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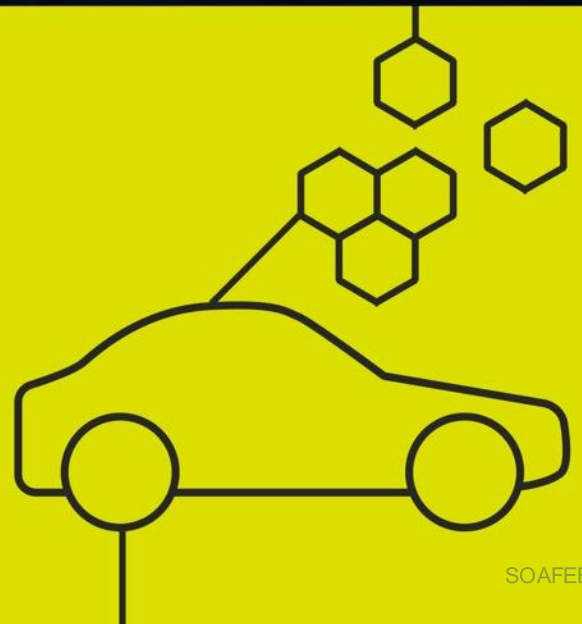
Blueprint

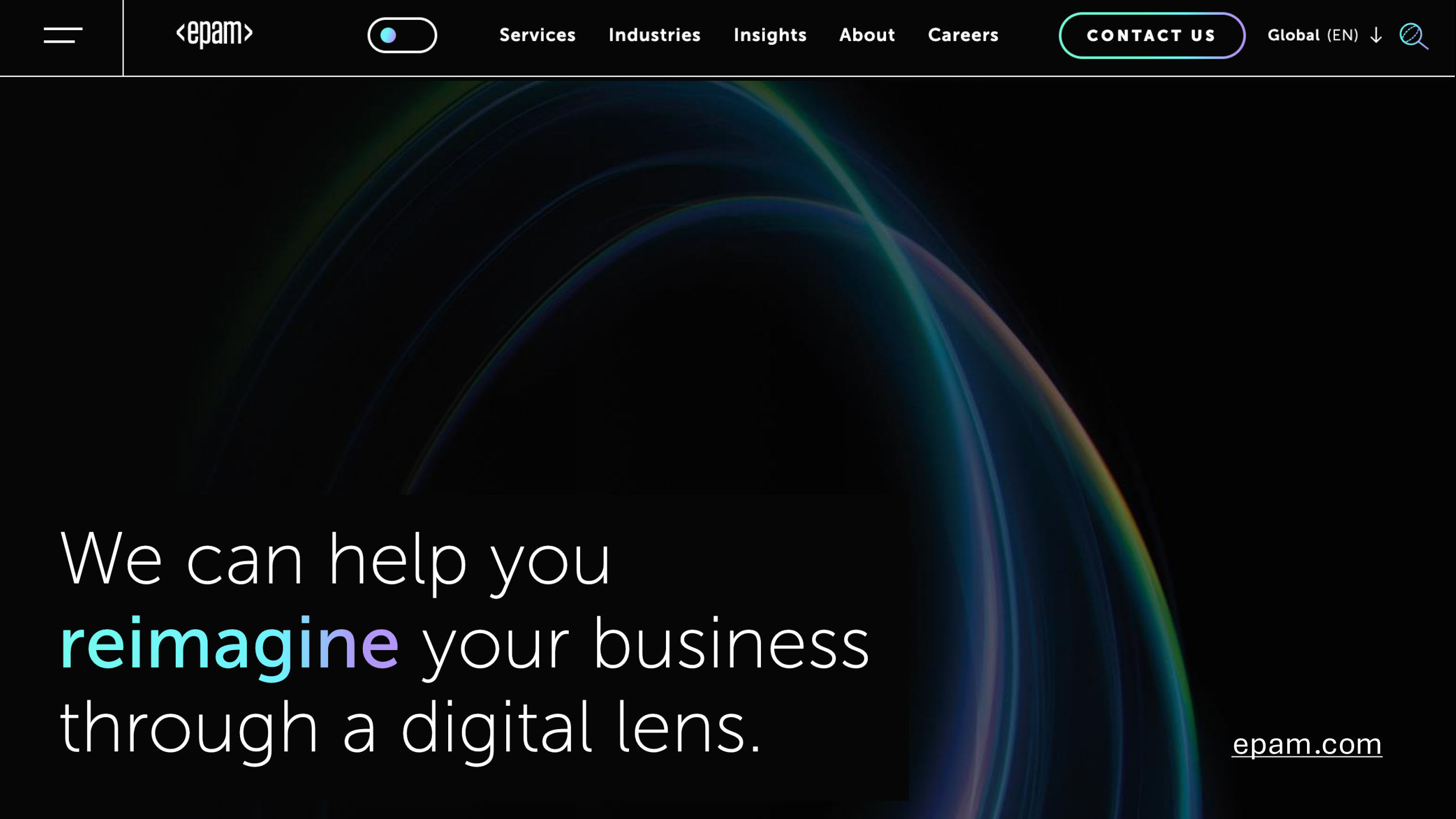
AosEdge

to enable
Scalable Deployment & Mixed Critical Orchestration
for Virtual and Real Environments



Bucci Kawabuchi, EPAM
AosEdge, Product Marketing

May 15, 2025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Bucci Kawabuchi

EPAM Japan

Automotive & Embedded

AosEdge, Product Marketing

career

Win/VC++ dev

Mobile carrier

Mobile app studio

Global agile agency

“Flying Car” startup

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Blueprint

AosEdge

to enable
Scalable Deployment & Mixed Critical Orchestration
for Virtual and Real Environments

Agenda

Blueprint Overview
Product Features
Demo Booth
Get Started

Bucci Kawabuchi, EPAM
AosEdge, Product Marketing

Blueprint Overview

Product + Architecture Proposal

Product

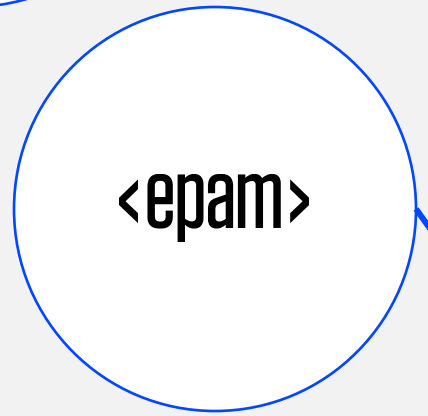
Scalable Deployment & Mixed-Critical Orchestration Platform for Automotive

- **AosCore** - Runtime Orchestrator (Apache 2.0)
- **AosCloud** - Managing Cloud Service (Non-redistribution source available license)

Architecture Proposal

Unikernel by Xen Hypervisor & Zephyr RTOS

to enable Mixed-Critical Orchestration
along with automotive-centric container



Expertise

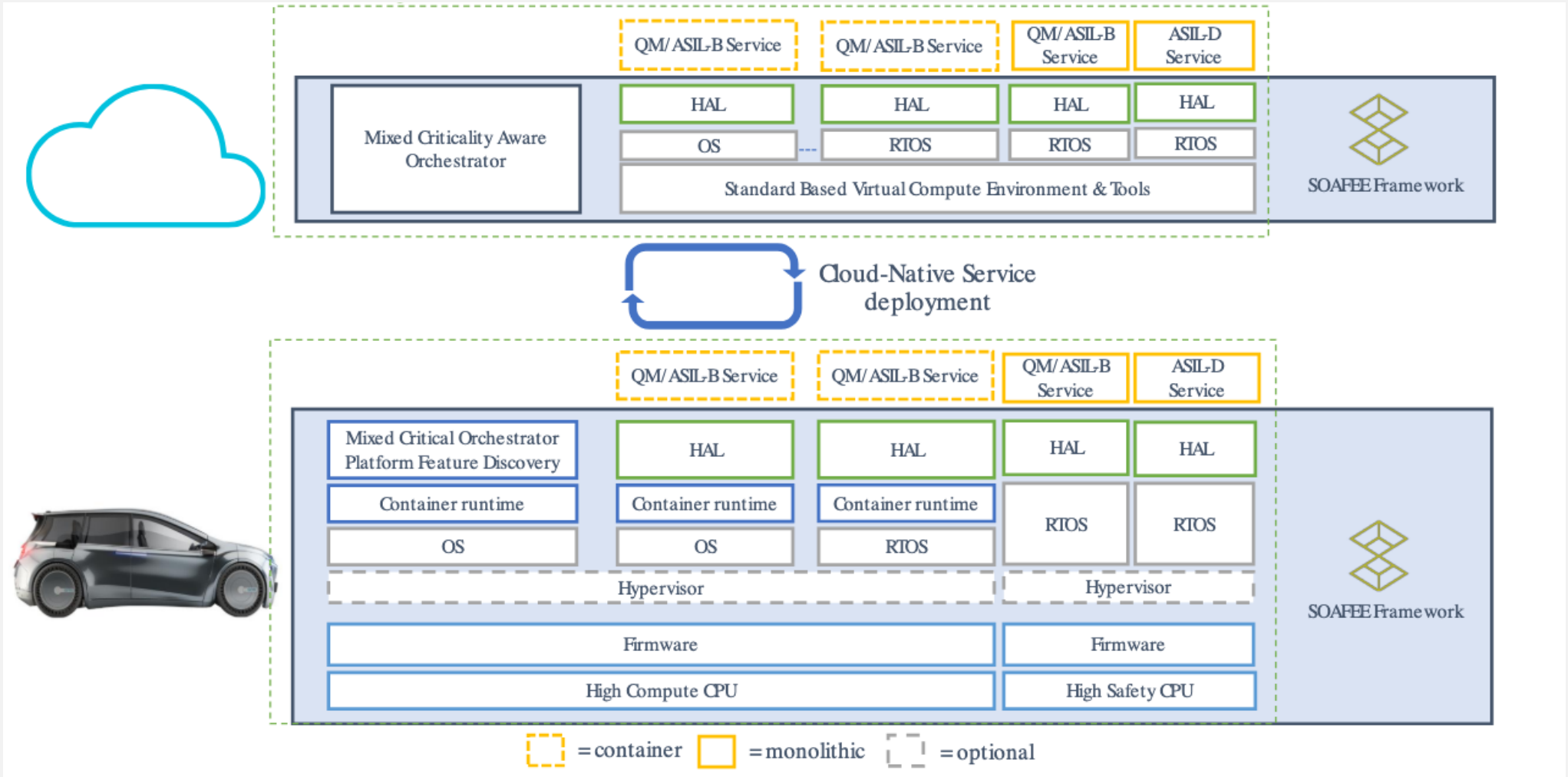
Automotive & Embedded boutique team

x

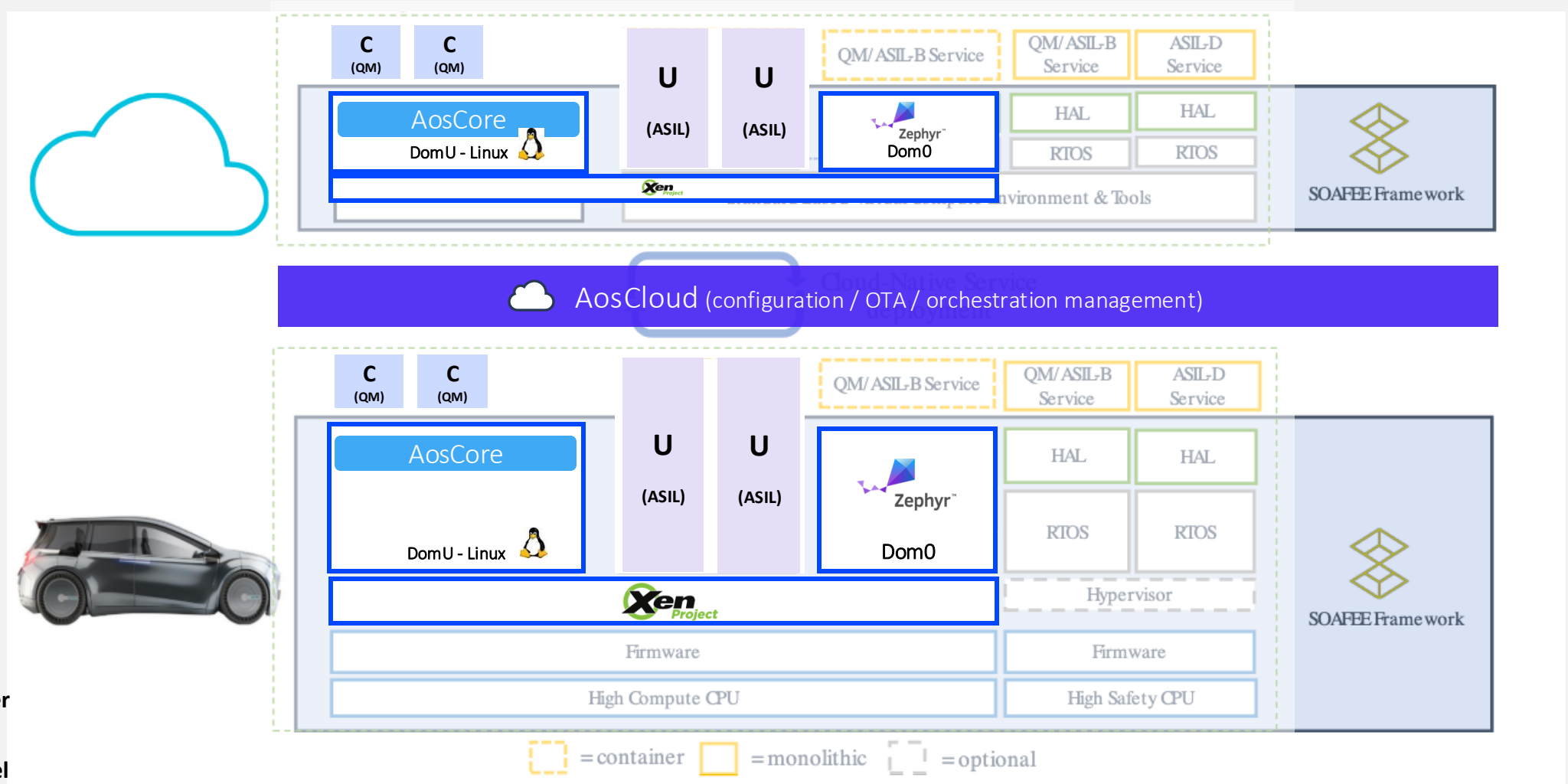
Digital Platform Engineering

cloud, agile, open-source, DevSecOps, etc.

Blueprint – SOAFEE & AosEdge



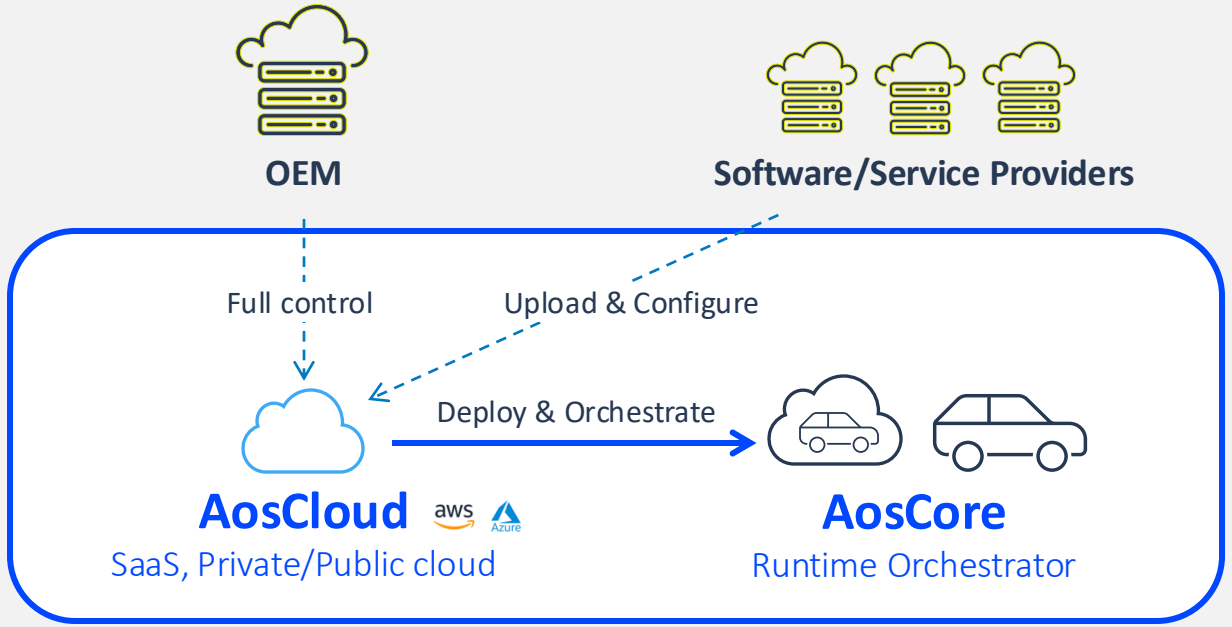
Blueprint – SOAFEE & AosEdge



Product

Aos Edge

Scalable Mixed Critical Orchestration Platform



Configuration & OTA management in Cloud

- Manage device, fleet, configuration, campaign
- FOTA (delta update, roll back, etc)
- Multi-tenancy, CDN
- Enterprise integration ready

Automotive-centric Container & Orchestration

- Optimized for remote constrained environment
- Lightweight & Secure
- OCI compliant

Mixed-Critical Orchestration with Unikernel

- Unikernel handled within the orchestration framework
- FuSa with Xen HV & Zephyr RTOS

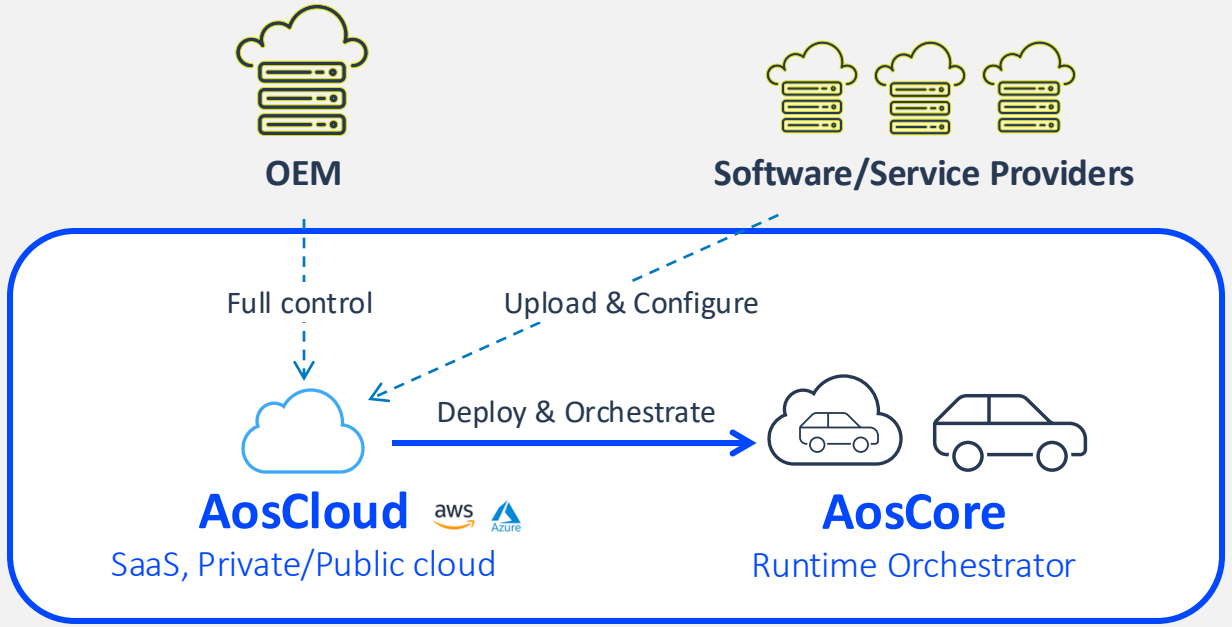
Dynamic rebalance & resource optimization

- Dynamic rebalancing to fully utilize multi-node HPC
- Abstract HW from SW

Product – why?

Aos Edge

Scalable Mixed Critical Orchestration Platform



Configuration & OTA management in Cloud

Automotive-centric Container & Orchestration

Mixed-Critical Orchestration with Unikernel

Dynamic rebalance & resource optimization

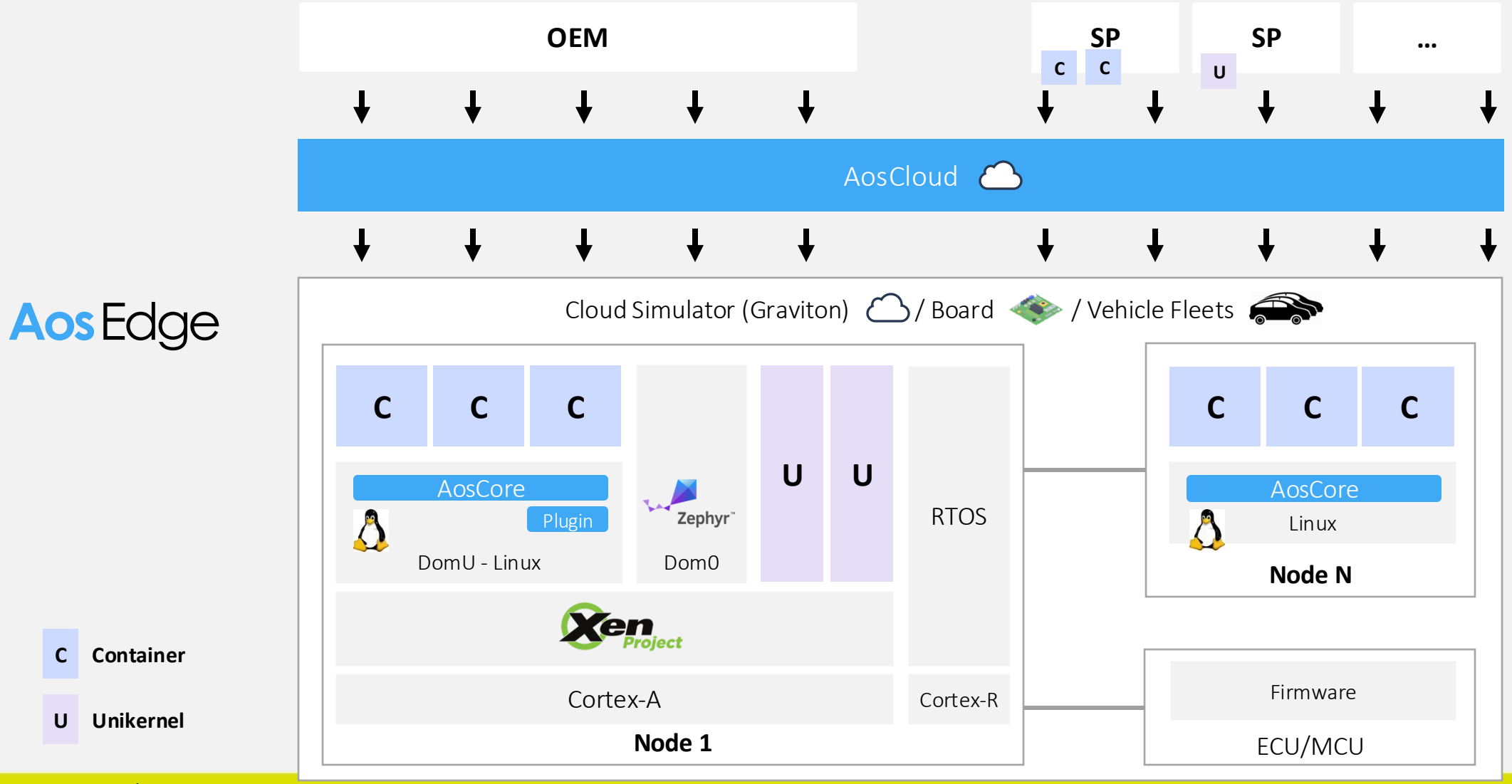
- M
- FC
- M
- En

cing to
-node HPC
m SW

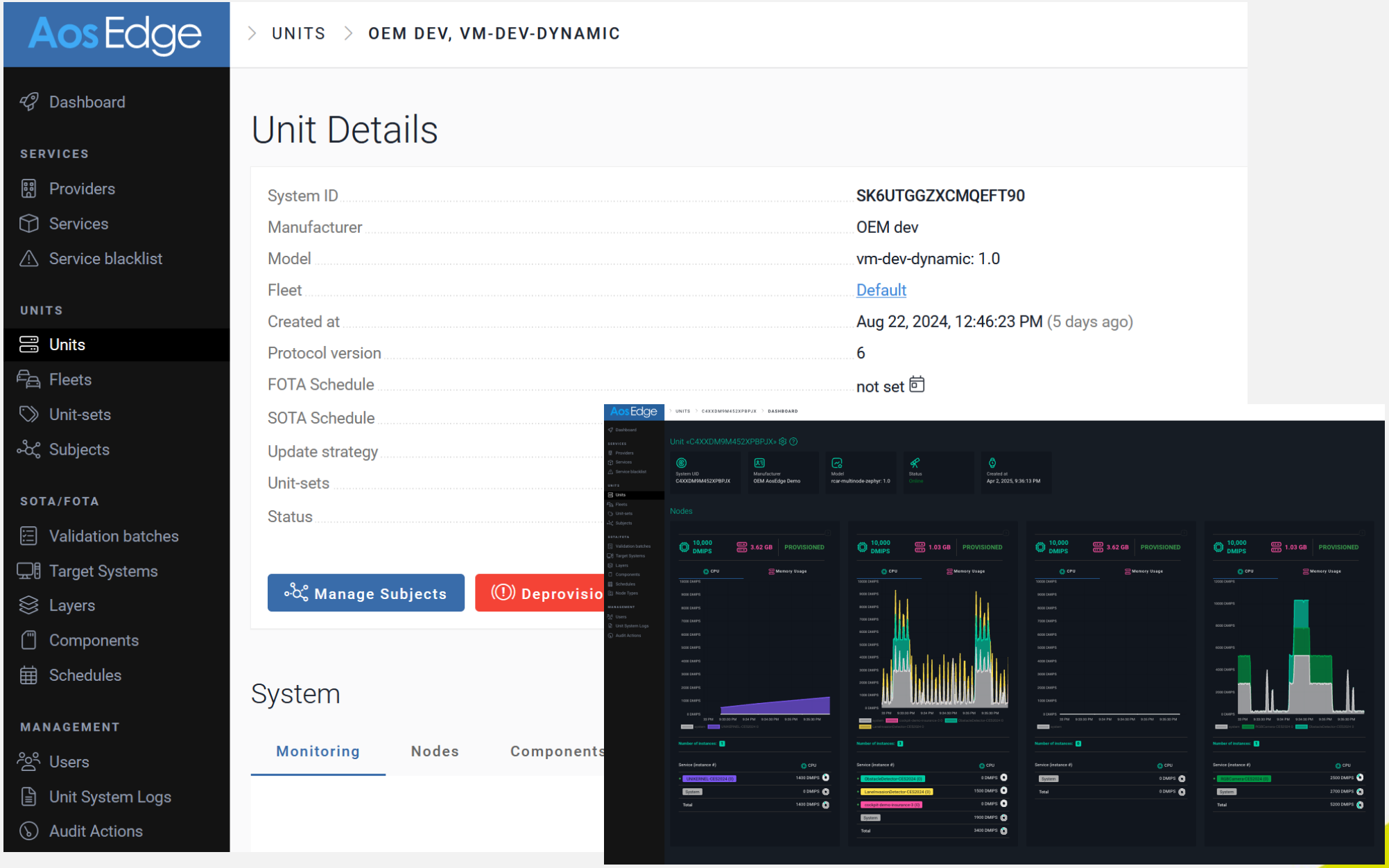
Current landscape is still ever so fragmented.

Better have a holistic framework, automotive-centric, with software/cloud/etc-native approach.

Architecture Proposal



AosCloud


AosEdge
UNITS
OEM DEV, VM-DEV-DYNAMIC
Dashboard
SERVICES
Providers
Services
Service blacklist
UNITS
Units
Fleets
Unit-sets
Subjects
SOTA/FOTA
Validation batches
Target Systems
Layers
Components
Schedules
MANAGEMENT
Users
Unit System Logs
Audit Actions
Unit Details
System ID
SK6UTGGZXCMQEFT90
Manufacturer
OEM dev
Model
vm-dev-dynamic: 1.0
Fleet
Default
Created at
Aug 22, 2024, 12:46:23 PM (5 days ago)
Protocol version
6
FOTA Schedule
not set
SOTA Schedule
Update strategy
Unit-sets
Status
Manage Subjects
Deprovisio
System
Monitoring
Nodes
Components

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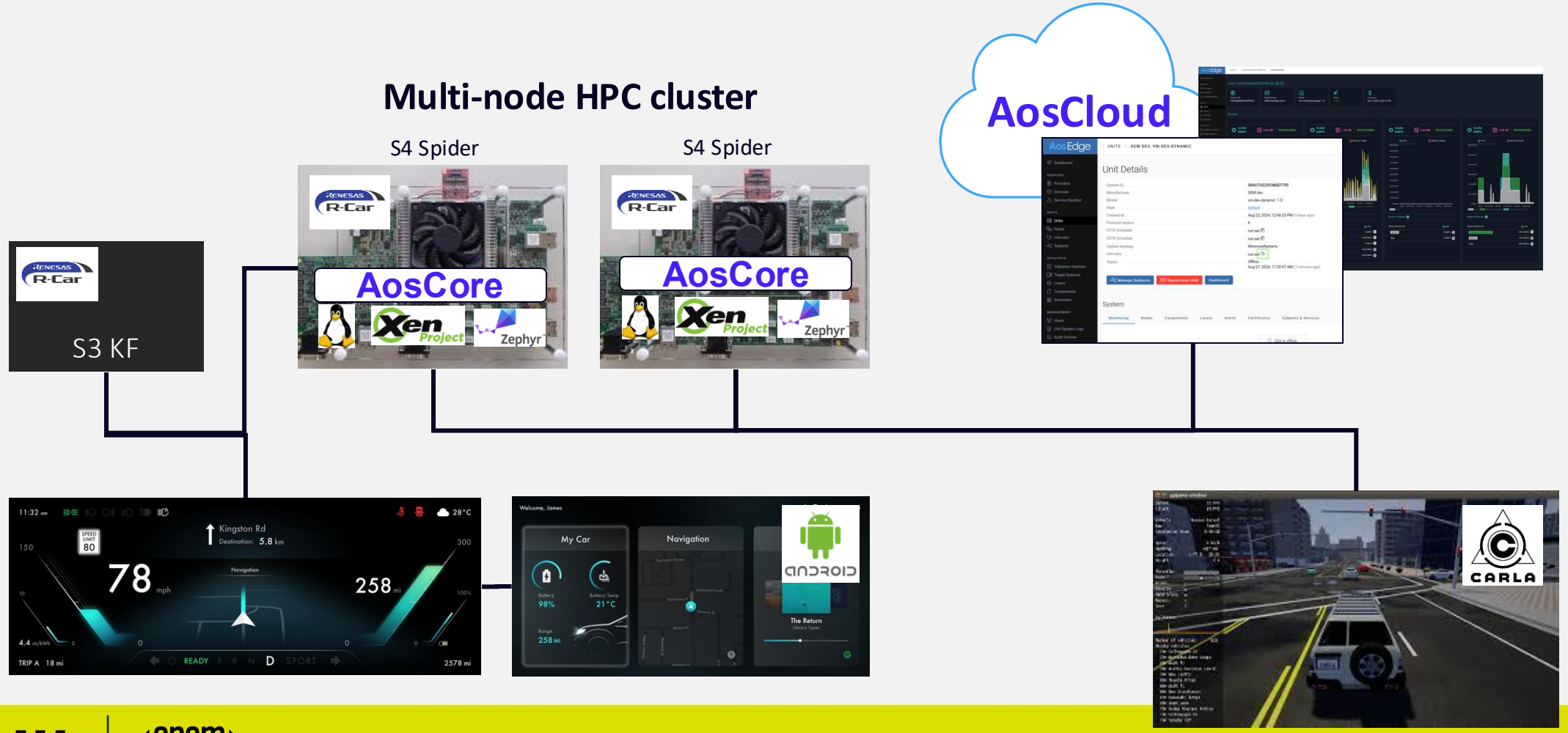
Demo booth

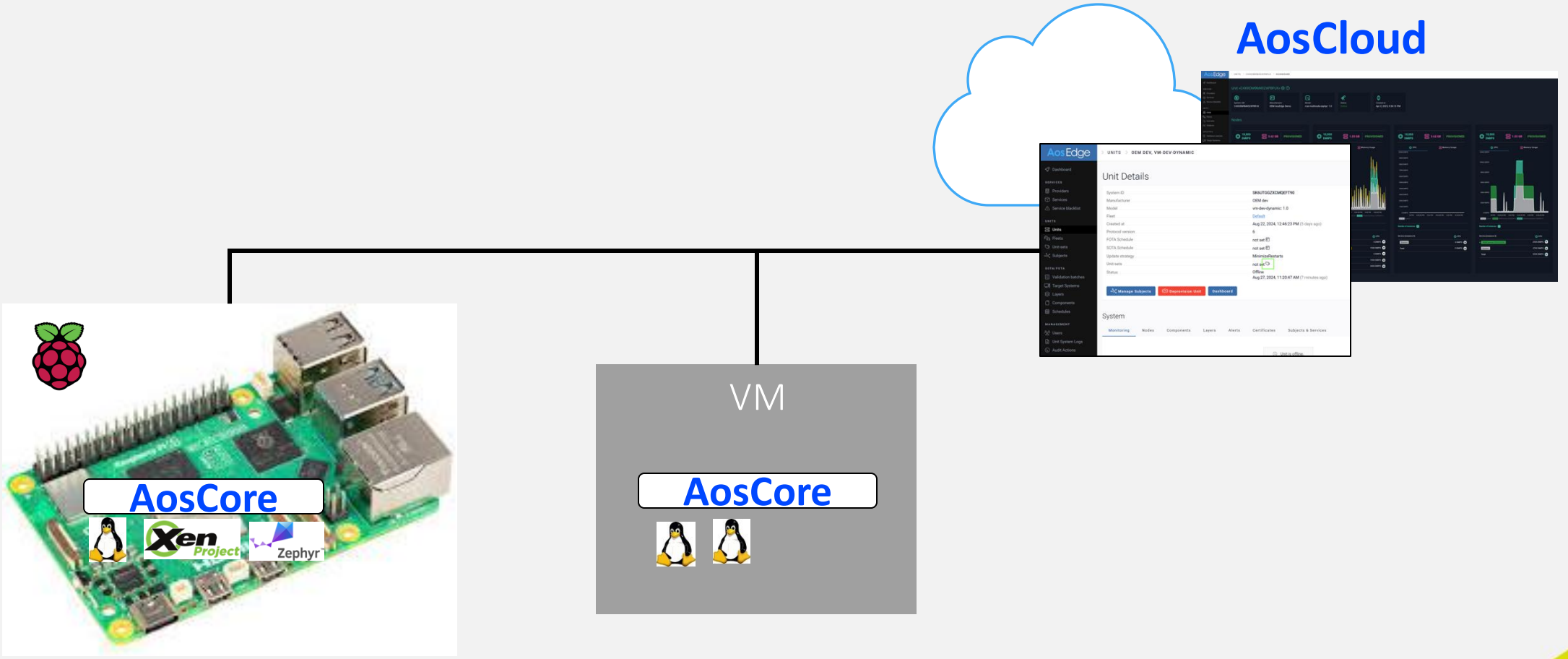
AosEdge

Holistic SDV architecture - Concept demo

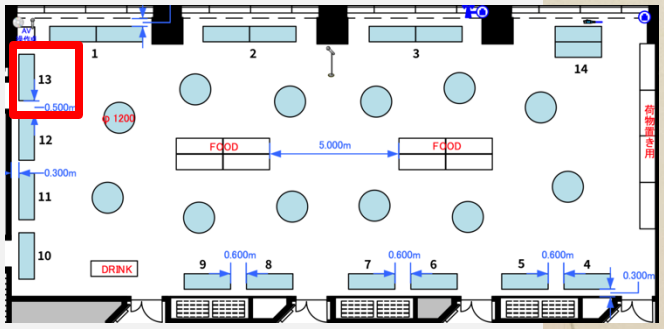


AosEdge

Seamless Deployment between **Rpi5** & Virtual



Demo booth



EPAM Swags! ->
snack, phone holder, smart tag!

Holistic SDV architecture - Concept demo

Seamless Deployment
between **Rpi5** & Virtual

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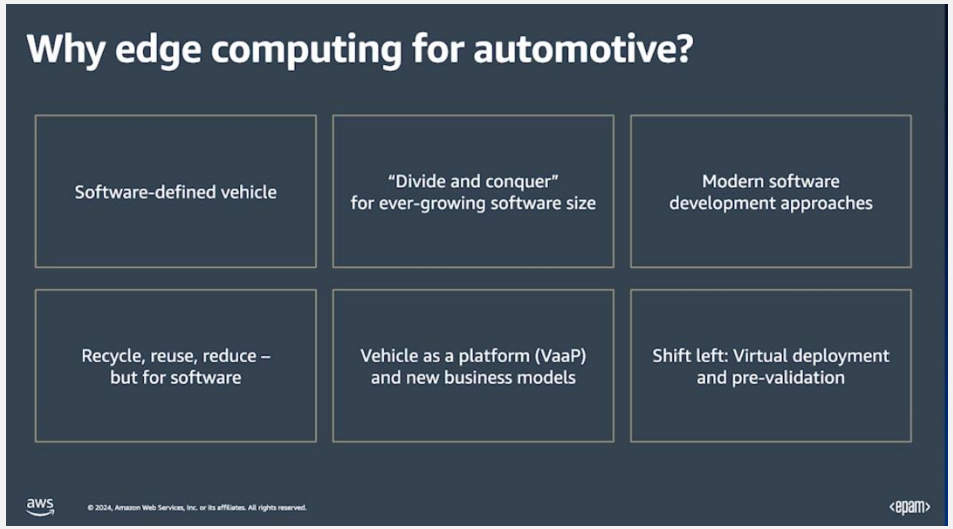
Get started

For more



2025 Open Source Summit Japan

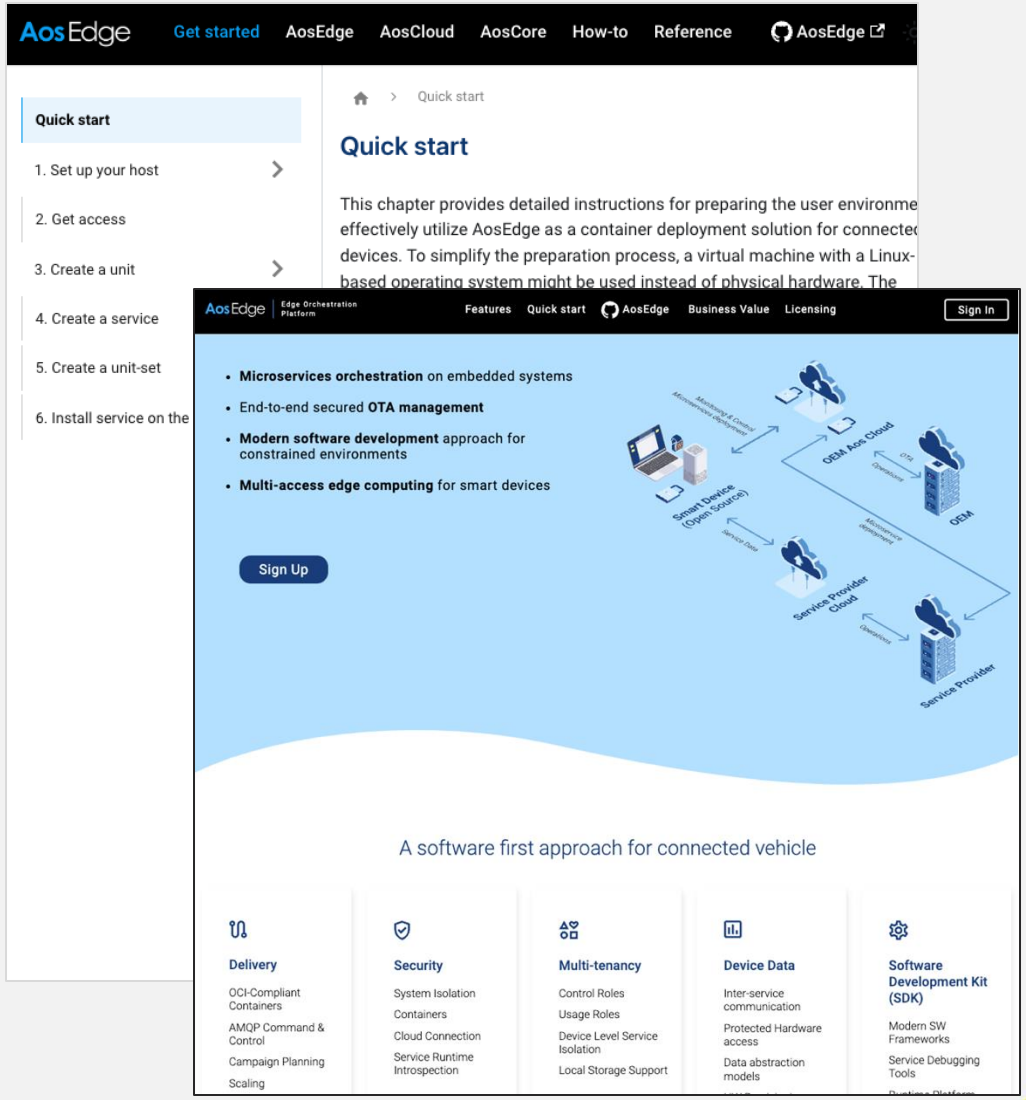
2024 AWS session at CES 2024

2022 SOAFEE Symposium

2019 Xen Summit

Get started

Website	https://aosedge.tech/
Doc	https://docs.aosedge.tech/
GitHub	https://github.com/AOSEdge
Quick start	https://docs.aosedge.tech/docs/quick-start/
Rpi 5	https://github.com/aosedge/meta-aos-rpi
CONTACT	Bucci_Kawabuchi@epam.com



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Thank You