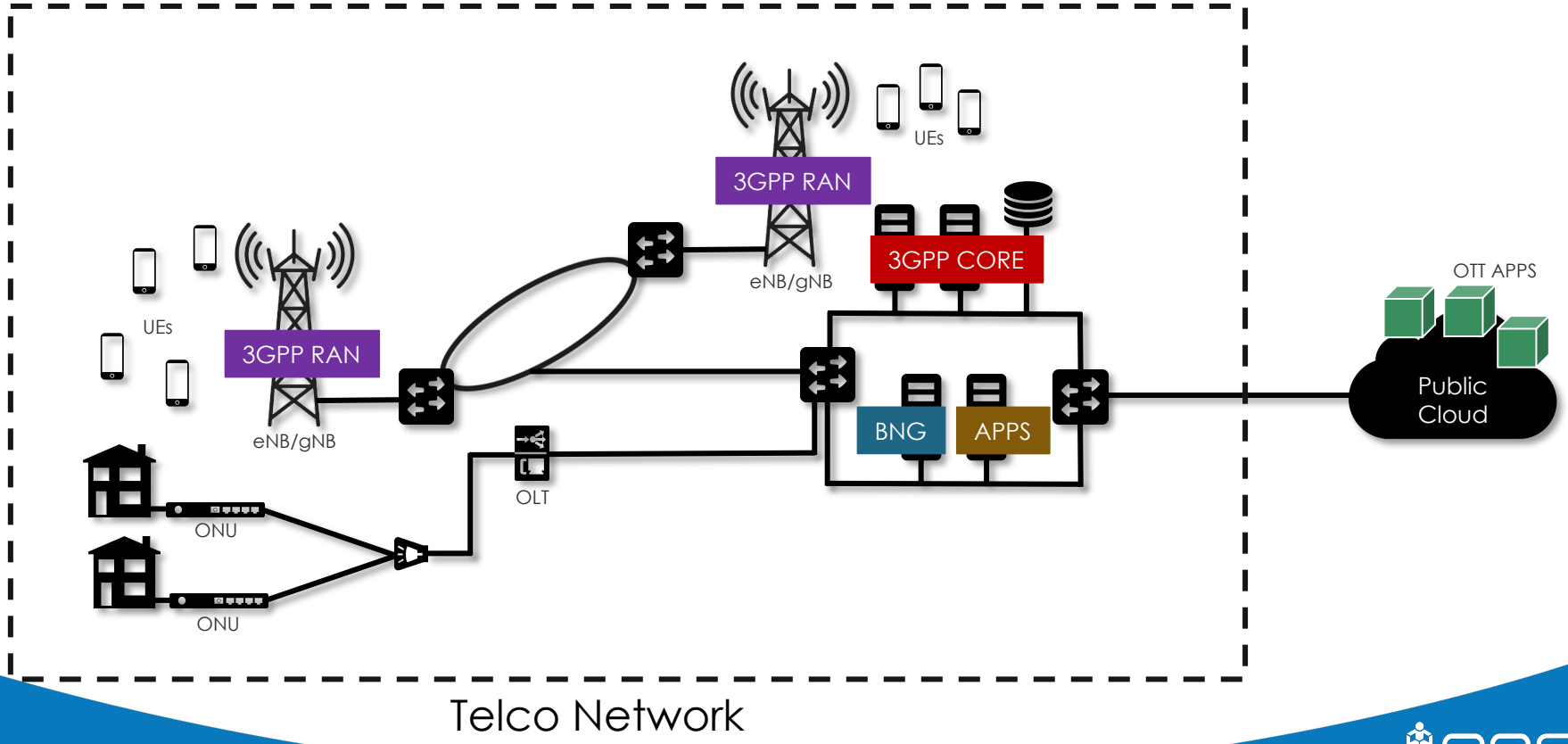
- Develop a modular, cost-efficient platform and components with well-defined interfaces to enable access and core networks, including
  - A streamlined, simple and cost-efficient implementation of 3GPP cellular core,
  - A converged user plane function (CUPF) that unifies user plane components of fixed broadband network gateway, 3GPP cellular core and virtualized 3GPP cellular radio access that would be hosted at the multi-access edge cloud,
  - A suite of control plane functions/applications that would intelligently be engaged to ensure proper, and standards compliant and programmatic control of CUPF,
  - Access and Core Controllers that intelligently and programmatically map CUPF with the corresponding suite of control plane applications.

Supporting Operators

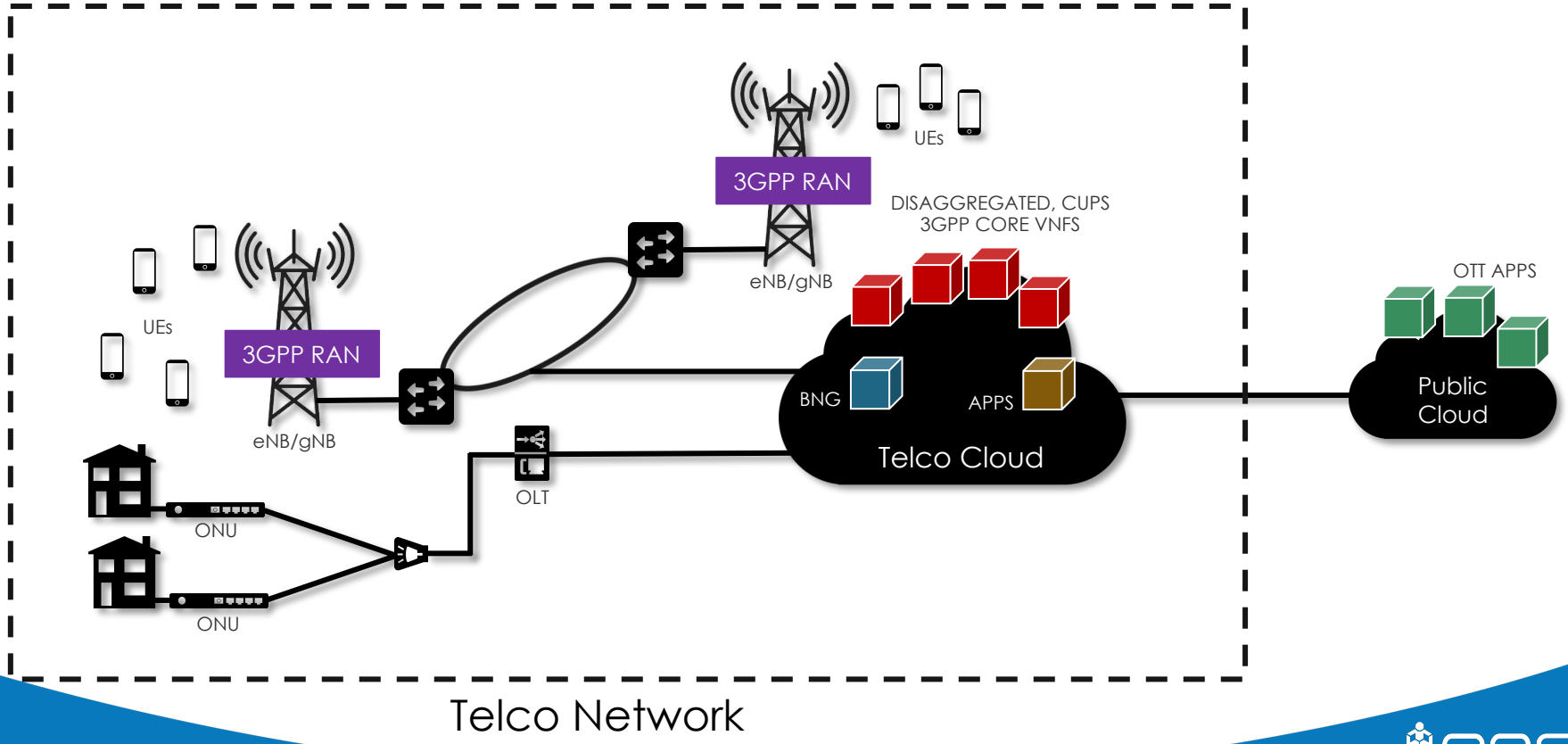
Big Picture: Edge Cloud

Why Multi Access? Why Convergence?

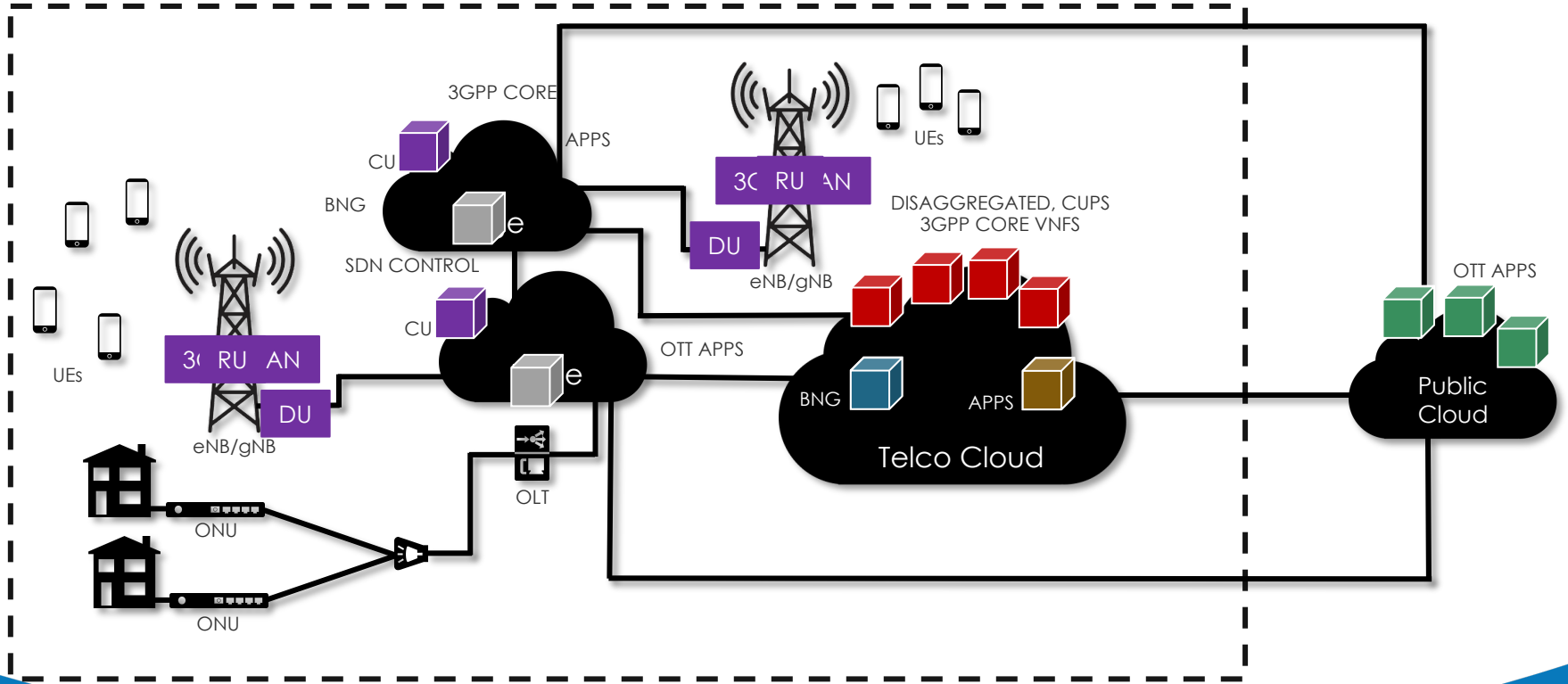
Evolution Towards the Edge



Evolution Towards the Edge



Evolution Towards the Edge

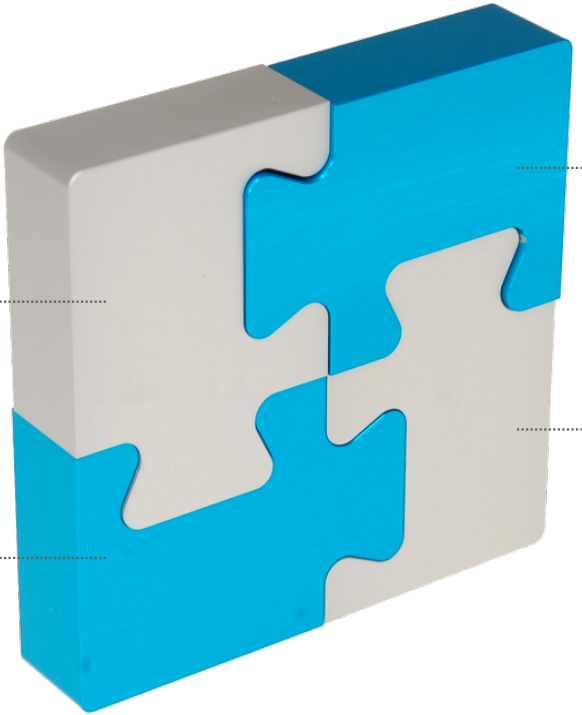


COMAC Project

Pillars, Components, and Evolution

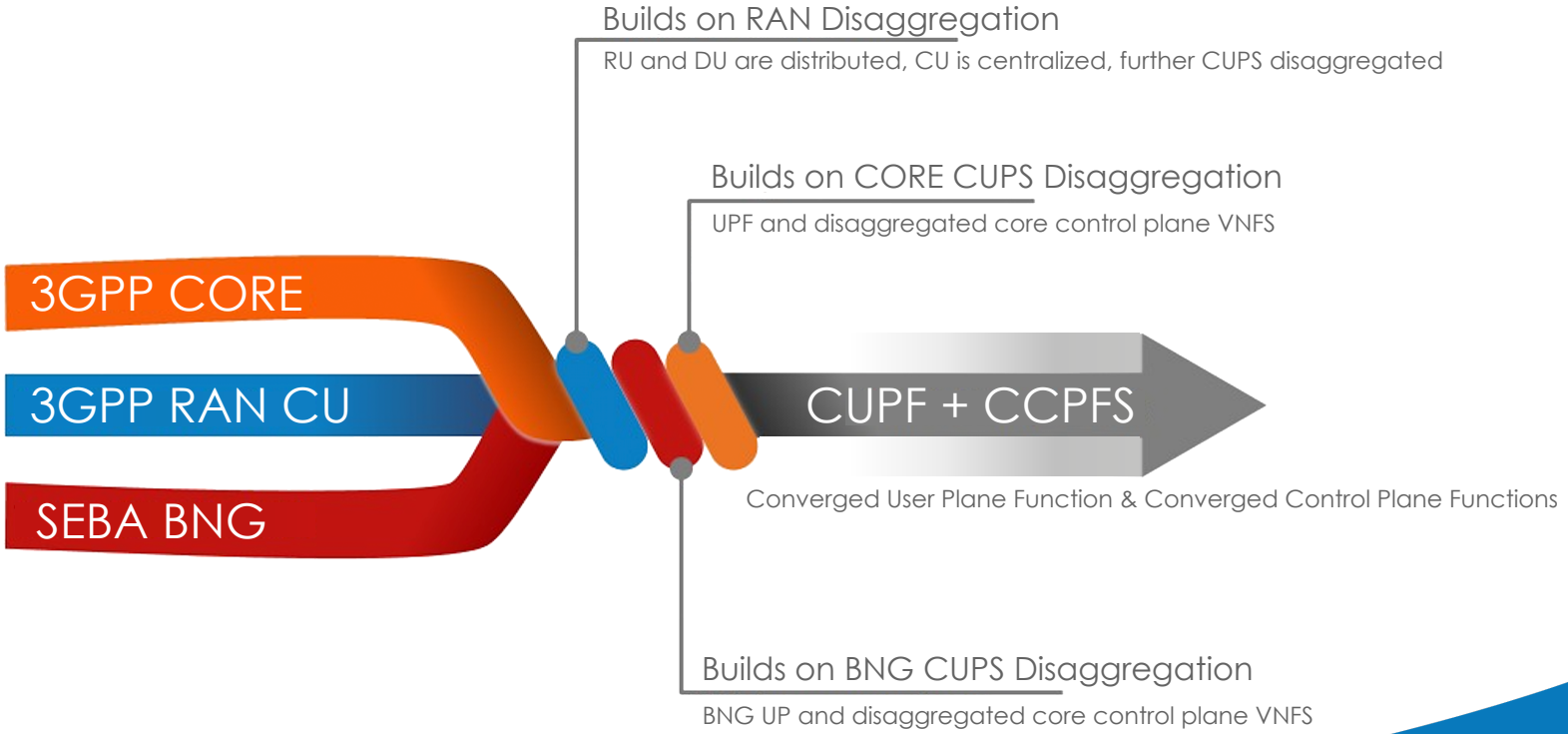
COMAC Pillars

Why is Convergence Relevant Now?



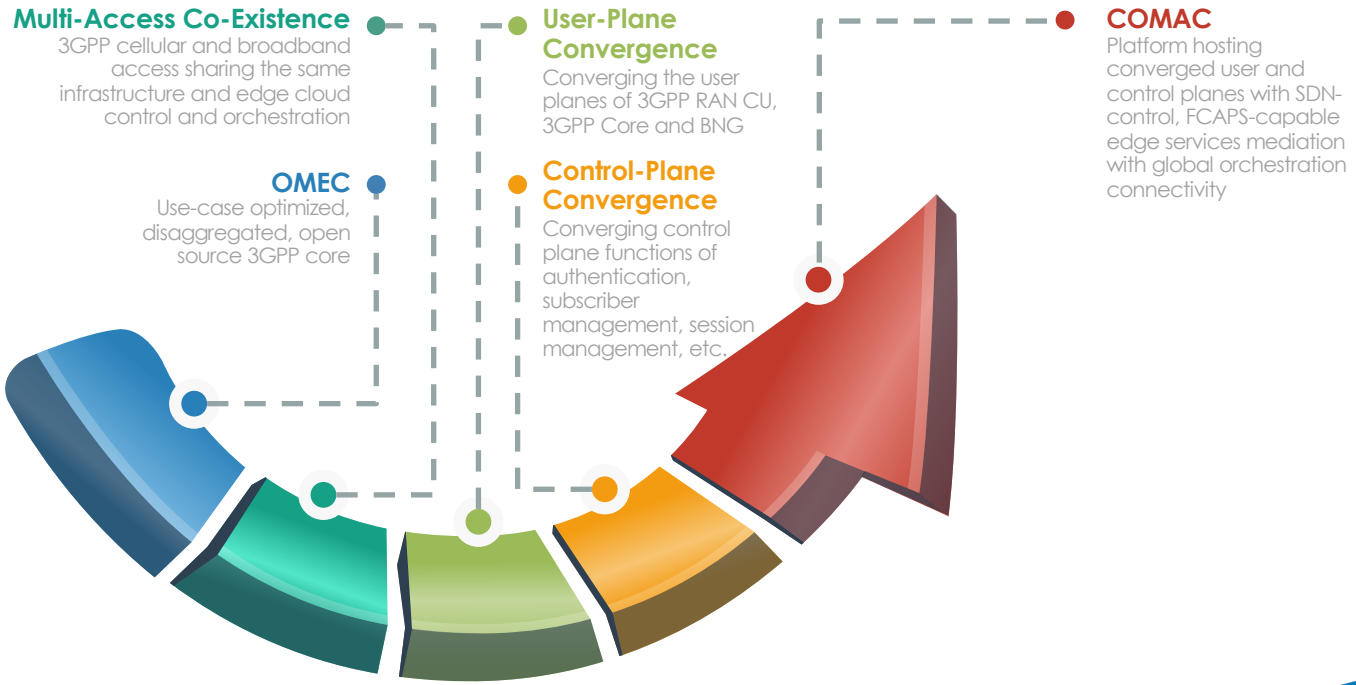
COMAC Pillars

Why is Convergence Relevant Now?



COMAC Evolution

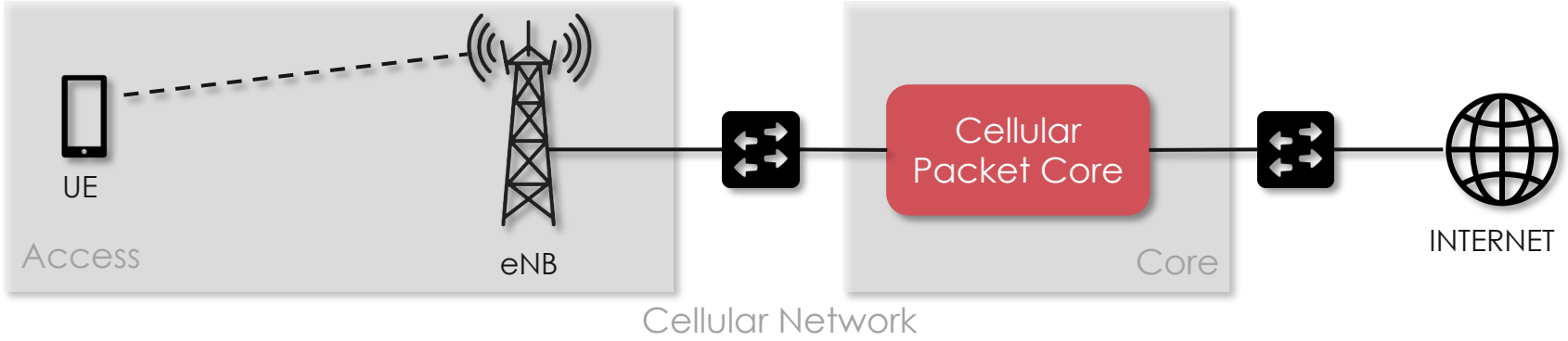
Phased Approach

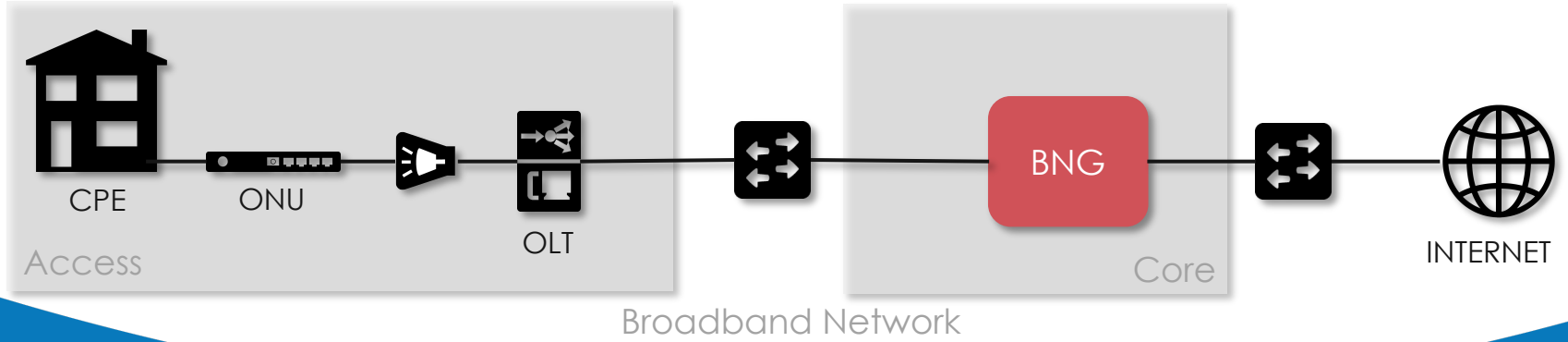


COMAC

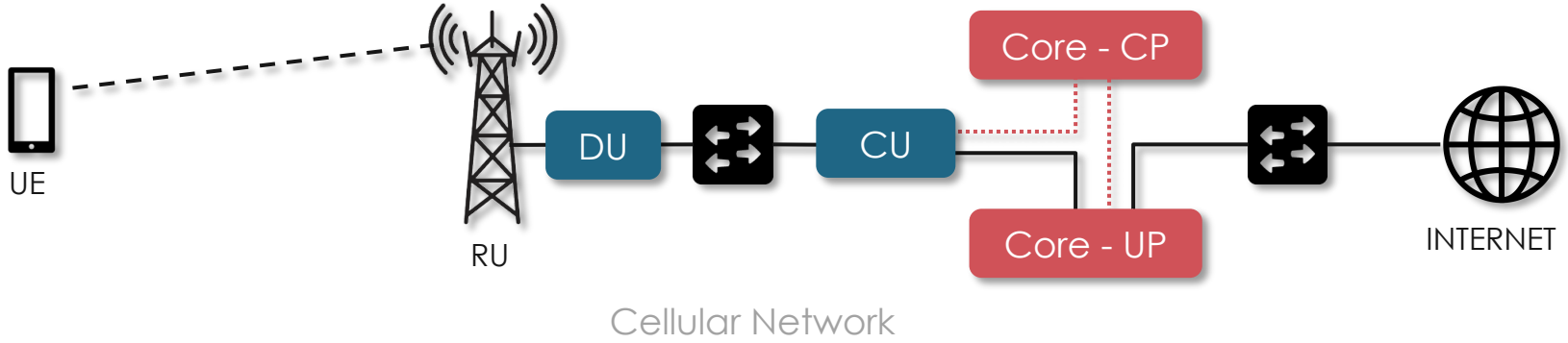
Disaggregate First

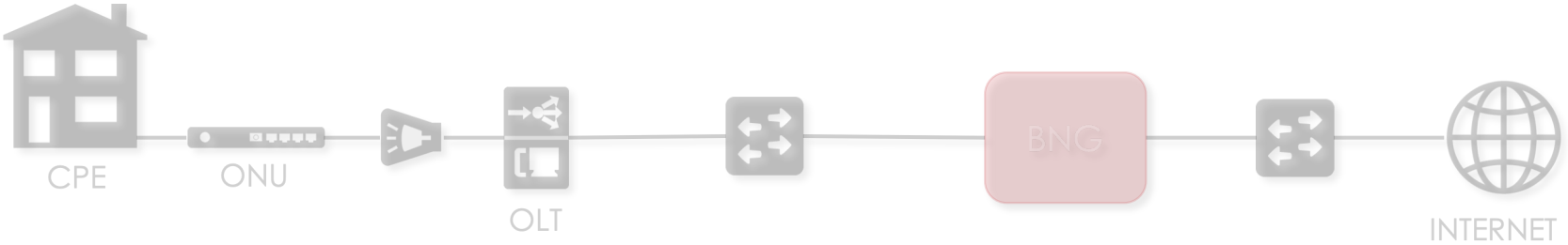
Access & Core


UE
Access
eNB
Cellular
Packet Core
Core
INTERNET
Cellular Network

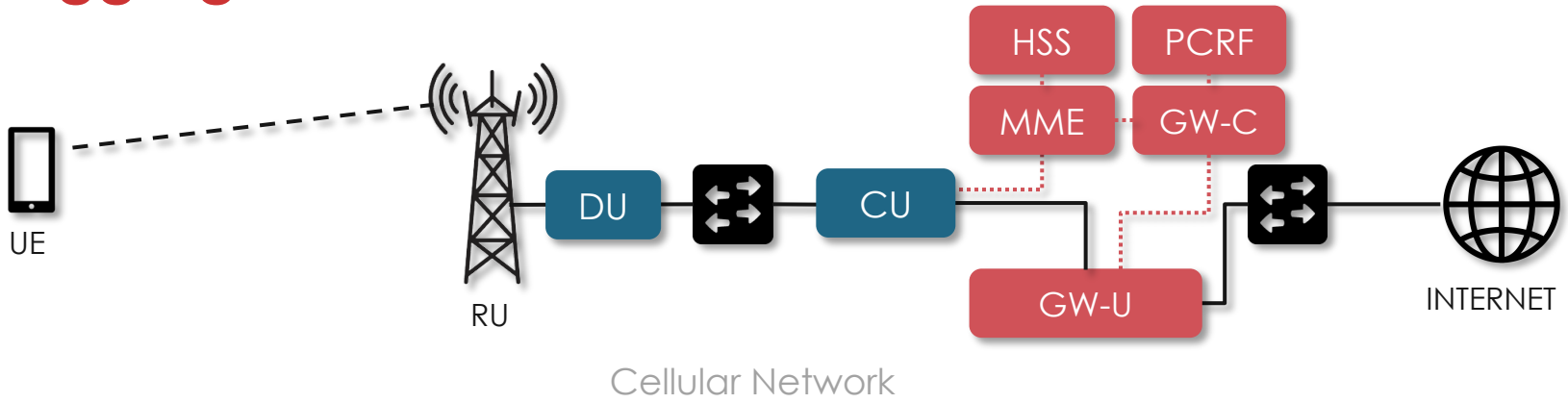

CPE
ONU
OLT
Access
BNG
Core
INTERNET
Broadband Network

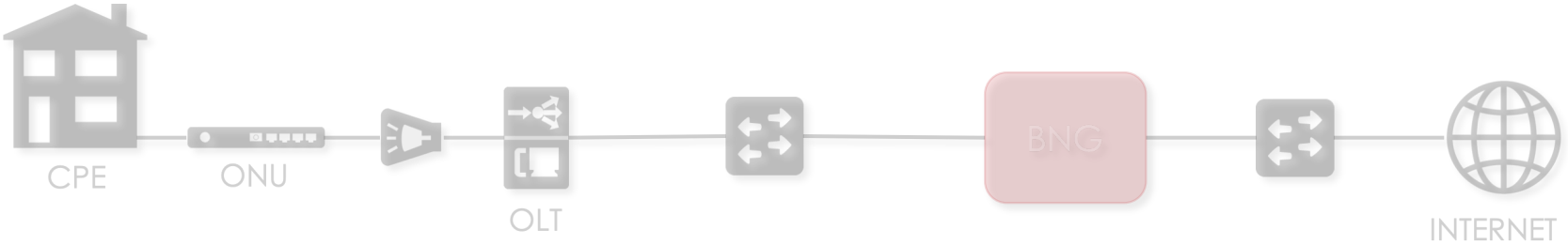
Disaggregation & Virtualization



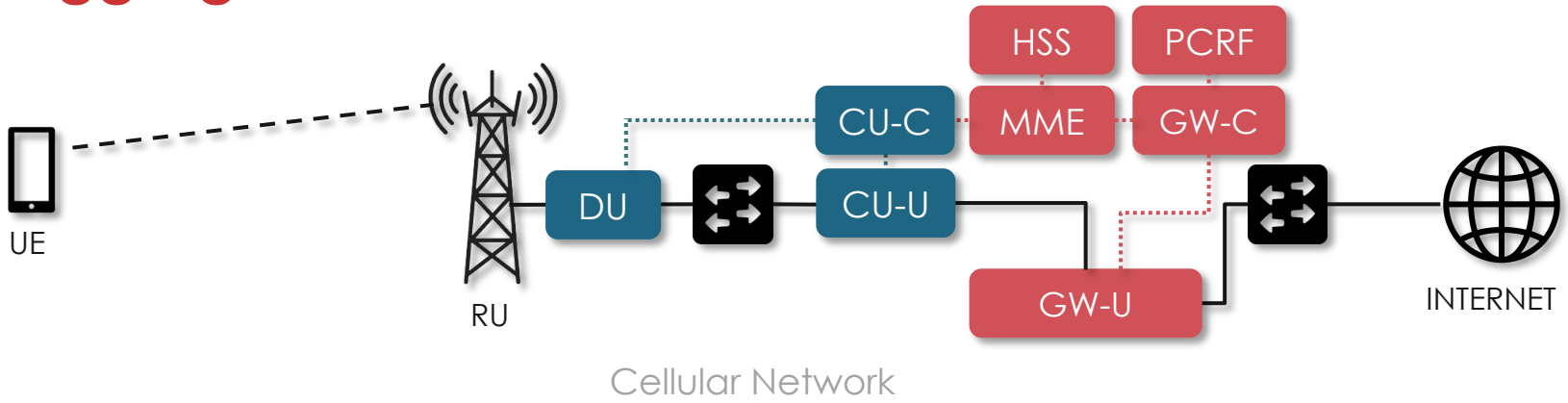


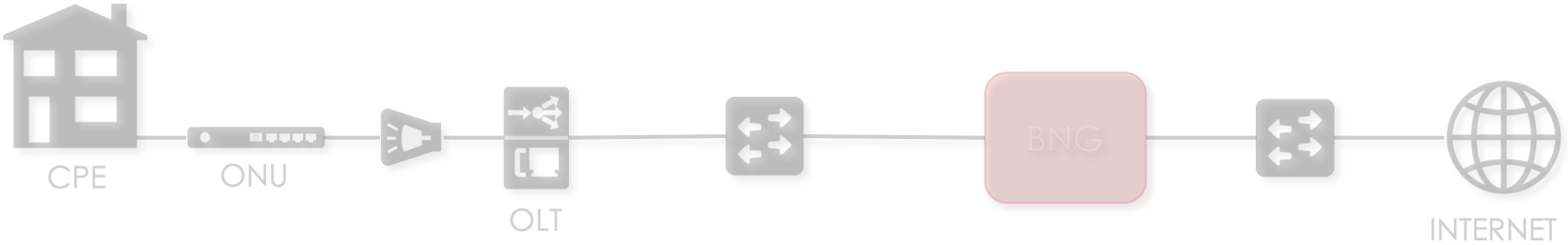
Disaggregation & Virtualization



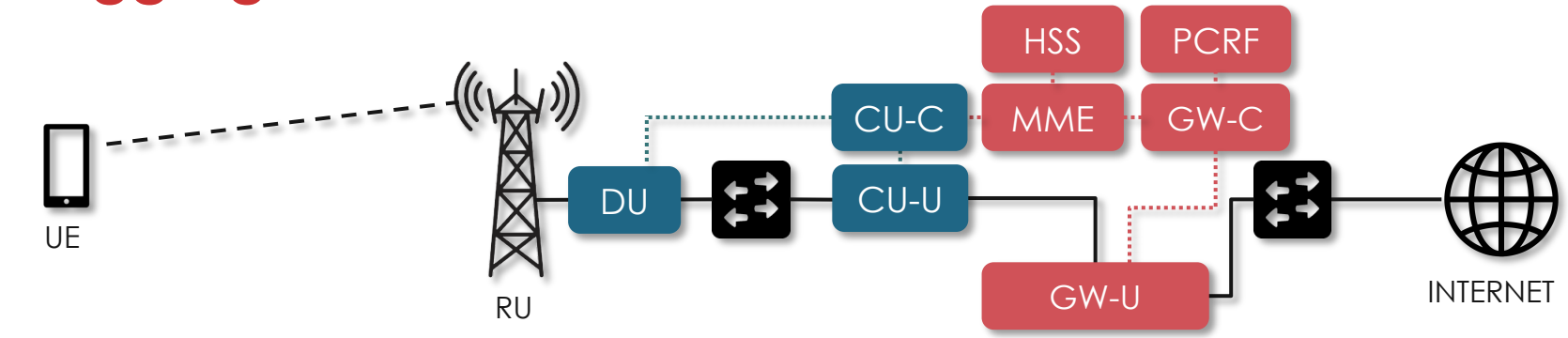


Disaggregation & Virtualization

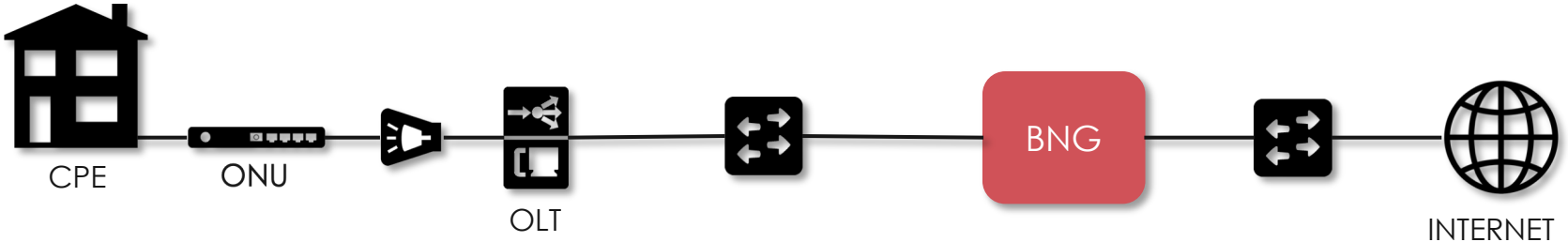




Disaggregation & Virtualization

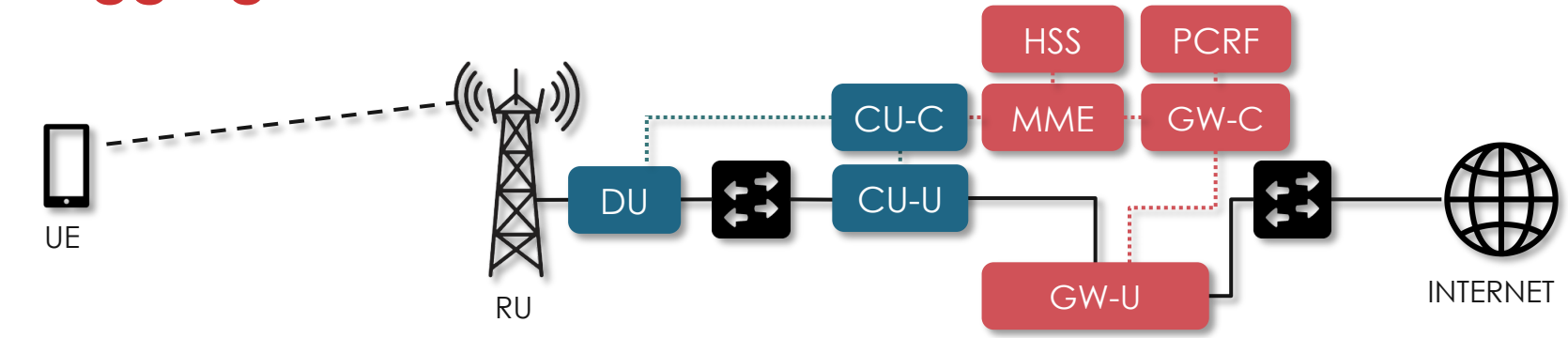


Cellular Network

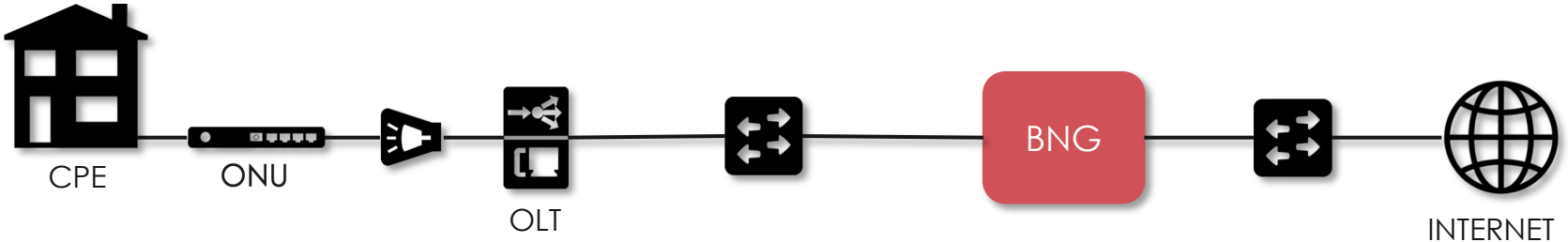


Broadband Network

Disaggregation & Virtualization

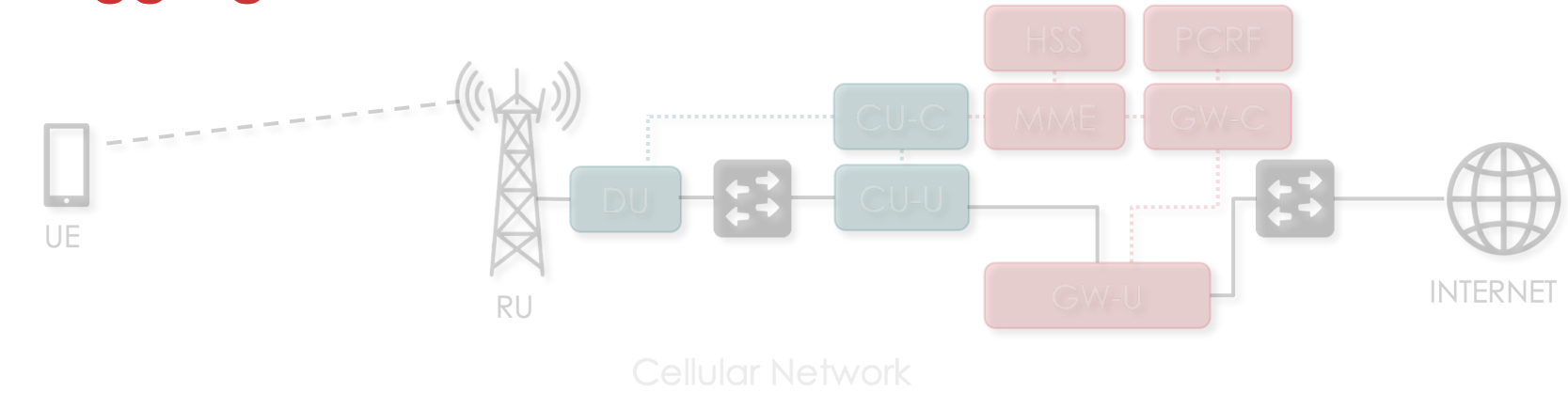


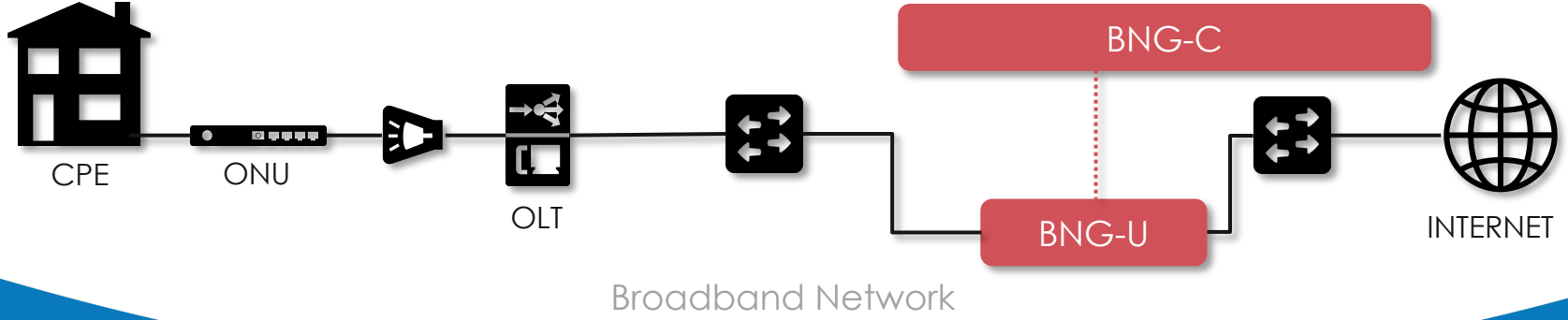
Cellular Network



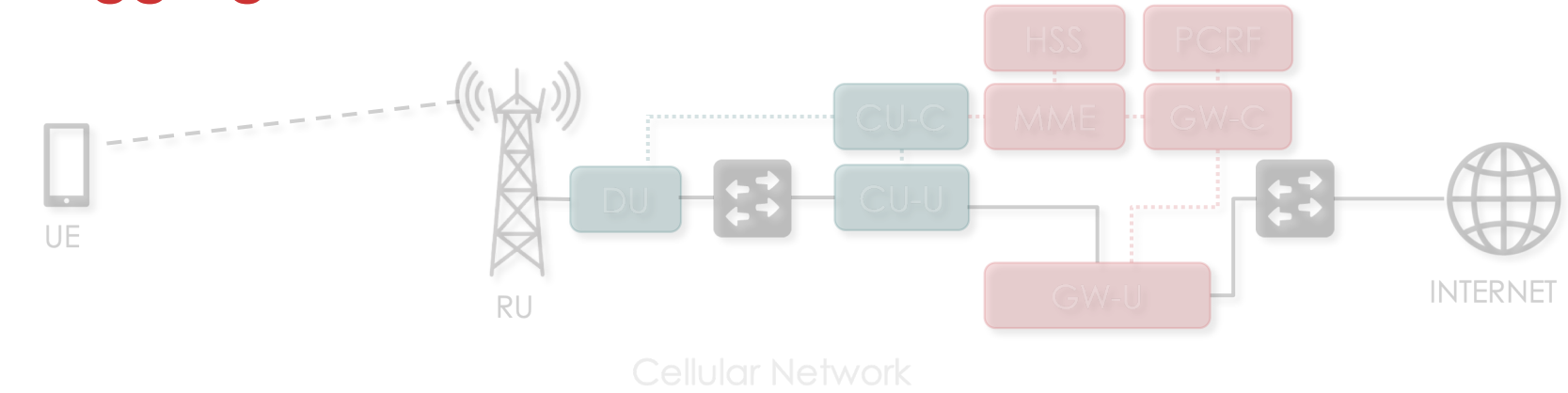
Broadband Network

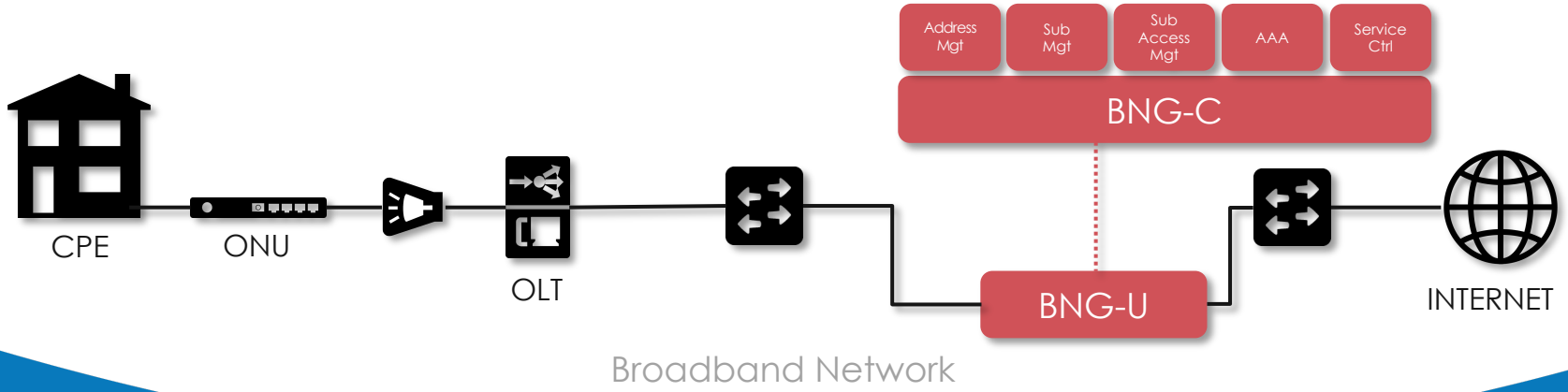
Disaggregation & Virtualization





Disaggregation & Virtualization

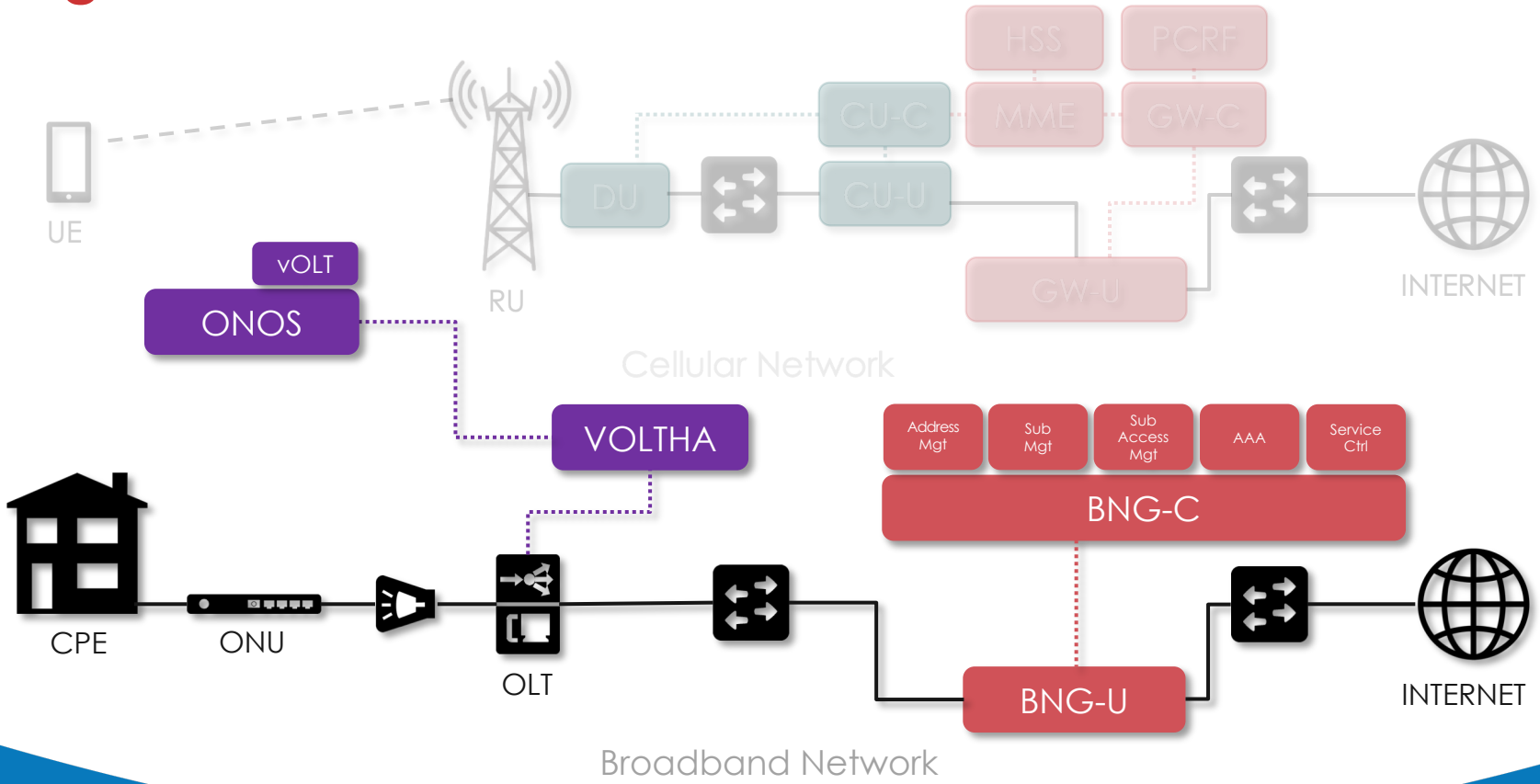




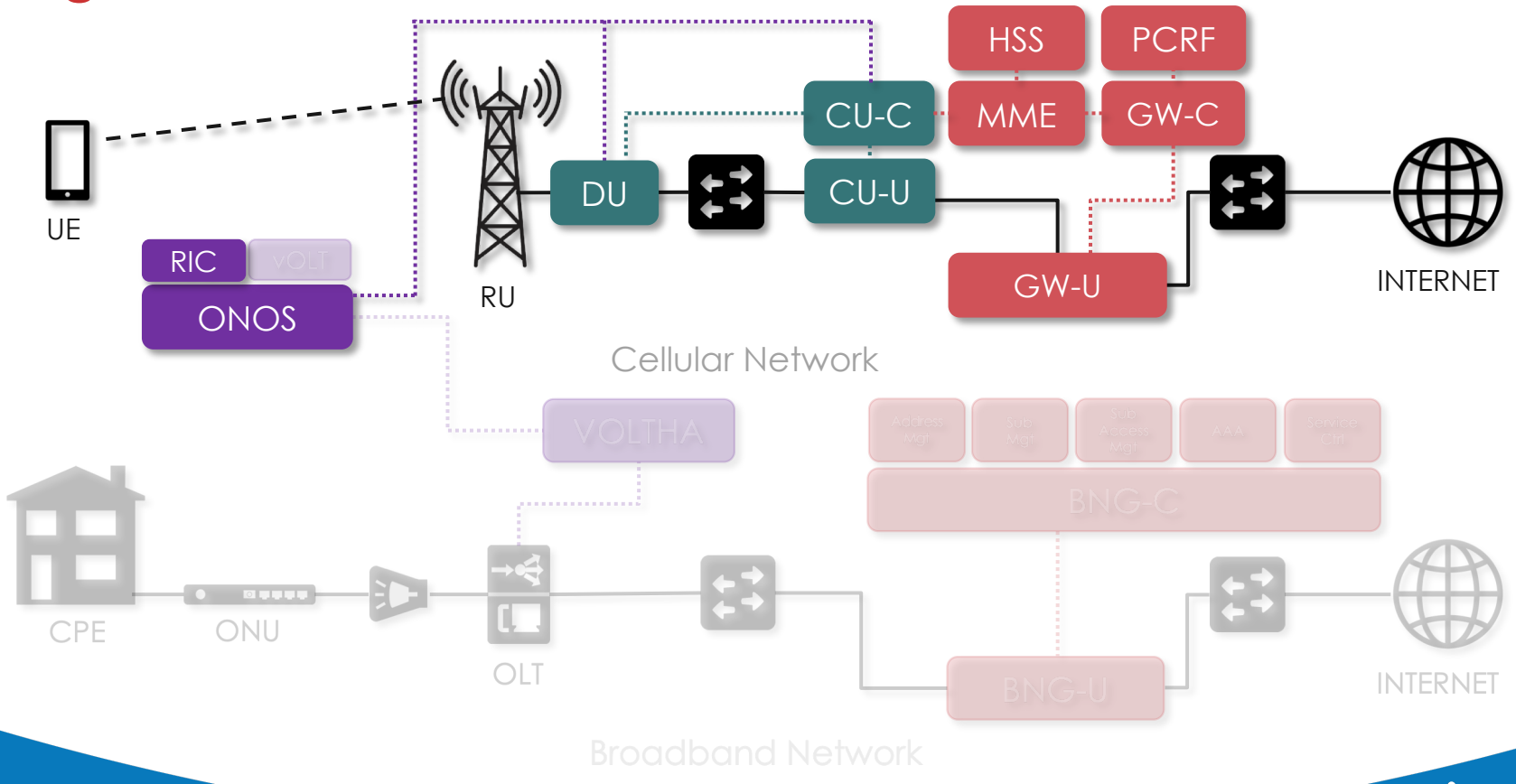
COMAC

Integrate with Programmatic Access

Programmable Access



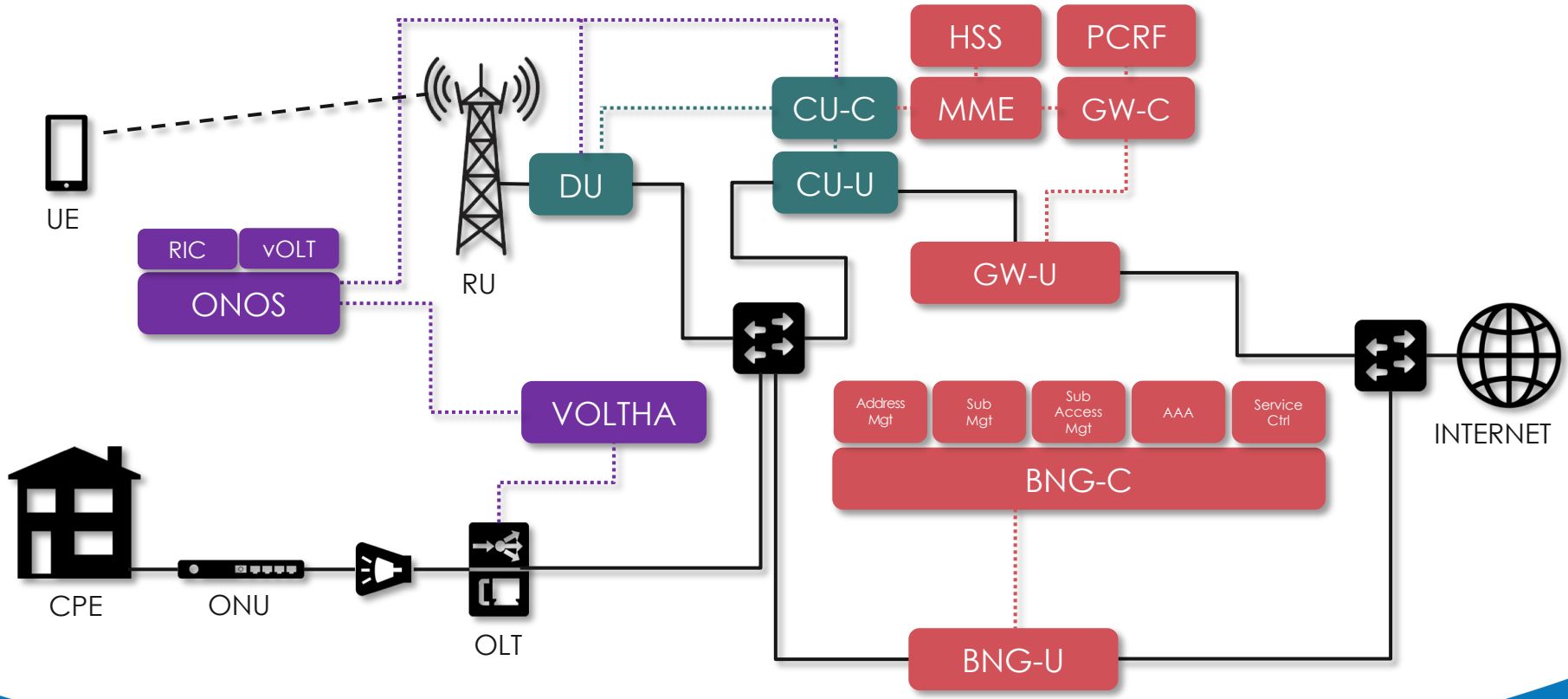
Programmable Access



COMAC

Enable Co-Existence

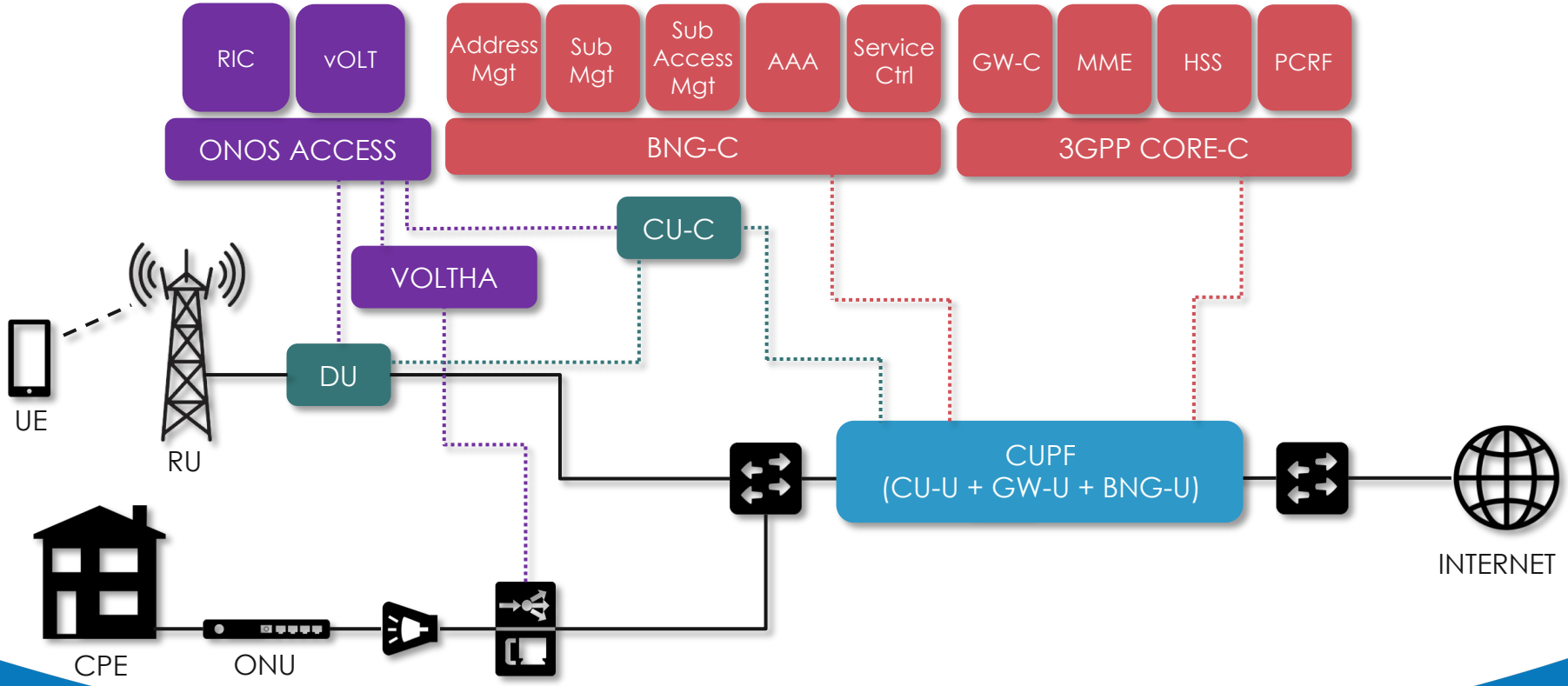
Co-Existence at the Edge



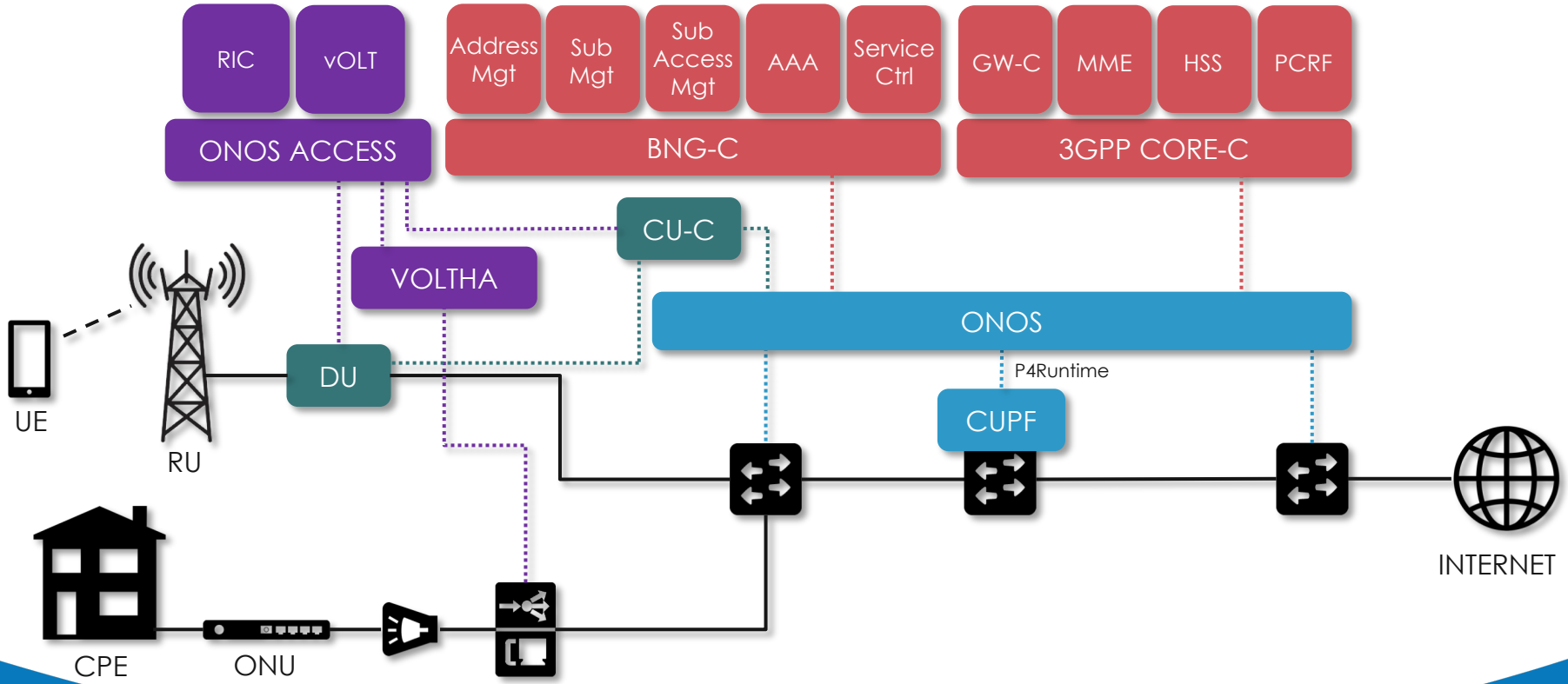
COMAC

Re-Aggregate

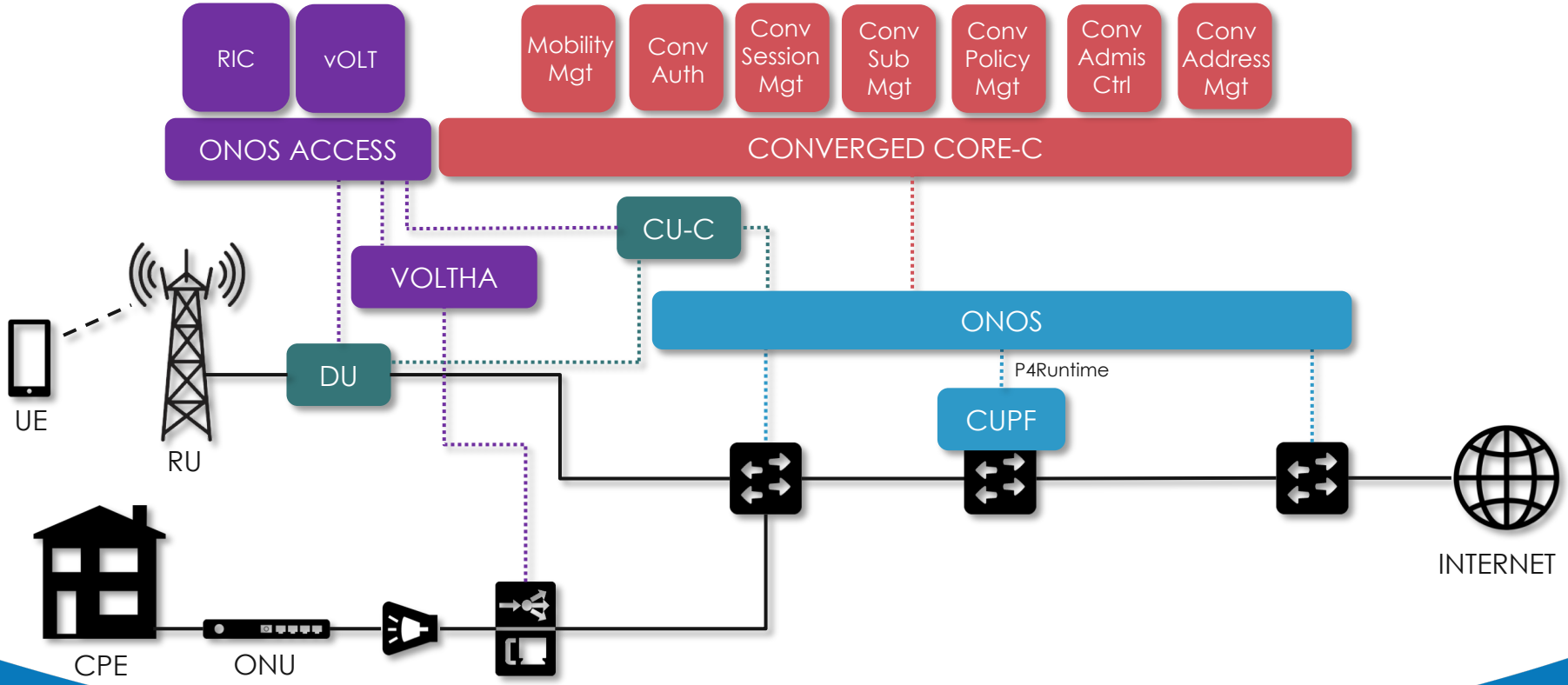
User Plane Convergence



P4-Based User Plane Convergence



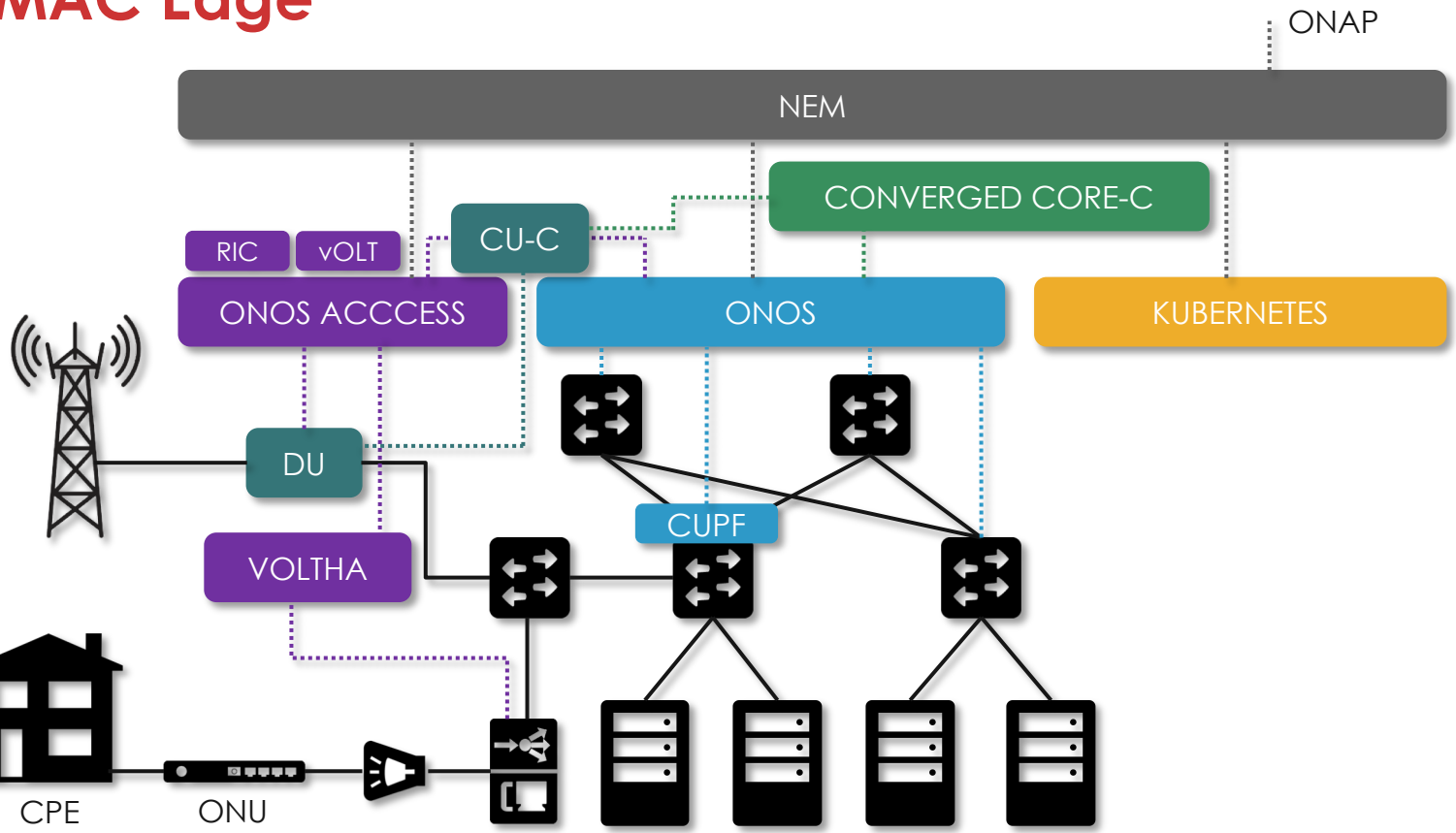
Control Plane Convergence



COMAC

Platform

COMAC Edge


ONAP
NEM
CONVERGED CORE-C
RIC
vOLT
CU-C
ONOS ACCCESS
ONOS
KUBERNETES
DU
CUPF
VOLTHA
CPE
ONU

COMAC EP v.1.0 Release

COMAC EP v1.0 Release

Graduating from Demo Quality to Field Trial Quality Towards Production Readiness

China Unicom will use this platform in its field trials for SD-RAN and MAEC

M-CORD has conducted very successful demonstrations

Focus has been on showcasing cutting-edge technology

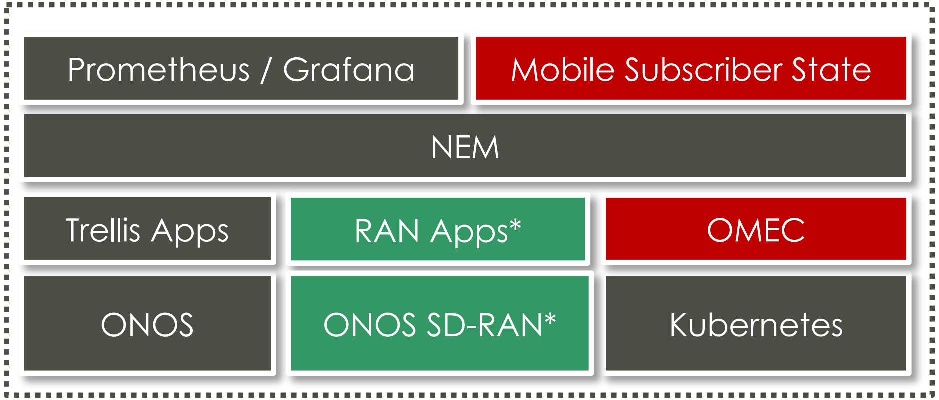
ONF Mobile Edge Cloud Platform
Official Release Date:
September 20, 2019

OMEC dev follows the same processes that other ONF projects use

Gateway components hardened for deployment

Mobile subscriber state for FCAPS is OMEC based and uses OMEC processes for dev

MME component is being enhanced towards deployment



SD-RAN controller is based on ONOS which is hardened for Trellis

Leverages the latest SEBA platform which has been *hardened for deployment*

Further development will be in synch with µONOS processes

RAN Apps development will follow the same processes that other ONF projects use

*** Will not be part of v1.0 release, but subsequent releases**

THANK YOU


M. Oğuz Sunay, Ph.D.
Chief Architect for Mobile Networking
1000 El Camino Real, Suite 100
Menlo Park, CA 94025
www.opennetworking.org
+1(415)200-9180
oguz@opennetworking.org
Open Networking Foundation