Aether Management Platform
– Operationalizing Disaggregated Systems –

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5G Connected Edge Cloud for Industry 4.0 Transformation
Managed 4G/5G Edge Cloud for Enterprises
An ONF Open Source Project

PRONTO
Securing the Internet Using Verifiable Closed-Loop Control
A DARPA Research Project: Stanford, Cornell, Princeton, ONF
Aether Overview

Distributed Mobile Core User Plane provides local breakout at all remote Edge sites.
Aether Is Operational
Aether Components

SDN Substrate
SD-Core (User/Control Plane)
Verifiable Closed-Loop Control
SD-RAN
Edge Apps

AMP Operationalizes

Aether Connectivity Control (ACC)
Aether Management Platform (AMP)

Central Cloud

Aether Connected Edge (ACE)
Disruptor’s Dilemma

Disaggregate to Catalyze Innovation

→ Value proposition of open networking and SDN

Integrate to Facilitate Adoption

→ Requirement for operational deployment

Bundled Appliance

Disaggregate

Integrate

Platform

Closed Point-Solution

Open Extensible Solution
Disruptor’s Dilemma

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Disruptor’s Dilemma

Disaggregate to Catalyze Innovation

→ Value proposition of open networking and SDN

Integrate to Facilitate Adoption

→ Requirement for operational deployment

Our goal is to sustain the innovate/deploy/operate cycle

→ Build extensible/evolvable systems (not just modular point solutions)
→ Democratize the operationalization of disaggregated components
Aether Components

Aether Connected Edge (ACE)

ACE Platform
(COTS HW, ONOS, K8S)

SD-RAN
SD-Core
Pronto
Edge Apps

Aether Connectivity Control (ACC)
Aether Management Platform (AMP)

Central Cloud
Aether Management Platform

Edge Platforms/Apps

Central Cloud

Aether Connectivity Control (ACC)
Aether Management Platform (AMP)

Enterprise Portal | Ops Portal | App Provider Portal

Aether Management Platform (AMP)

Runtime Ops Control | Logging and Monitoring | Lifecycle Management

ACE Platform (COTS HW, ONOS, K8S)

Aether Connected Edge (ACE)

Central Cloud

Enterprise Portal

Ops Portal

App Provider Portal

ACE Platform

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Central Cloud

ACE Platform

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Aether Management Platform (AMP)

Central Cloud
Lifecycle Management: CI/CD Pipeline

Continuous Integration

Continuous Deployment
Monitoring Dashboard
Aether Management Platform

Enterprise Portal  |  Ops Portal  |  App Provider Portal

Aether Management Platform (AMP)

Runtime Ops Control  |  Logging and Monitoring  |  Lifecycle Management

Aether Connectivity Control (ACC)

Aether Management Platform (AMP)

Central Cloud

ACE Platform
(COTS HW, ONOS, K8S)

Aether Connected Edge (ACE)
Runtime Operations Control

API with RBAC

onos-config (YANG Models)

Atomix K/V Store

gNMI

Enterprise Portal

Ops Portal

App Provider Portal

Modeling the Connectivity Service
- Subscribers
- Enterprises / Sites
- User Equipment / Devices
- Usage Profiles
- QoS Parameters
- Network Slices
- Service Chains
- ...

Services
- SD-RAN
- SD-Core (UP)
- Pronto
- SD-Core (CP)

(Devices)
An Invitation to Join Us

Enterprises
→ Explore ACE deployments for a POCs or trials

Ecosystem Partners
→ Integrate your IoT/ML platforms & apps into Aether
→ Port Aether to your hardware/software platform

University Campuses
→ Deploy ACE for your research and campus automation

Open Source Developers
→ Collaborate to realize Aether’s full potential
5G Connected Edge Cloud for Industry 4.0 Transformation

Thank You

https://aetherproject.org
Aether Components

Aether Connected Edge (ACE)

Kubernetes

RIC

xApps

Fabric

UPF

Pronto

Edge App

IoT

Surveillance

IoT

Multimedia

Employees

Visitors

Aether Connectivity Control (ACC)

Aether Management Platform (AMP)

Central Cloud