Reflection of Edge Computing and the OEC

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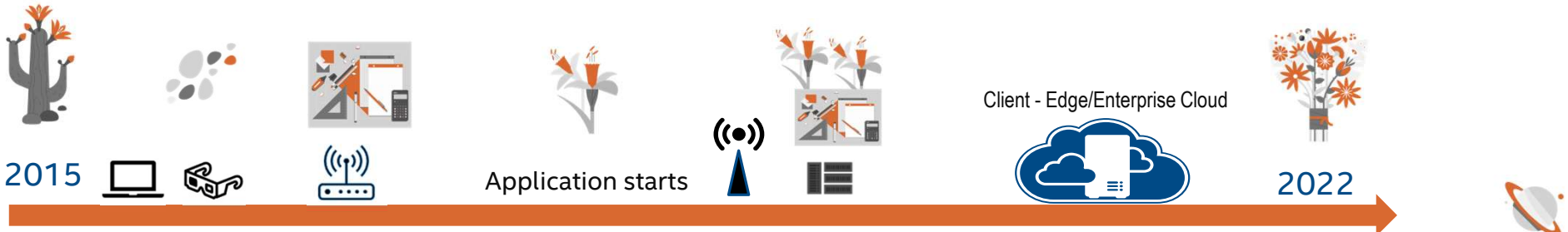
Intel Corporation

The Vision of OEC is Here



Small Core team

Art of Possible Come together:
- Cloudlets, MEC systems
- Governance
- OEC Team Growth
- Proposal of live lab

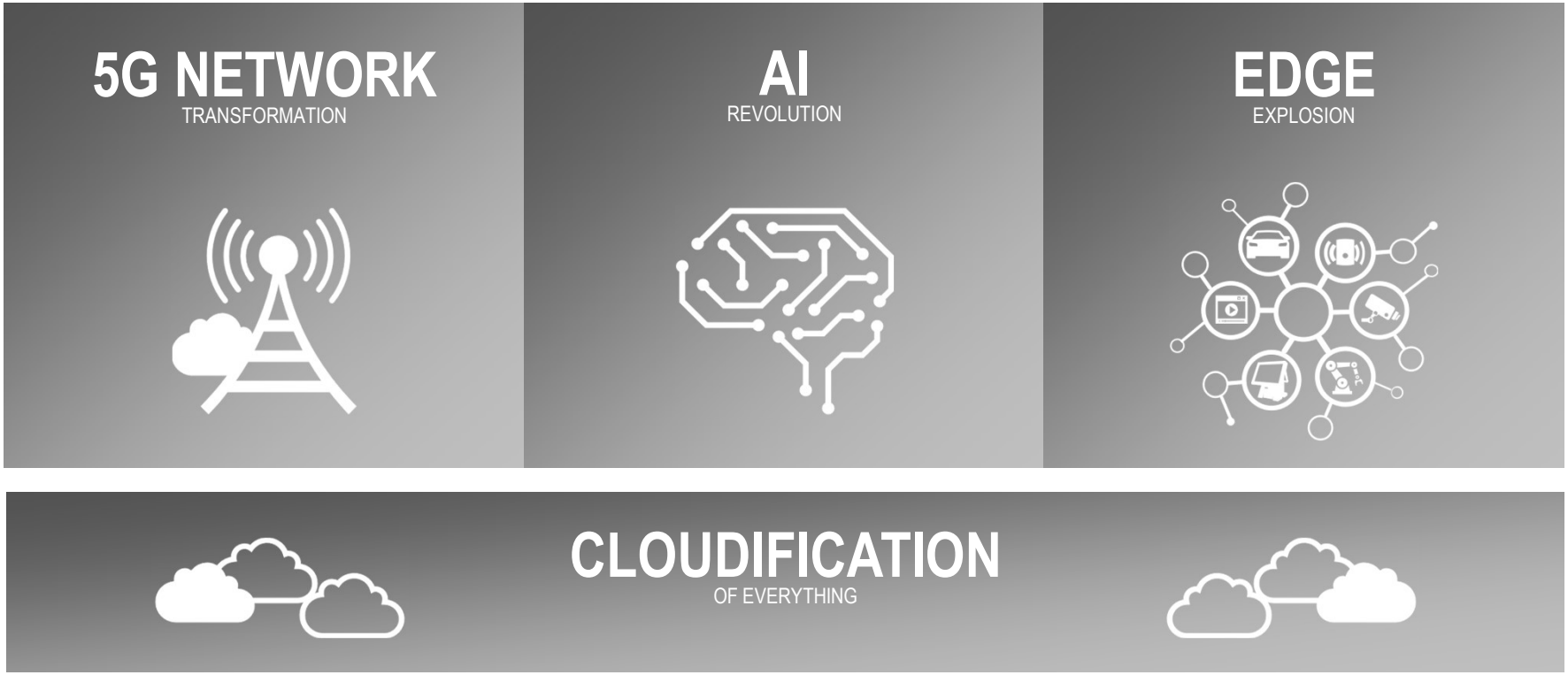
Lights On: Living Edge Lab

Applications from client to edge to cloud

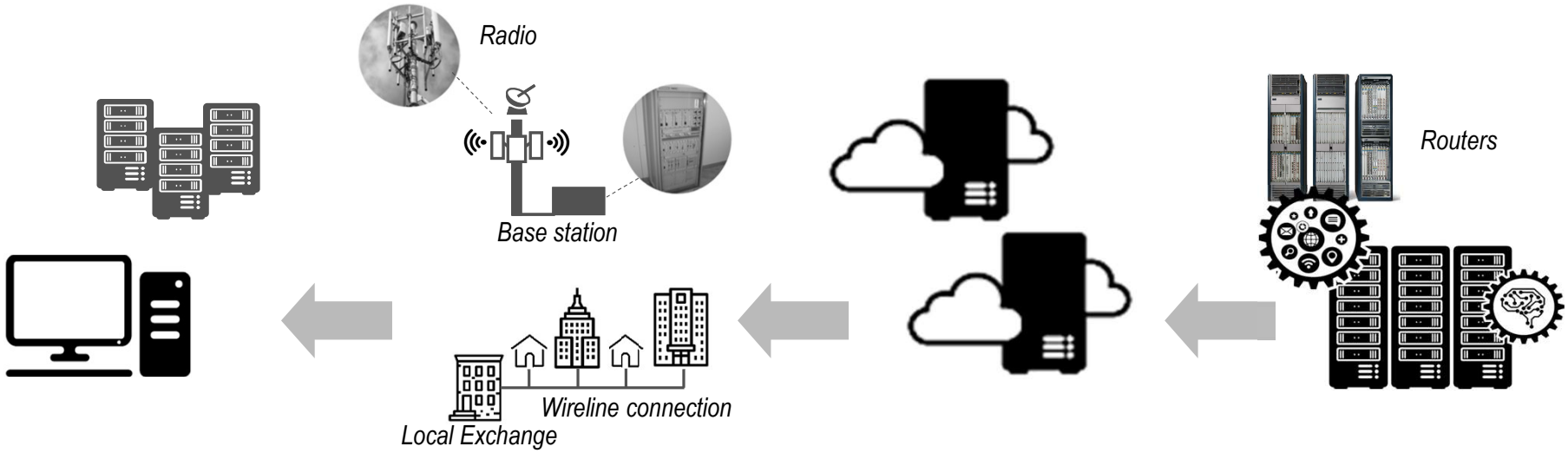
Graduation! Learnings, Relationships, Go Forward

OEC Vision Meets Industry Evolution

A New Compute Paradigm Supports New Data Demands



5G Network Taxonomy



On Prem Edge

Customer & data center networking equipment
(e.g. routing, security, application delivery)

Access Edge

Connections to users
(e.g. base stations, Radio Access Network)

Network Edge

Central offices
(e.g. cable access platform, broadband gateways, virtual provider edge)

Core

Wireless core & Network backbone
(e.g. 5G core & wired network backbone)

AI and Cloudification of Everything

What Is A Private 5G Network?

A wireless network set up specifically for dedicated use to drive better coverage & control

Comparing public and private networks

Private

- Spectrum owned by enterprise or CoSP
- Network management flexibility
- Targeted coverage, for example, campuses, arenas, retail
- Versatile deployment options for vertical use cases

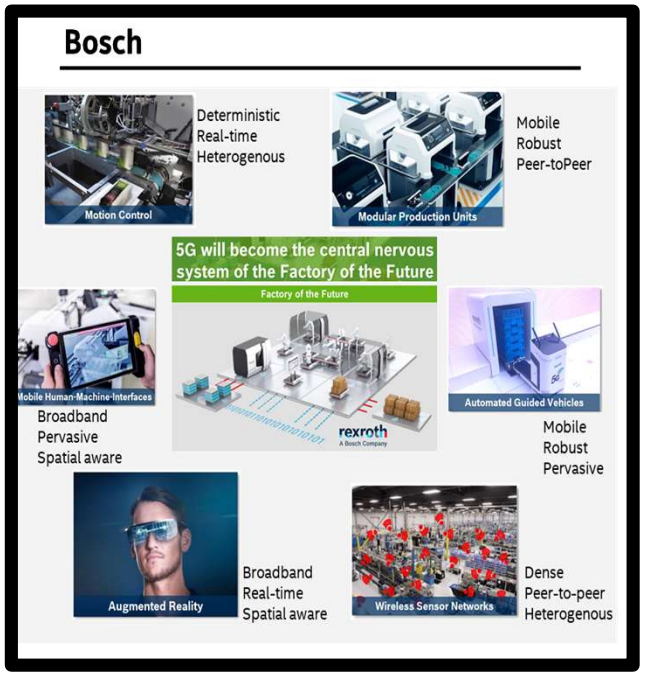
Hybrid

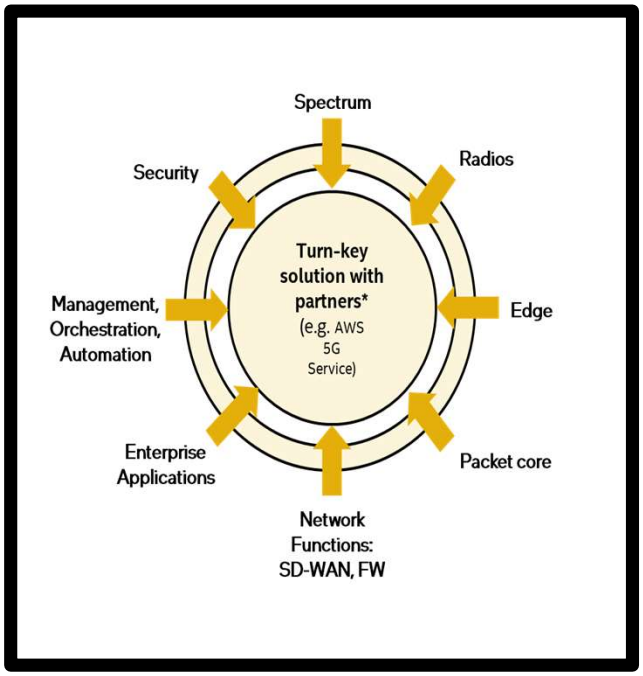
Uses public and private aspects and network slicing to reduce complexity and cost while increasing capabilities

Public

- Communication service provider-owned spectrum
- Provider manages network and scalable services
- Broad coverage across a wide area
- Licensed spectrum, including mmWave

Private Networks & Multi-access Edge Computing (MEC) 2.0



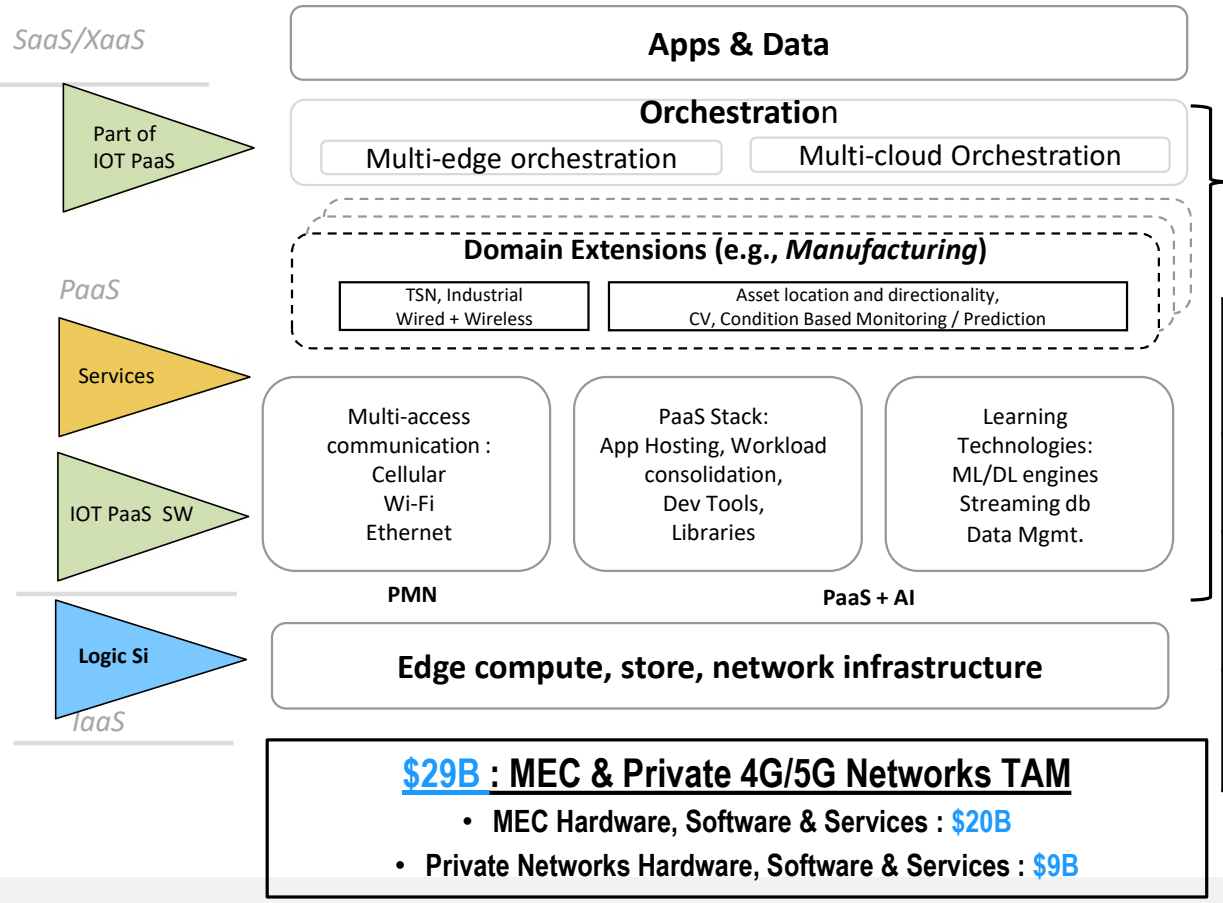


Pull from Software-Defined Transformation underway in Industry 4.0

Co-Existence with Wired/Wifi required for Mission-Critical & Non-Mission-Critical

Critical to address Enterprise Pain-Points with Integrated "Easy Button" to simplify network complexity

Private Networks & MEC 2.0
-> Fast Growing Market Opportunity ’21 - ‘26



Domain Specific PaaS: E.g. Manufacturing
Potential TAM $44B - $64B (100% transformed)
’26 likely transformed TAM/SAM $7B-$10B

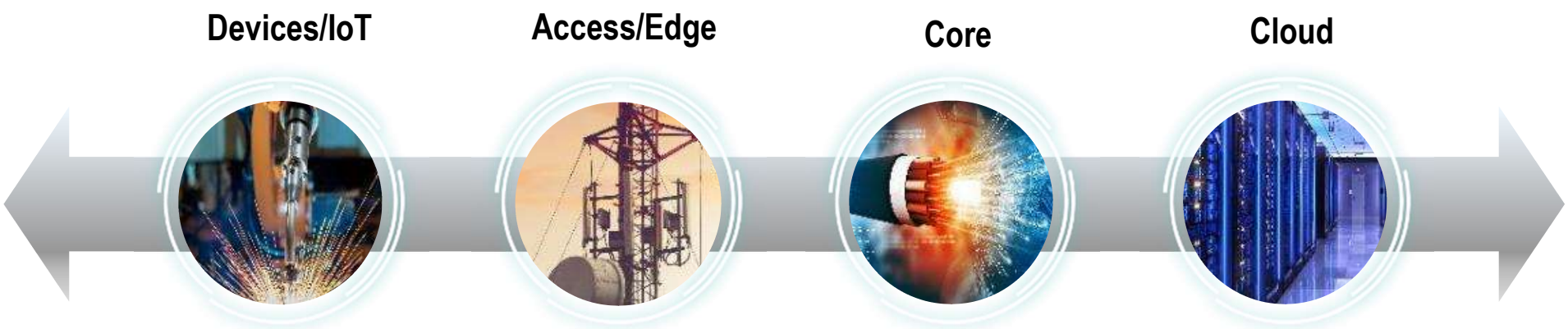
	Private Networks (RAN/Core/Transport)		MEC 2.0 (IOT PaaS + AI framework)	
	’21	’26	’21	‘26
Services	$0.7B	$4B	$7B	$27B
	(40% CAGR)		(31% CAGR)	
Software	$0.3B (VNFs/CNFs + NFVI)	$3B (VNFs/CNFs + NFVI)	IOT PaaS $4B** (AI Portion $2B)	IOT PaaS $14B** (AI Portion $7B)
	(55% CAGR)		(31% CAGR)	
Logic Silicon (Appliance & SBN)	$0.4B	$2B	$1.4B	$6B
	(42% CAGR)		(34% CAGR)	

$29B : MEC & Private 4G/5G Networks TAM

- **MEC Hardware, Software & Services : $20B**
- **Private Networks Hardware, Software & Services : $9B**

Sources: IDC, Gartner, Omdia, Mobile Experts, Intel Judgement

Building the Foundation for the 5G Era



INTEL PORTFOLIO SPANNING DEVICES, NETWORK, AND CLOUD

PROCESSORS

ACCELERATORS

MEMORY

CONNECTIVITY

INTEL® ETHERNET CONTROLLER

INTEL® SILICON PHOTONICS

SOFTWARE

OpenVINO

OPENNESS

SMART EDGE

Edge Compute and Private Network Deployments

INDUSTRIAL

- Autonomous Mobile Robots
- Textile Defect Detection
- Virtual Power Protection Relay
- PCB Defect Detection

CITIES & TRANSPORTATION

- Intelligent Traffic Management
- Smart Campus
- Marine Port Truck Access-Gate Automation
- Smart Spaces

EDUCATION

- Remote Education
- Remote Testing
- Recording / re-runs

RETAIL

- Inventory Management
- Personalized Shopping
- Frictionless Stores
- Customer Traffic Monitoring

Ports Indoor /Outdoor Connectivity

Mfg. w/ real-time data collection and analysis

Integrated Wired/ Wireless Motion Control

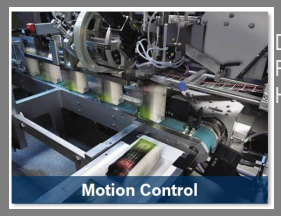
Protecting / transmitting video surveillance data

Remote Facility monitoring

Manufacturing Facility Reconfiguration

Manufacturing Example: Reconfigurable factory of the future

Bosch

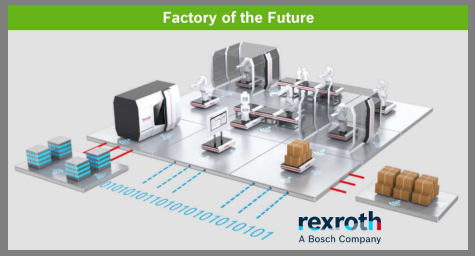


Deterministic
Real-time
Heterogenous

Mobile
Robust
Peer-toPeer

5G will become the central nervous system of the Factory of the Future

Broadband
Pervasive
Spatial aware



Mobile
Robust
Pervasive

Broadband
Real-time
Spatial aware

Dense
Peer-to-peer
Heterogenous

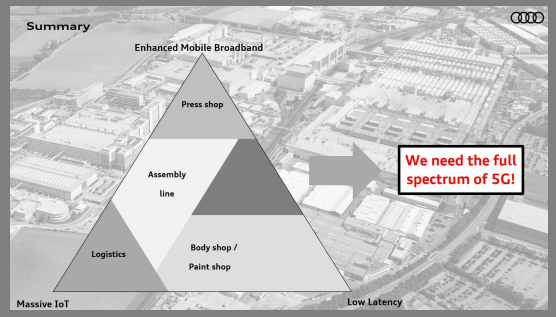
Audi

Connected Tool

Mobile
Spatial aware
Interoperable

Pervasive
Secure
Spatially aware

Car2Factory



AGV

Mobile
Robust
Pervasive

AMR

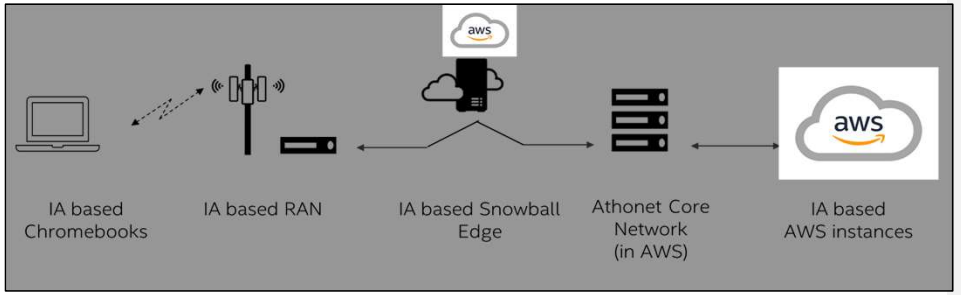
Mobile
Time aware
Spatial aware

Robot Control

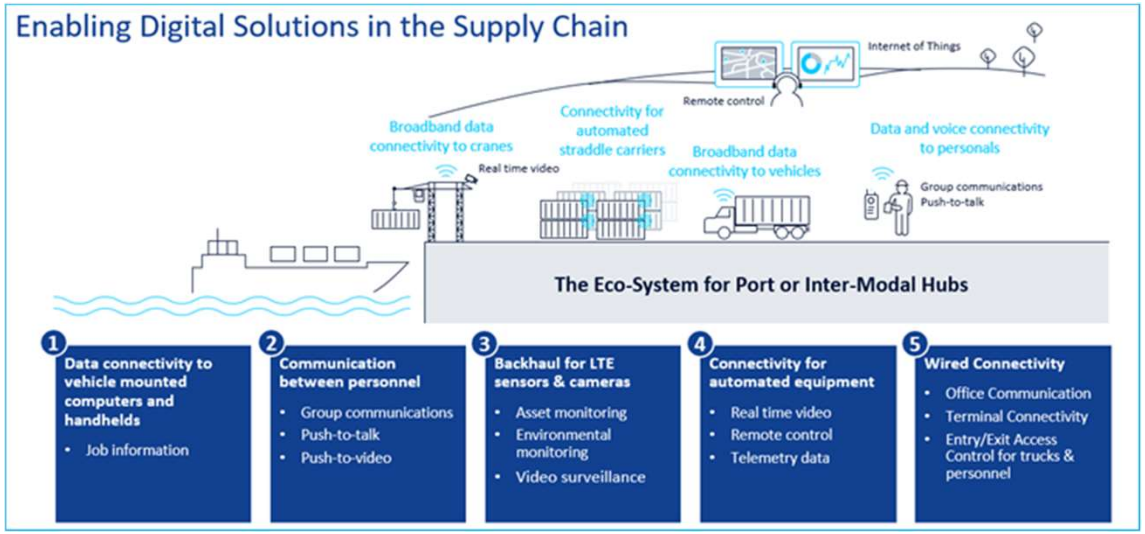
Deterministic
Real-time
Heterogenous

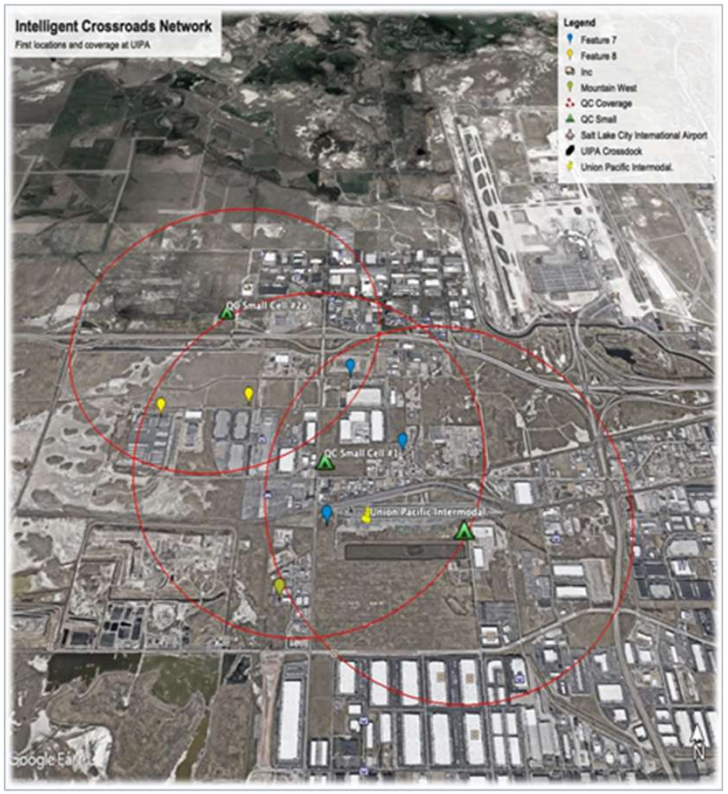
Smart Education – Sacramento School District

- Partnership with AWS and Megh Computing
- Coverage: Community Center, neighborhoods, School
- Phase-1 : 25 users; Phase-2: 1200
- To be scaled to 13 more schools in 21-22



Intelligent Crossroads Network – Utah Inland Port Authority





Use cases:

1. Cargo movement
2. Environmental Pollution Sensing
3. Security & Surveillance

intel. QuayChain

Intel Components

intel. Xeon intel. Core i7 intel. Movidius OpenVINO

16,000 Acre Private Network