

Motivation

- Deal with increasing traffic and changing applications
- Adapt network structure and integrate fixed and mobile infrastructures
- Improve placement of intelligence in the network
- Enable an open environment for fixed and mobile networks

Objectives

- Define and develop Fixed Mobile Converged (FMC) architectures for future networks
- Demonstrate experimentally key FMC network features
- Influence standardization bodies with respect to FMC architectures

Benefits

- Unify hardware resources
- Save cost and energy
- Simplify network architectures
- Improve network operation and user experience
- Enable a 5G infrastructure with end-to-end management and orchestration capabilities

FIXED MOBILE NETWORK INTEGRATION



COMBO - COvergence of fixed and Mobile
Broadband access/aggregation networks

Grant agreement no: 317762

<http://www.ict-combo.eu/>

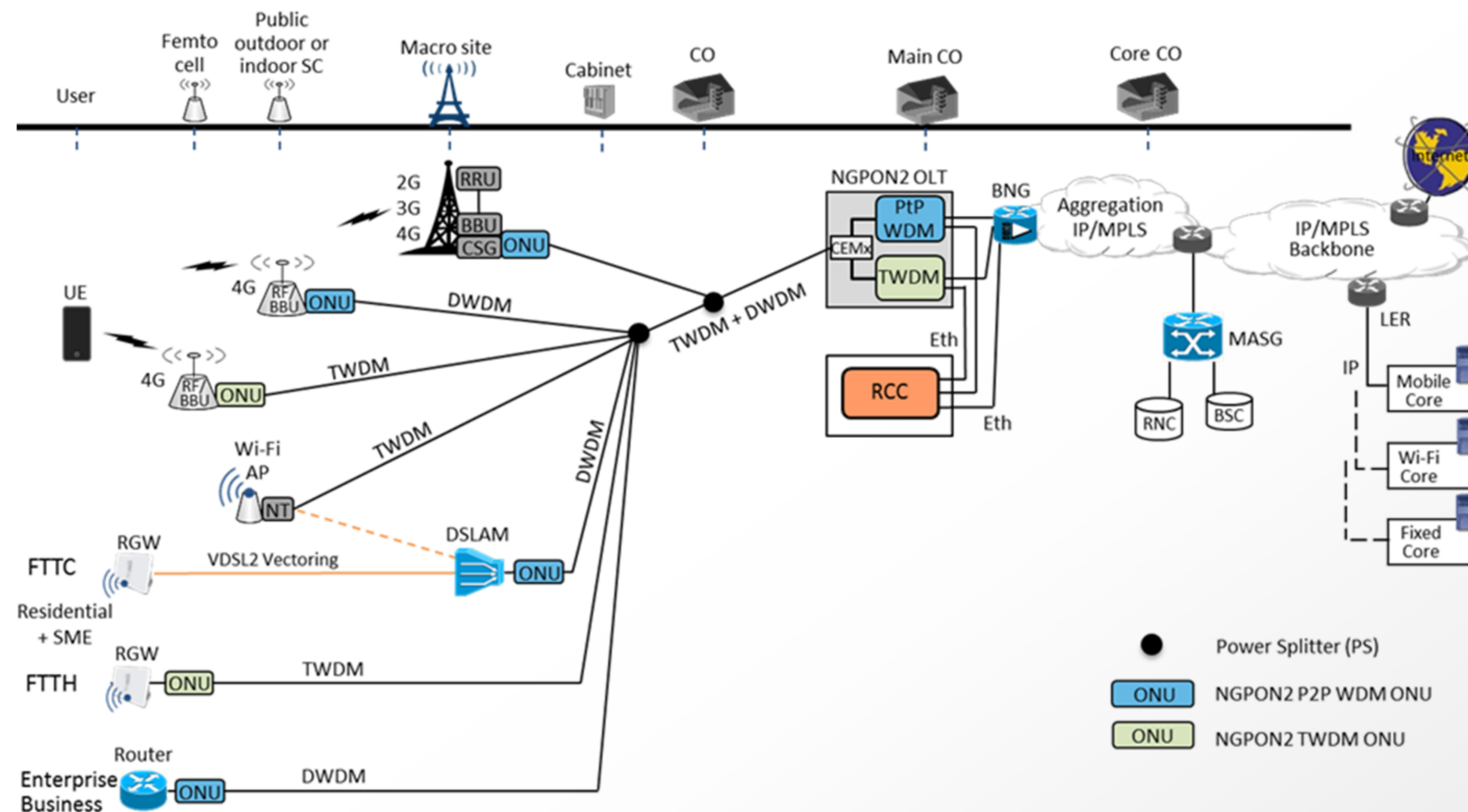


FIXED MOBILE NETWORK INTEGRATION



Structural convergence / Streamlining of transport

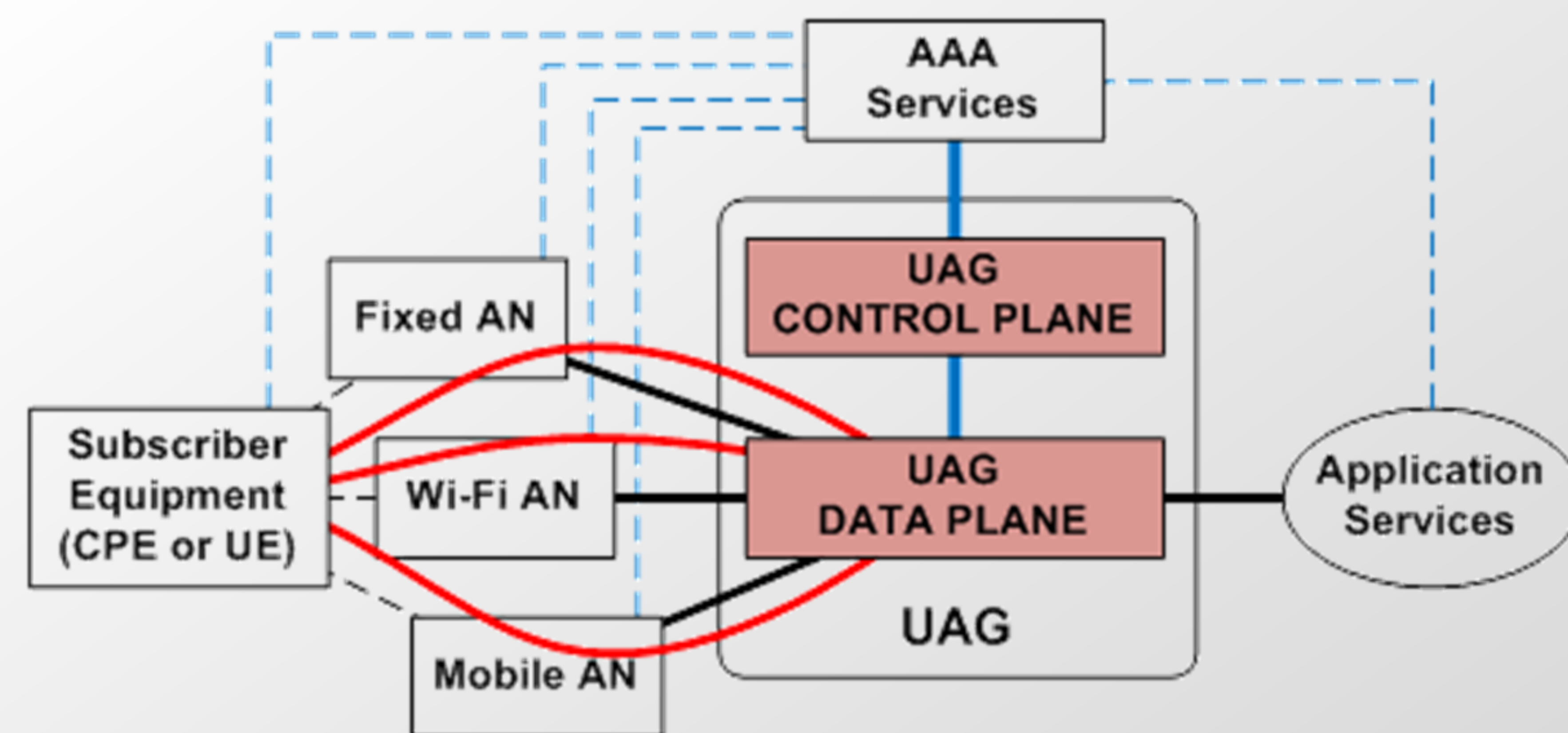
- Structural convergence is defined as pooling / sharing of network and infrastructure resources for fixed, mobile and Wi-Fi
- Structural convergence will be triggered by heterogeneous RANs, mobile fronthaul and Centralized RAN
- A unified optical access / aggregation network with low latency and high capacity will foster structural convergence



- Power Splitter (PS)
- ONU NGPON2 P2P WDM ONU
- ONU NGPON2 TWDM ONU

Functional convergence / Universal Access Gateway

- Functional convergence is the implementation of generic functions to realize similar goals in fixed, mobile and Wi-Fi. It will rely on:
 - Universal Authentication (uAUT)
 - Universal Data Path Management (uDPM)
 - Universal Access Gateway (UAG) as a common subscriber IP edge



UAG interfaces

Control interfaces

— Network interfaces

Subscriber interfaces

UAG

AN

AAA

CPE
UE

Universal Access Gateway

Access Node

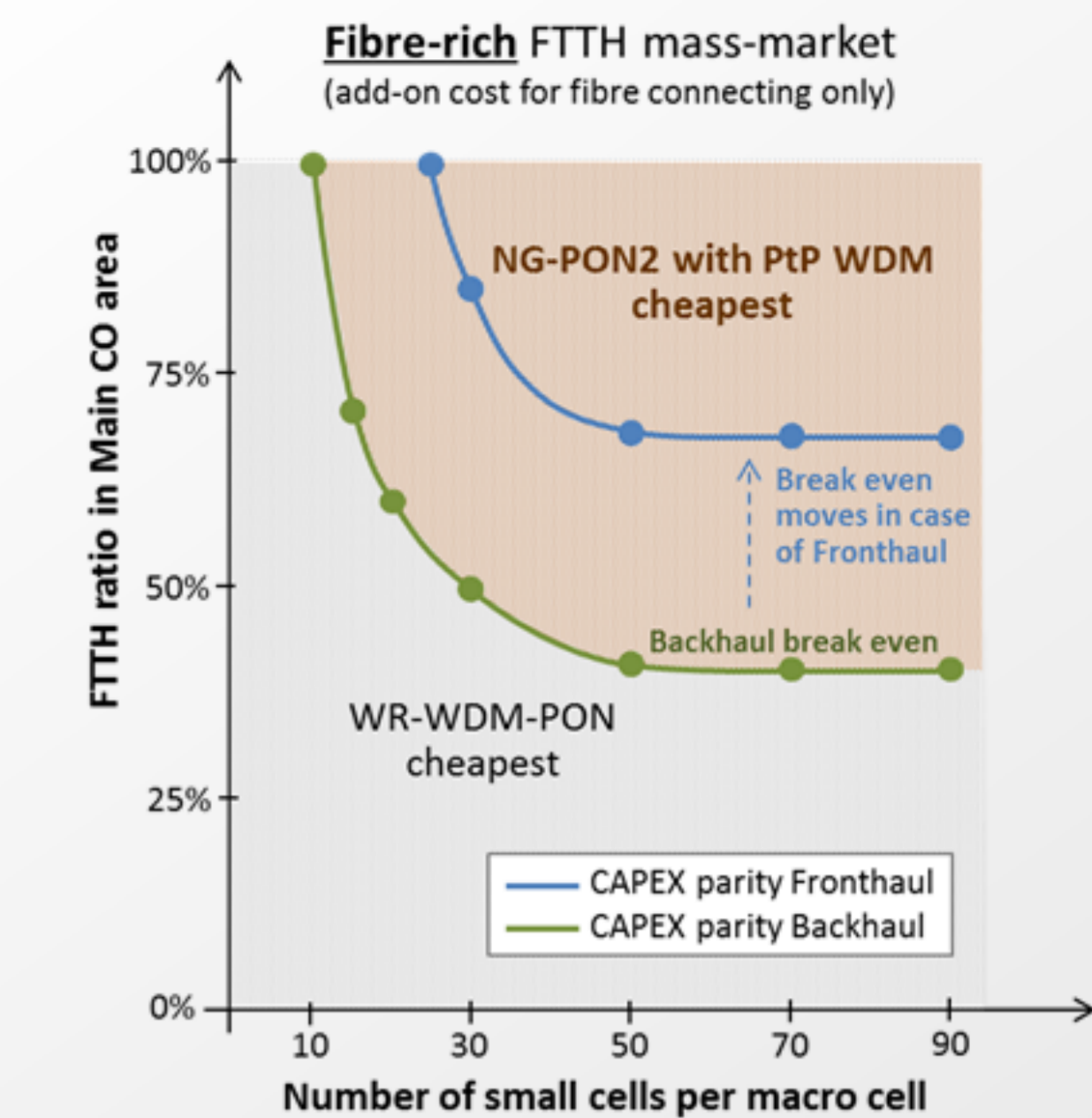
Authentication Authorization Accounting

Customer Premises Equipment
User Equipment

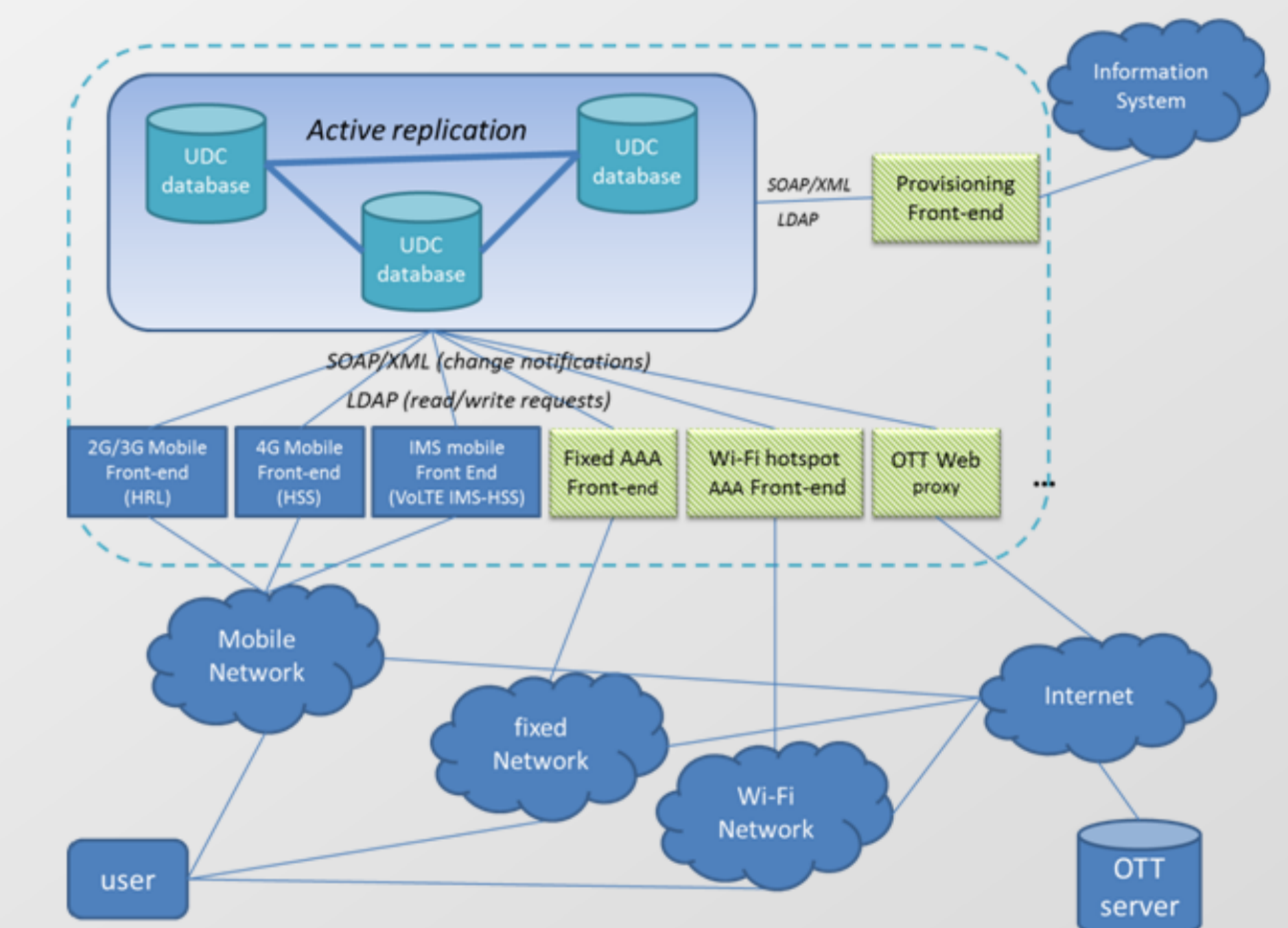
User Equipment

Key outcomes

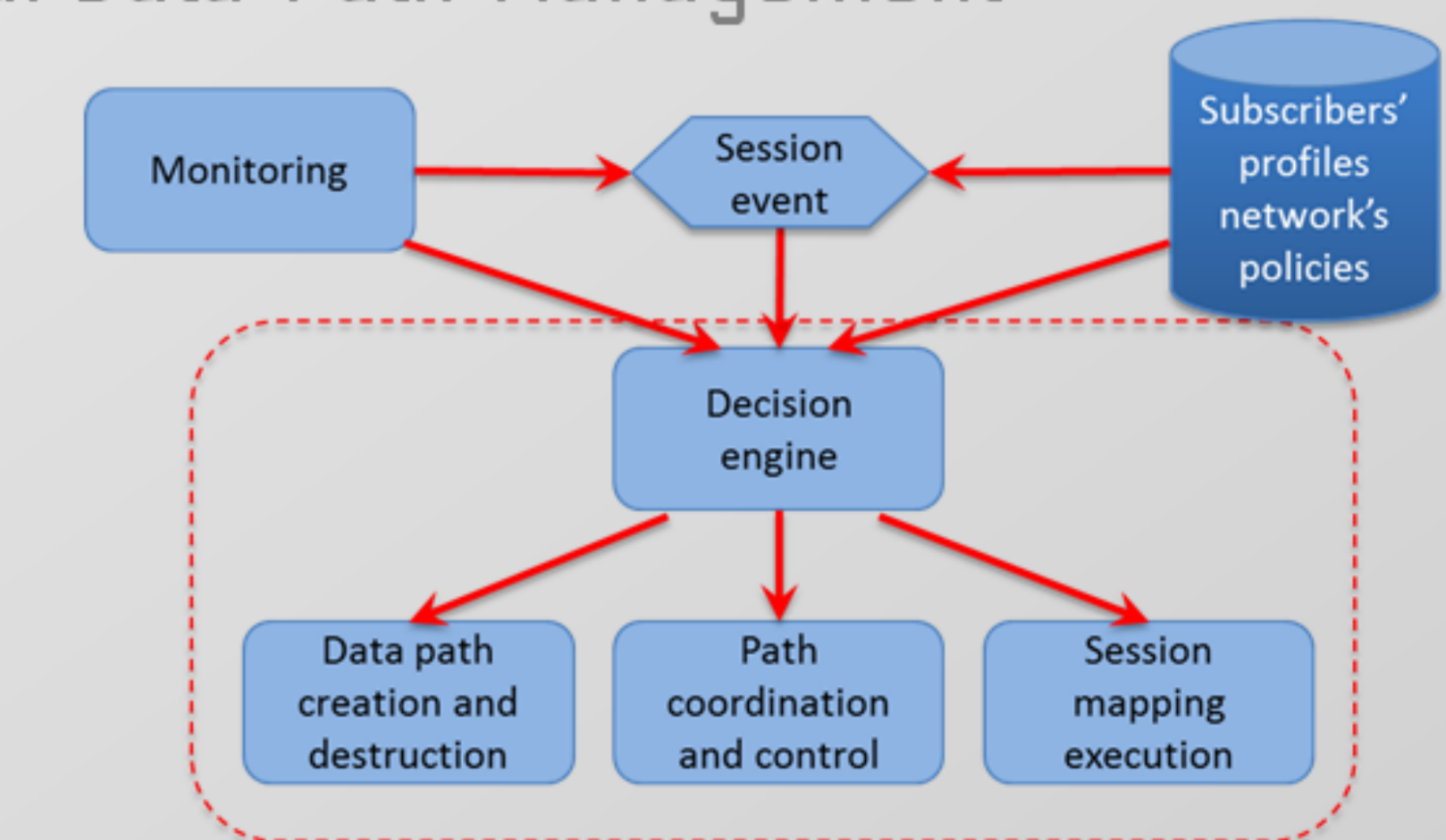
Streamlining of transport



Universal Authentication



Universal Data Path Management



Experimental developments for UAG embodiment

