

Intel® Network Builders Insights Series

Intel Network Platforms Group Strategy Overview Part 1

- George Ranallo, Intel® Network Builders Ecosystem, Marketing Manager
- Eric Levander, GM Solution and Scale, Network & Communication Sales
- William (Bill) McDonald, Segment Manager - Enterprise Edge / uCPE
- Prakash Kartha, Segment Director – Edge Services



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Welcome

First Session in a year long event

Released every month on the first Wednesday

Topics will include:

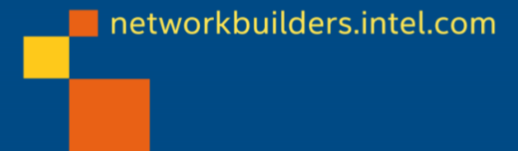
- Network technologies driving industry transformation and innovation
- Industry analysis and Intel's approach
- Product line overview
- Solution offerings from our partners
- Industry leaders as guest speakers sharing their views

Format:

- Registration needed to respond to questions
- Lightning round no longer than 15 minutes for a cumulative 60 minutes of new content
- Contact speakers directly via email to learn more about their sessions

Intel®
Network Builders
ECOSYSTEM
PARTNER

Accelerating Network
Transformation for a Cloud
Native Future



networkbuilders.intel.com

intel®

Kicking off the year

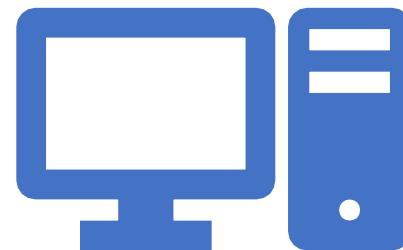
- Intel® Network Builders has over 400 member companies and tens of thousand developers, partners, and customers.
- Customer are increasingly looking for complete commercial solutions. This can get complex and often requires multiple partners to collaborate.
- Our members value the exchange of open platforms and open communication – this is a new channel to reach out to our members & other interested parties.
- Intel® technology is the foundation across many different workloads, we want to share our vision and hear from you as we travel this network transformation and innovation journey together.
- Intel is invested across the whole value chain - from silicon & software to complete solution adoption - which gives us a good view of market developments.

Agenda



Network for Enterprise and Cloud Strategy

William (Bill) McDonald,
Segment Manager - Enterprise Edge / uCPE



Edge Solutions Overview

Prakash Kartha,
Segment Director – Edge Services

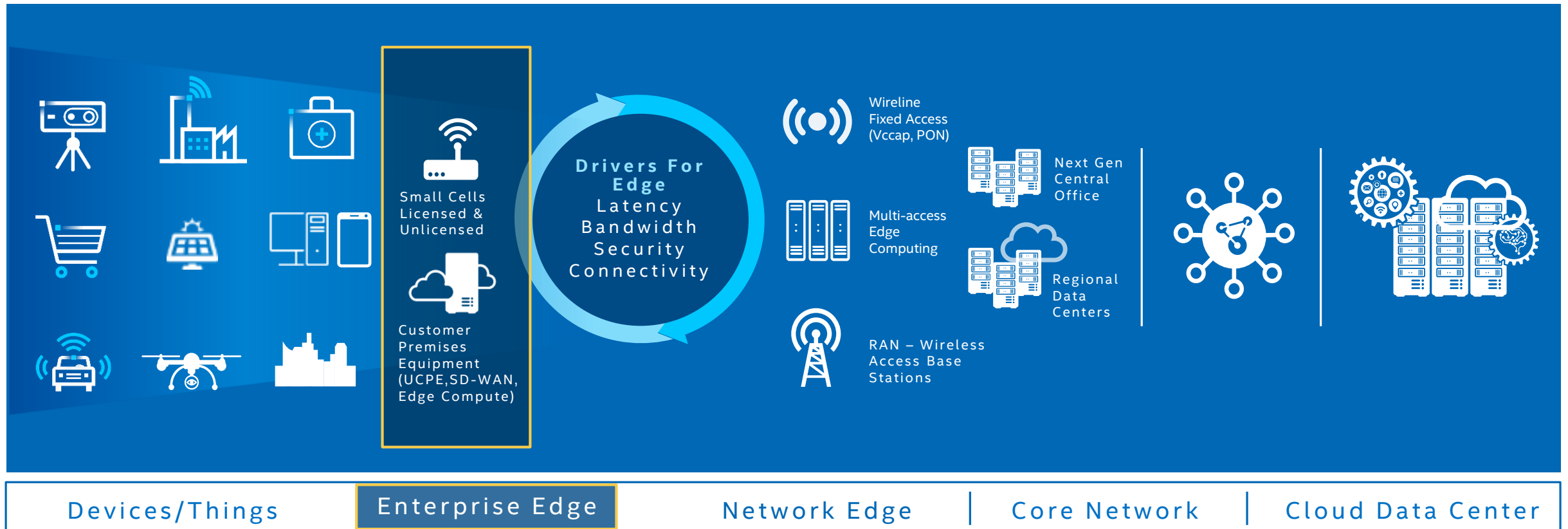


Intel® Network Builders Insights

Network for Enterprise and Cloud Strategy Overview

William (Bill) McDonald, Segment Manager - Enterprise Edge / uCPE

Workload Convergence at the Enterprise Edge



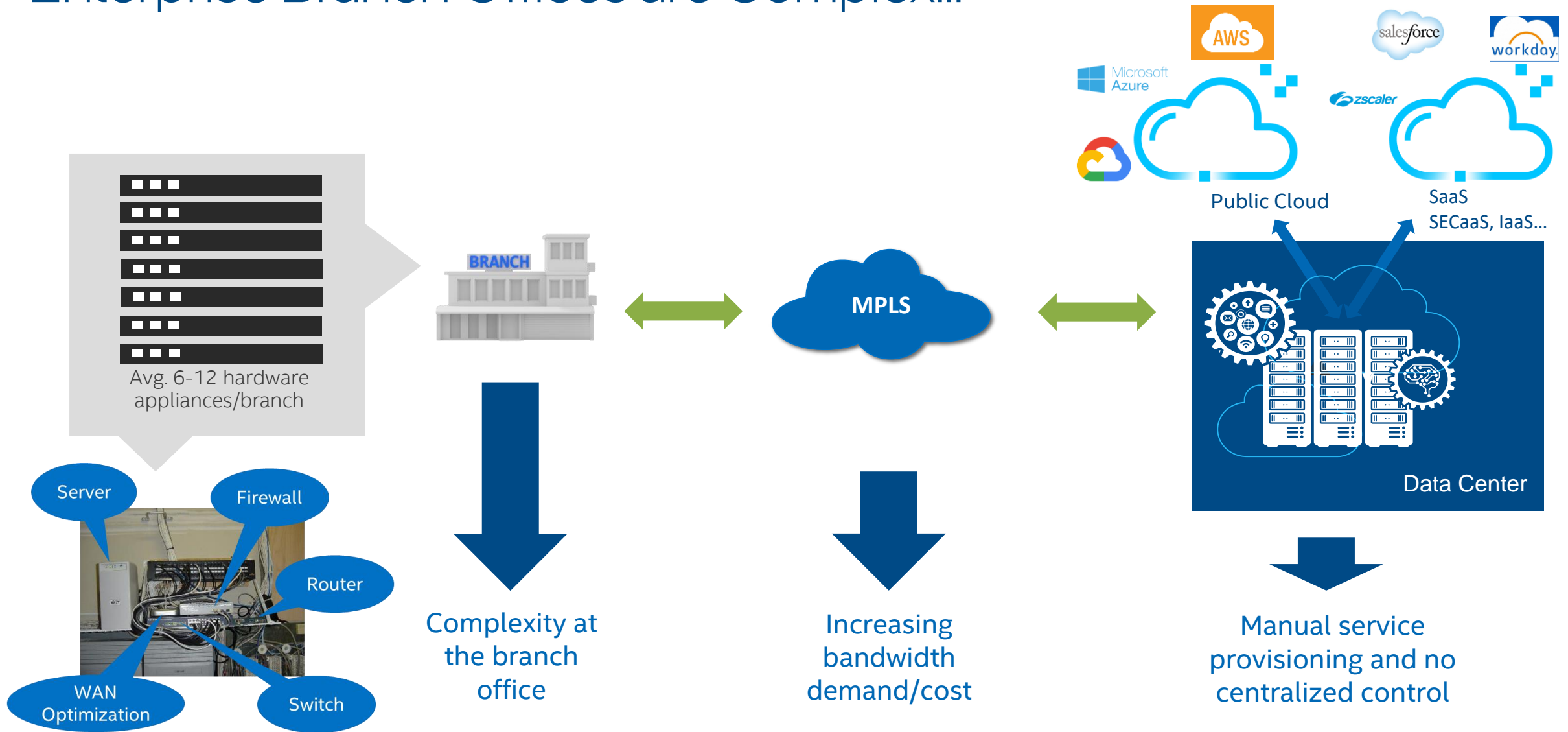
Convergence of
IT, OT & CT Workloads
Workload convergence
a key enabler for service innovation

IOT Journey To The Edge

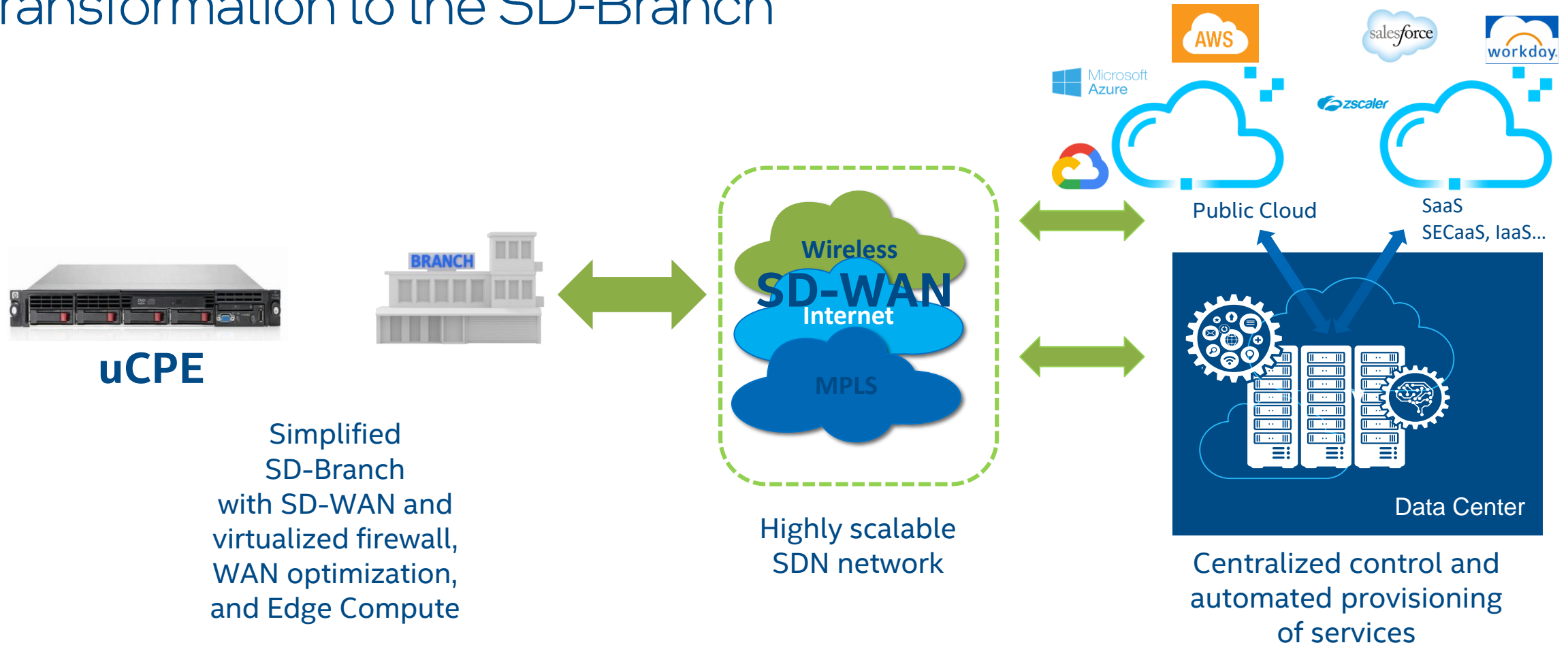
Network Journey To The Edge

1. Gartner; <https://www.gartner.com/smarterwithgartner/what-edge-computing-means-for-infrastructure-and-operations-leaders>

Enterprise Branch Offices are Complex...

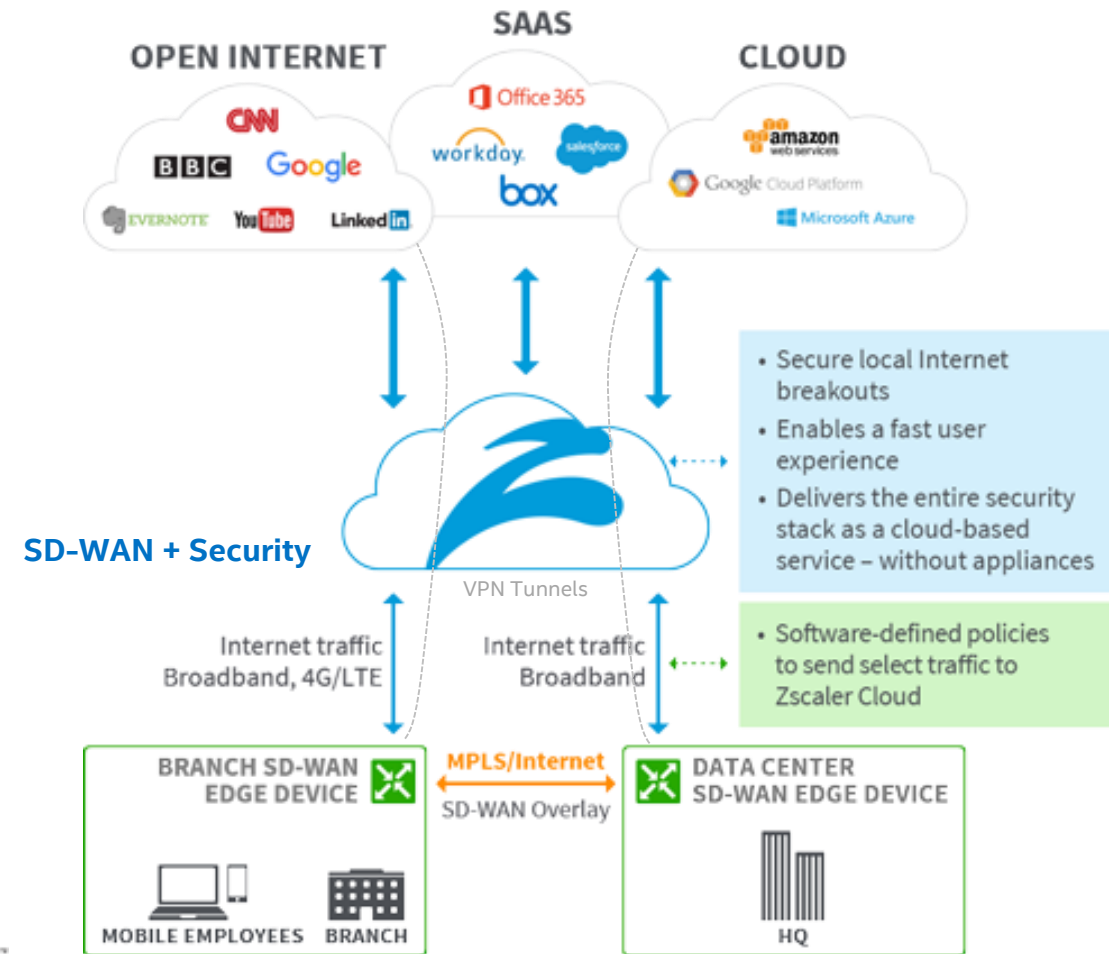


Transformation to the SD-Branch



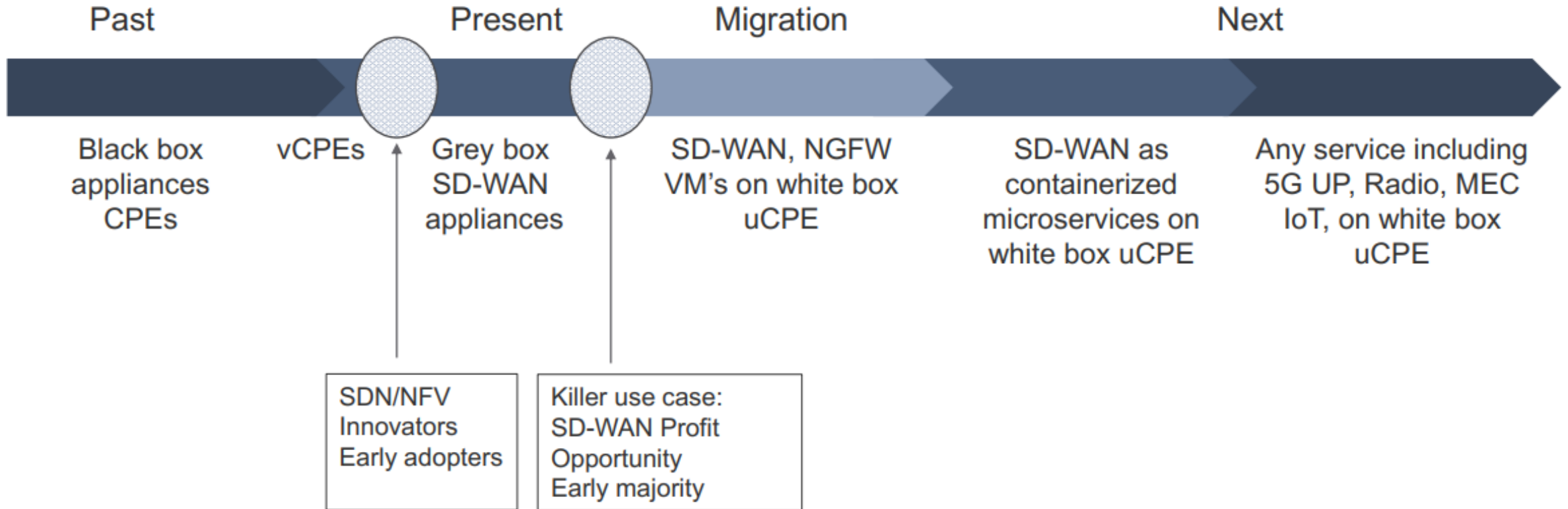
SD-WAN is Driving Adoption of Cloud-based Security (SECaaS or SASE) at the Enterprise Edge

- SD-WAN simplifies Cloud access for branch offices
 - Control, service provisioning, broadband WAN connectivity
 - Enables SECaaS / SASE vendors to offer off-prem. security services over the Internet
- Branch offices can address their security needs without needing security equipment on-prem. or backhauling traffic to centralized DMZ
- Suitable for very small offices where dedicated firewalls are not necessary



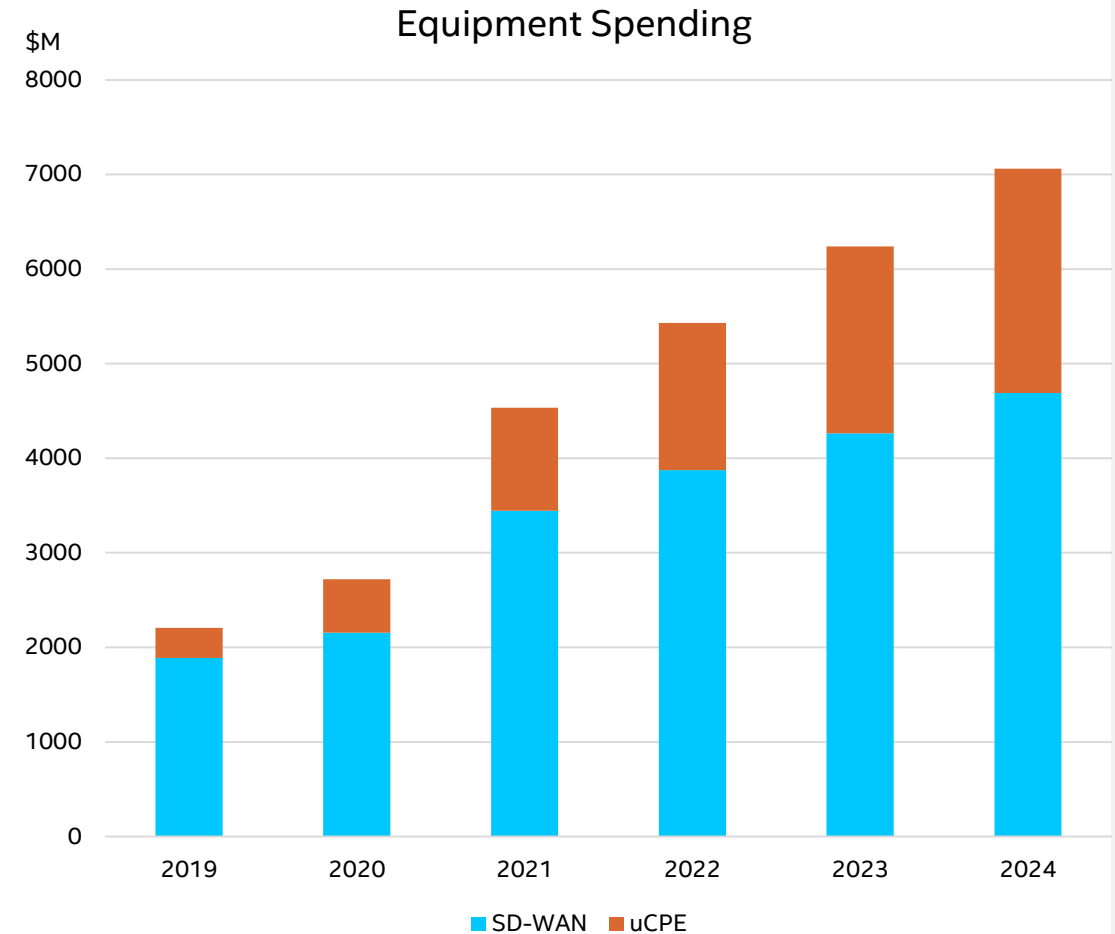
Source: Zscaler

Enterprise Edge Migration

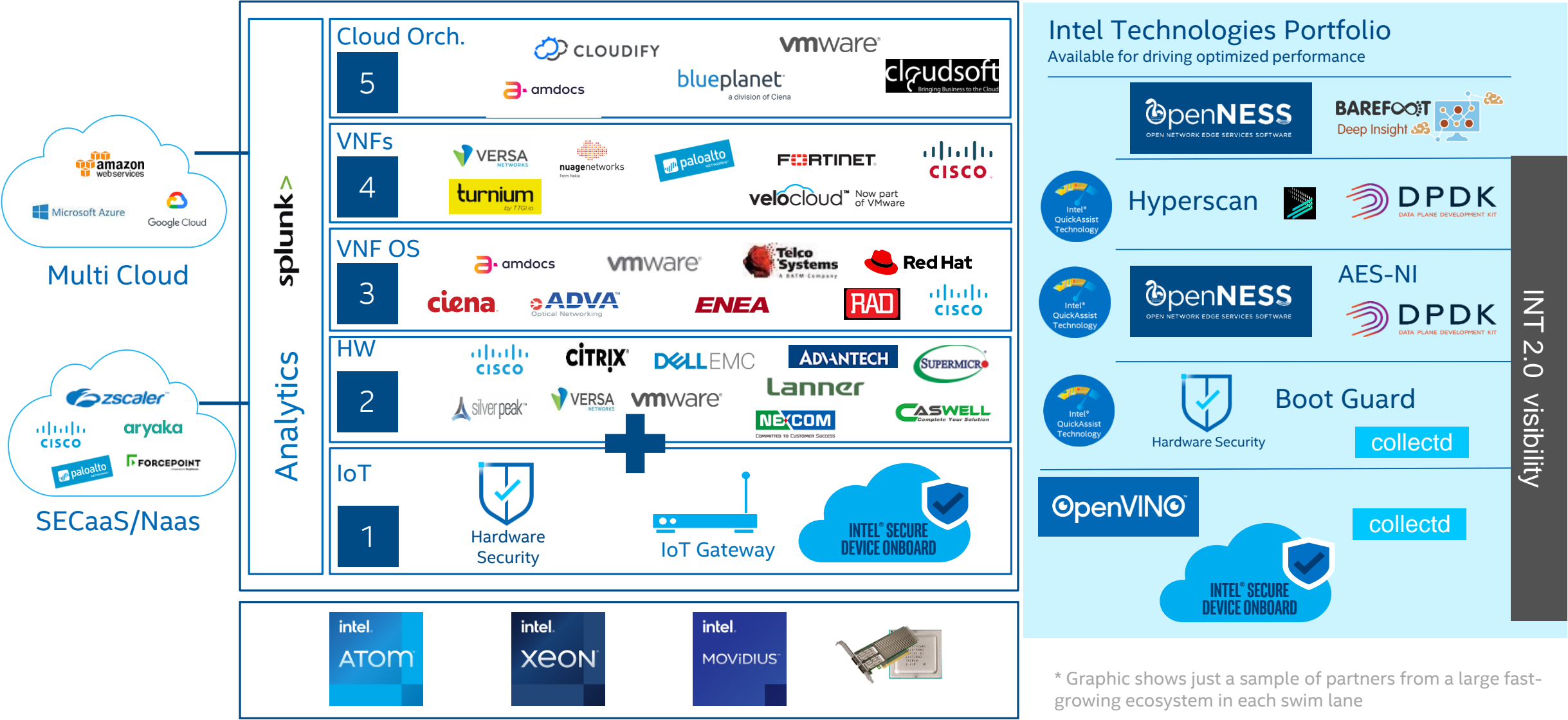


Enterprise Edge Market Dynamics

- Edge platforms are broad in scope but have become anchor points for Enterprise services
- SD-WAN has become the WAN connectivity of choice with deployment ramp
 - Deployments are still mostly bare metal
 - Provides underlying infrastructure for a new generation of services: Cloud marketplace, IoT, Analytics, Security, 5G ,
 - Enables OTT services (e.g. Naas/SECaas) -> attractive for SMBs/WFH
- NFVi is proving to be more challenging than expected; projected to start ramping in '22
- Edge platforms ultimately need to support services that are bare metal, virtualized and cloud native

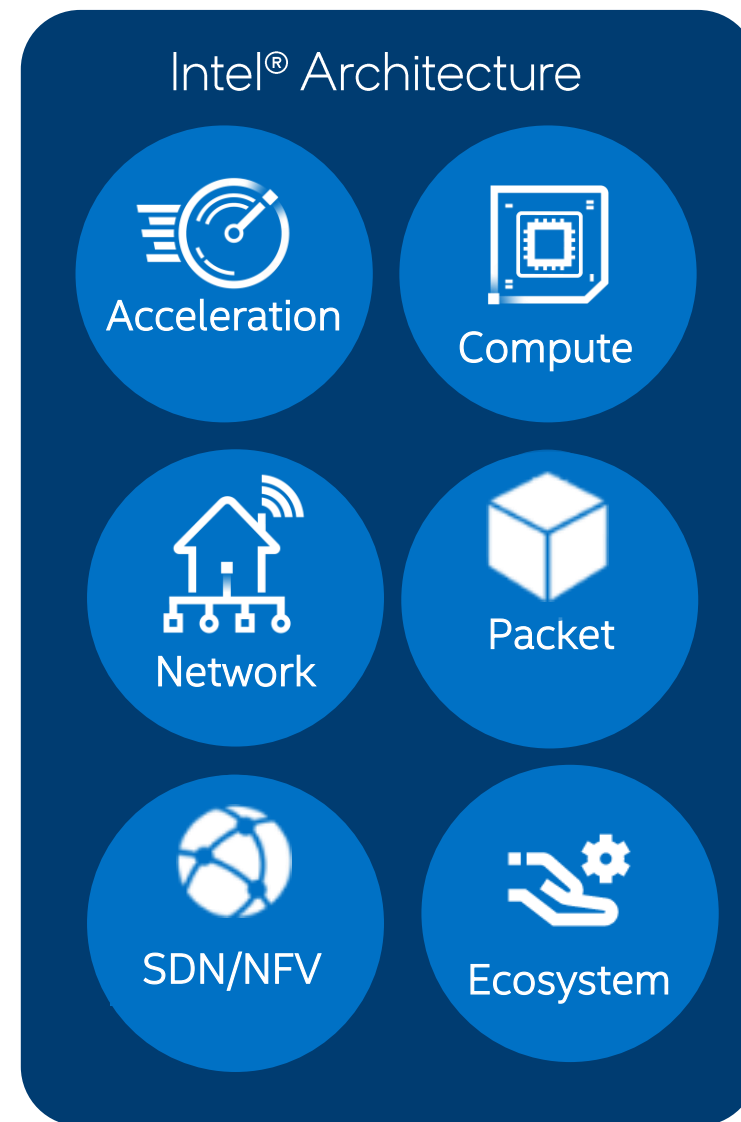


Multicloud-Edge-IoT Reference Architecture



Summary

- Intel is investing in network transformation
- Providing a comprehensive suite of products and technologies that enable differentiated Edge solutions
- Enabling a rich ecosystem of uCPE/Edge vendors and technology partners that deliver best in class products
 - Reference designs and software toolkits
 - Performance optimization



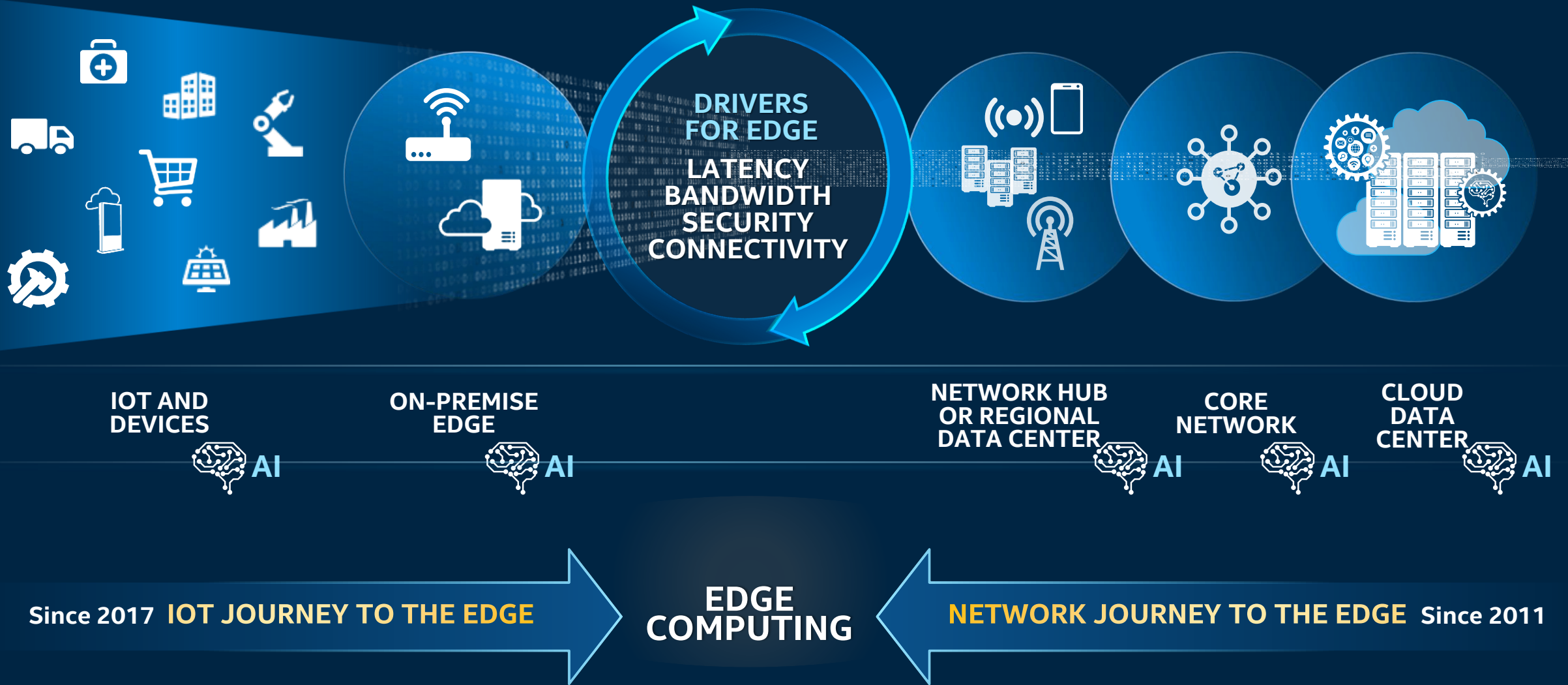


Intel® Network Builders Insights

Intel Edge Solutions Overview

Prakash Kartha, Segment Director – Edge Services

THE MOMENTOUS SHIFT TO THE EDGE



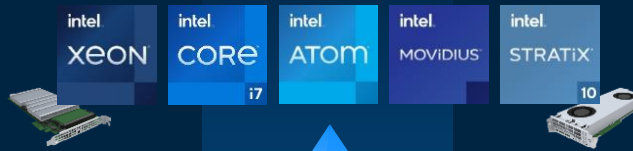
DELIVERING BUSINESS OUTCOMES AT THE EDGE

KEY MARKETS

INDUSTRIAL
RETAIL
EDGE AI/VISION
VISUAL SERVICES

DIVERSE PRODUCT PORTFOLIO

WITH EDGE SPECIFIC OPTIMIZATIONS,
FEATURES AND ACCELERATORS



CRITICAL WORKLOADS

AI
NETWORK
MEDIA

VAST ECOSYSTEM SCALE

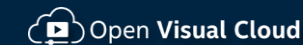
SCALE WITH ECOSYSTEM
TO ACCELERATE DEPLOYMENTS
AND DELIVER RESULTS



Intel® Network Builders

ROBUST SW & TOOLKITS

DRIVING CONVERGENCE OF
ANALYTICS, MEDIA AND NETWORKING WITH
VERTICAL SPECIFIC OFFERINGS

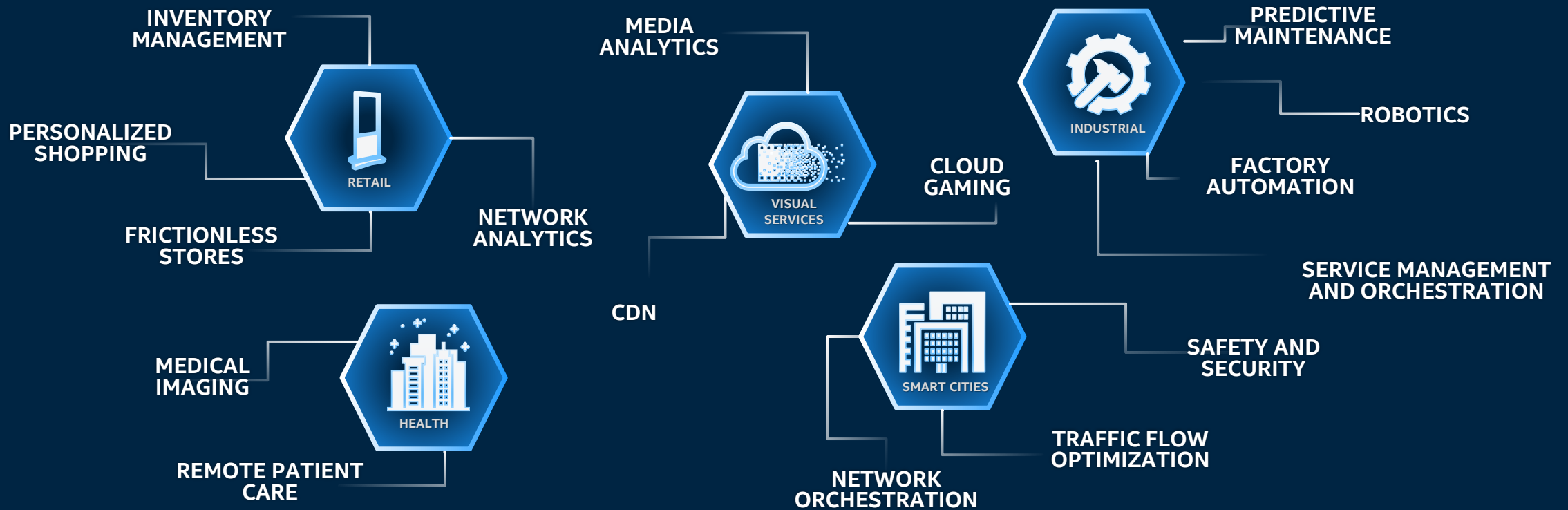


DELIVERING RESULTS AT THE EDGE WITH ECOSYSTEM

1,200+ ECOSYSTEM PARTNERS
FOR THE EDGE

300+ EDGE SOLUTIONS
USE CASE SPECIFIC

15,000+ END USER DEPLOYMENTS ¹
UNIQUE SINCE 2018



¹ Source: Based on internal Intel information

Use Cases By Location

DEPLOYMENT TIERS



ON PREMISE EDGE



NETWORK EDGE



CORE DC



PUBLIC CLOUD

USECASES MAPPING

vRAN

NFV

Sensor processing, Smart Cities Video Analytics ... (Smart City)

Manufacturing (Industrial)

Surveillance, Retail Posture Analytics, Retail sentiment analysis ... (Retail)

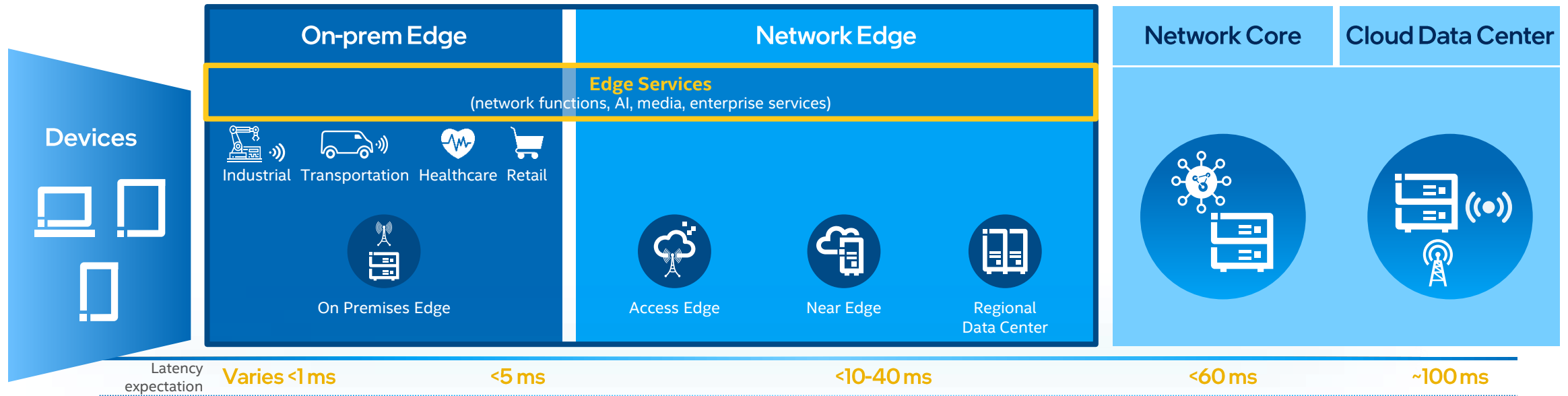
AR/VR & Gaming

AR/VR & Gaming

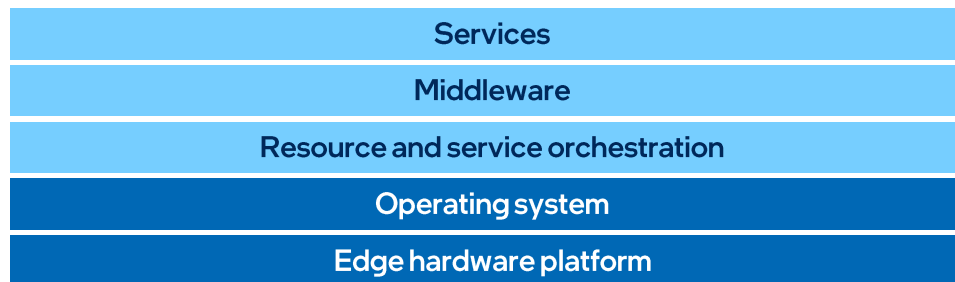
CDN Data caching & Persistent Storage GW + Analytics

Chat Boot, Transcript, Biometry (Speech Analytics)

Delivering Cloud Native Platforms for the Edge



Lower TCO with a consistent cloud native platform approach across edge locations



Key challenges to overcome

- Deliver platform consistency & scalability across diverse edge location requirements
- Optimize cloud native frameworks to meet stringent edge KPIs and network complexity
- Leverage a broad ecosystem and evolving standards for edge computing

Open Network Edge Services Software: OpenNESS

OpenNESS is an edge computing software toolkit that enables **highly optimized and performant edge platforms** to on-board and manage applications and network functions with **cloud-like agility across any type of network**



Modular



Consume as a Whole or as
Individual Building Blocks



Microservices
Based Architecture



Top Use Cases

Access Edge
Aggregation Point
(Cloud Native
RAN + Apps)

Near Edge
(5G dUPF + Apps)

uCPE/SD-WAN + Apps

AI/vision inferencing
apps with MEC

Media apps with MEC

OpenNESS Building Blocks

Multi-access Networking	Edge Multi-cluster Orchestration	Edge Aware Service Mesh	Confidential Computing	Edge WAN Overlay
Resource Management	Data Plane CNI	Accelerators	Telemetry and Monitoring	Green Edge

Built on an Open Cloud Native Foundation

Kubernetes	Service Mesh	Telemetry	Helm	Operator Framework
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Key Features

Optimized for Edge KPIs:
throughput, determinism,
QoS, latency, jitter, security

Multi-location, Multi-Access,
Multi-Cloud

Delivered via use case
specific Reference
Architectures for ease of
consumption and to
accelerate TTM

Industry Standards (3GPP,
CNCF, ORAN, ETSI)

OpenNESS Consumption Models

1 Individual Building Blocks



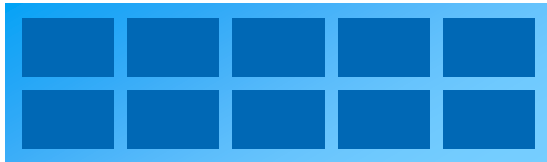
Consume individual blocks that address specific pain points or drive value

Infrastructure Developers

Building Blocks

GitHub

2 Integrated Whole as a Reference Architecture



Consume as an integrated whole into commercial solutions, resulting in faster TTM and accelerated deployments

Infrastructure Developers

CERA

GitHub

App Developers

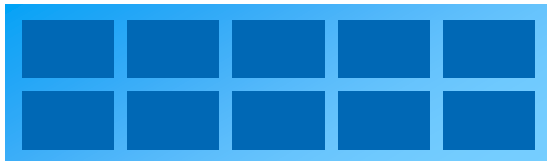
Azure Dev Kit

System Integrators

Converged Edge Insights

Hardware Dev Kits

3 Commercial Hardened Software (Smart Edge)

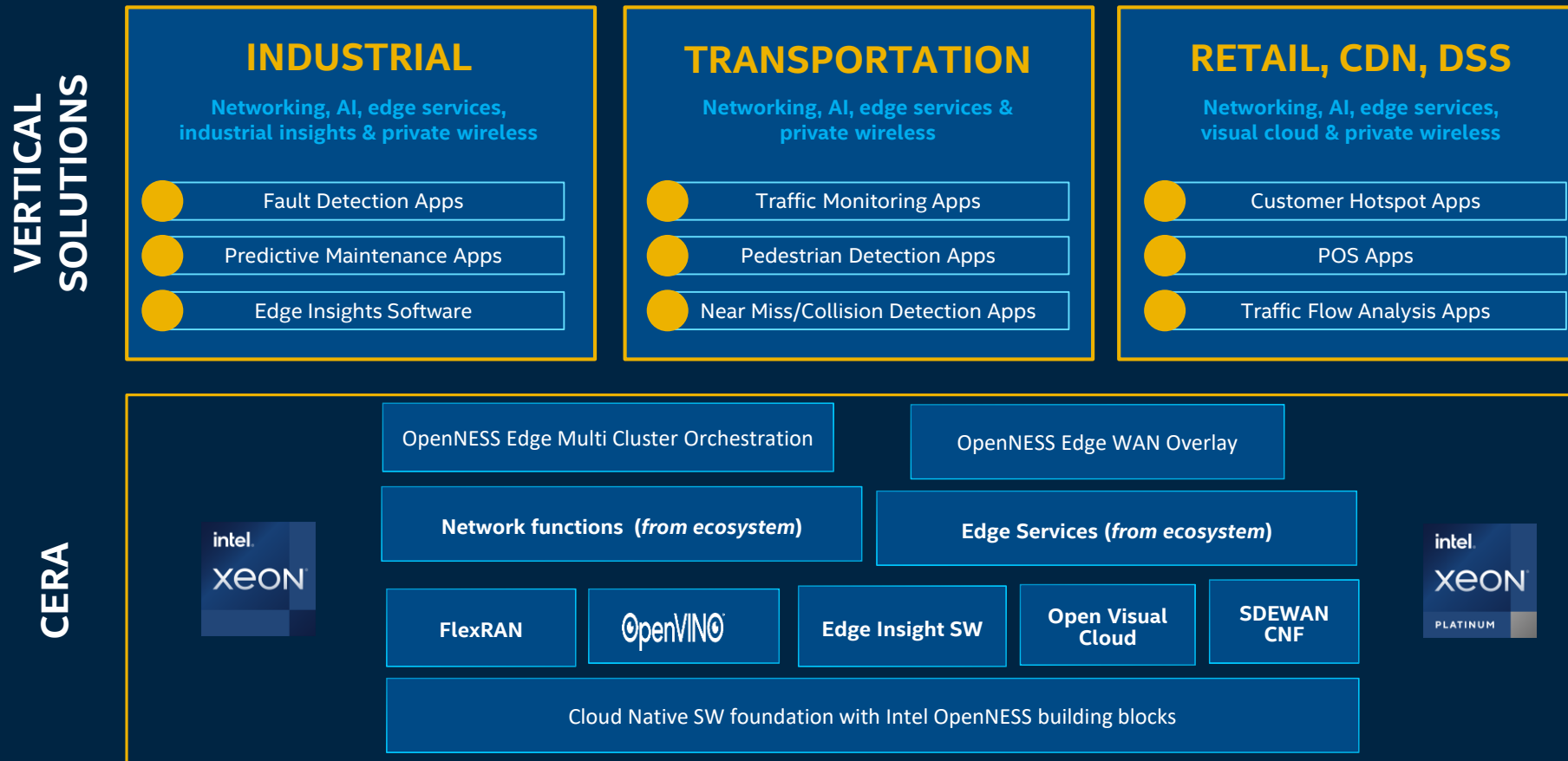


On-Premise Enterprise Customers
- Consume as a ready to deploy commercial software stack

Private Wireless Enterprise Customers

CERA

CONVERGED EDGE REFERENCE ARCHITECTURE (CERA)



intel
smart edge

Commercial
Implementation for
On-Premises

A Common Reference Architecture for building Vertical Solutions

Summary

Call to Action: Engage in OpenNESS and Converged Edge Reference Architecture to design optimized Edge solutions leveraging Intel Architecture

Questions?

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Prakash Kartha, Segment Director – Edge Services

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The Intel logo is centered on a solid blue background. It features the word "intel" in a white, lowercase, sans-serif typeface. A small, bright blue square is positioned above the first vertical stroke of the letter "i". To the right of the word "intel" is a small white registered trademark symbol (®).

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