# Intel® Network Builders Insights Series

## Intel System-on-a Chip (SoC) Overview


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- Vinila Yarlagadda, Product Manager and Business Operations – System-on-a Chip (SoC) Platforms


# Notices and Disclaimers

- Intel technologies may require enabled hardware, software or service activation.
- No product or component can be absolutely secure.
- Your costs and results may vary.
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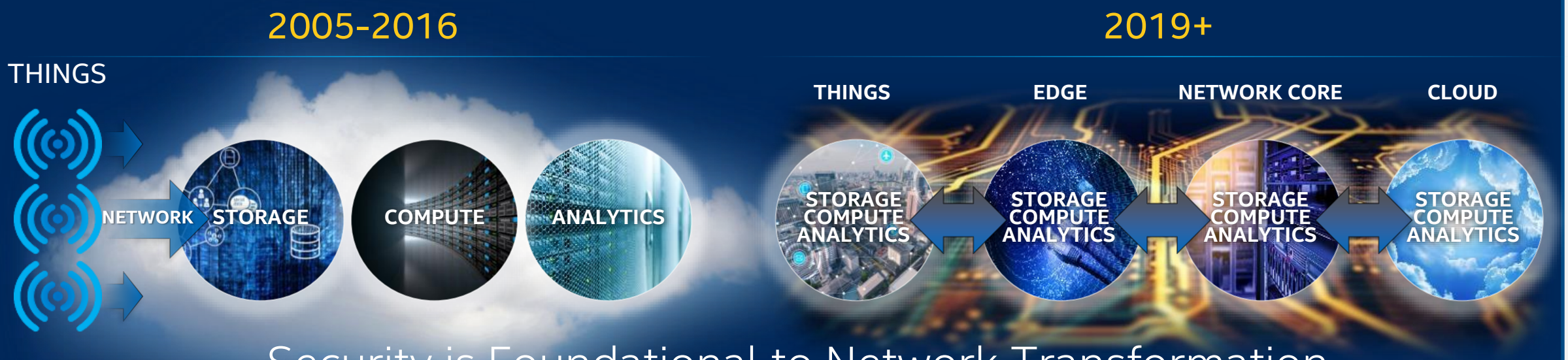
# What is happening to the Network?




## Security is Foundational to Network Transformation

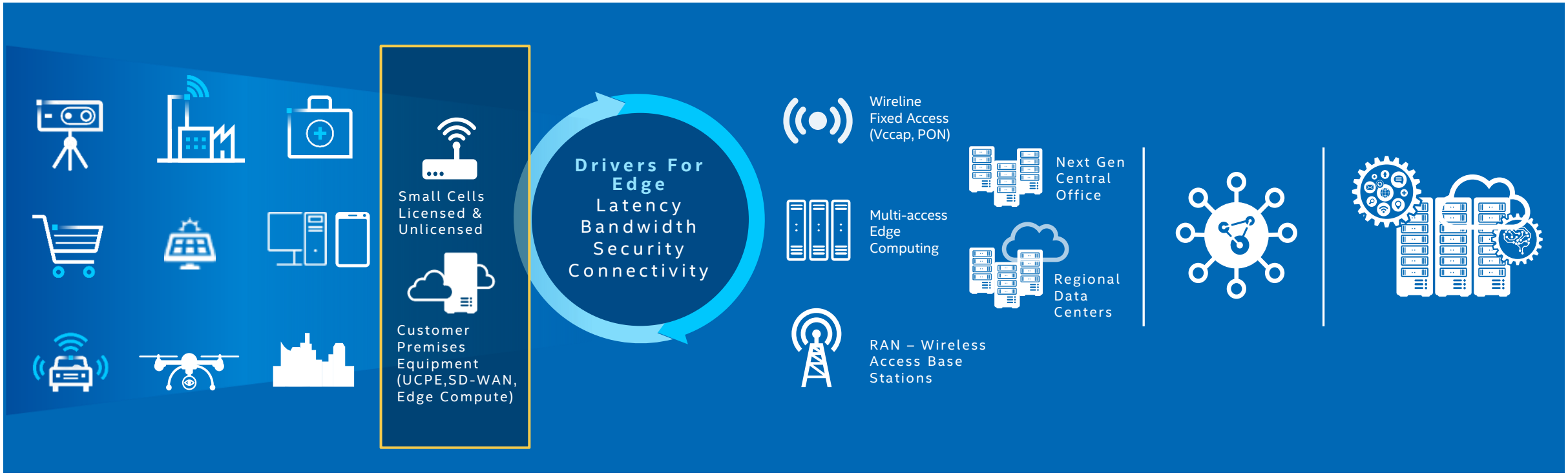

VIRTUALIZATION


STORAGE


NETWORK INFRA


AI/ANALYTICS

# Drivers of Edge Computing

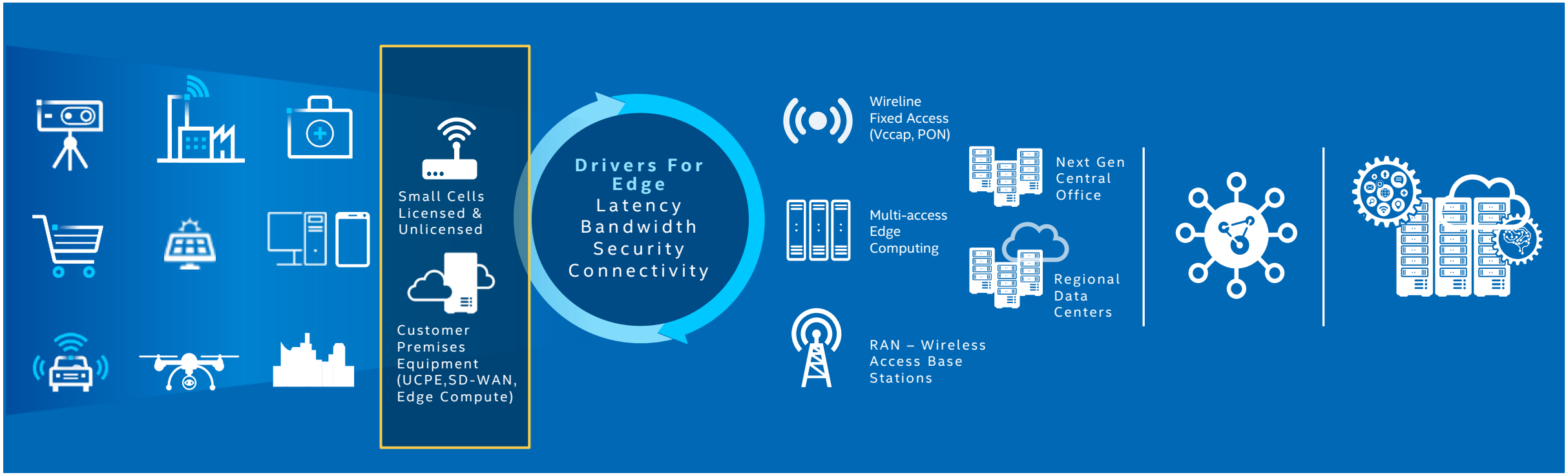



| Devices/Things | Enterprise Edge | Network Edge | Core Network | Cloud Data Center |
|---|---|---|---|---|
| Latency expectation | *Varies <1 ms* | *<5 ms* | *<10-40 ms* | *< 60 ms* | *~100 ms* |

Flexibility to run workloads on-prem, at the network edge, or in the data center/cloud.
Enable low latency apps, e.g. Power backbone disconnect (<4ms), high speed machinery cut-off (1ms), Surveillance camera feed analysis (2ms)

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

# Workload Convergence at the Enterprise Edge




| Devices/Things | Enterprise Edge | Network Edge | Core Network | Cloud Data Center |
|---|---|---|---|---|

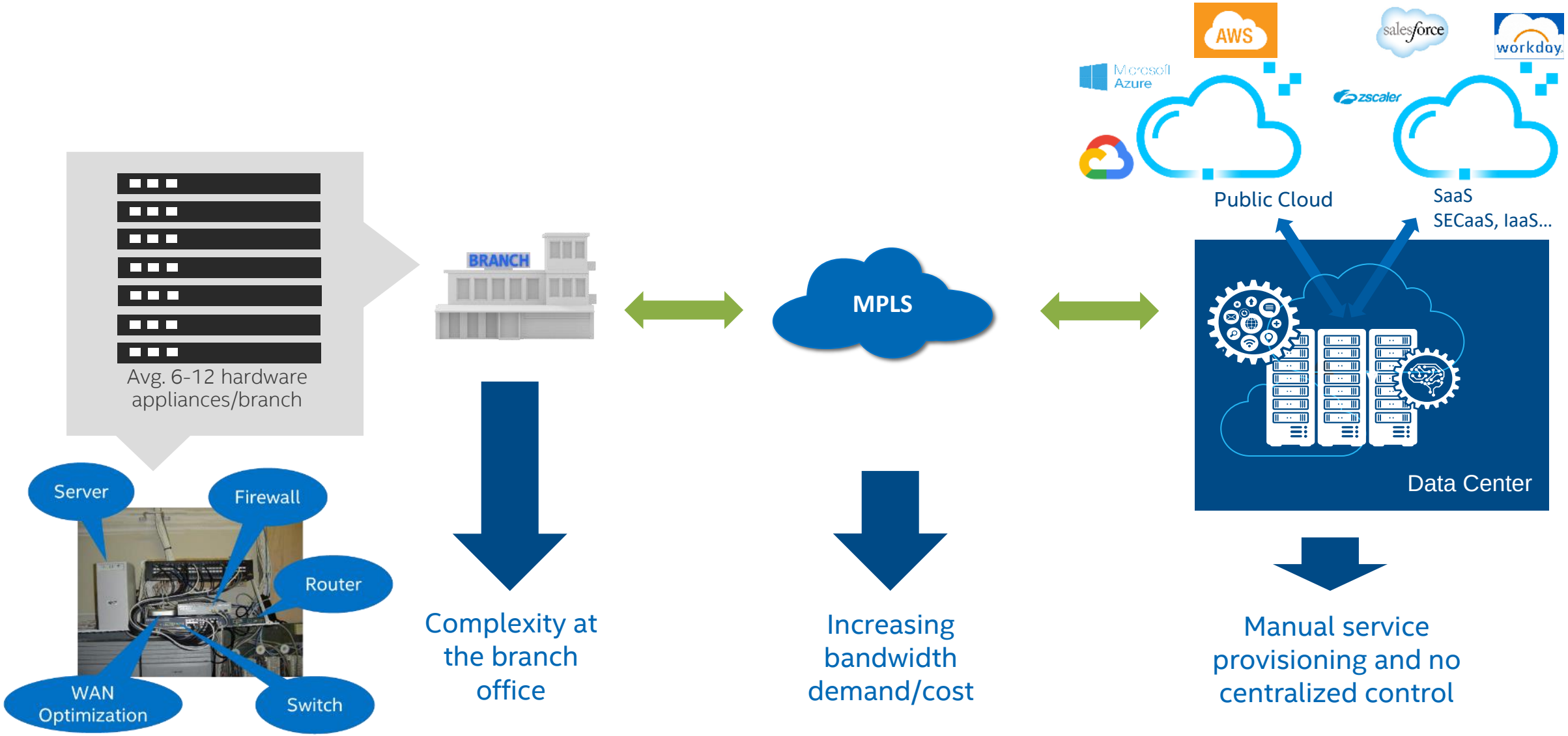
IOT Journey To The Edge

Convergence of
IT, OT & CT Workloads

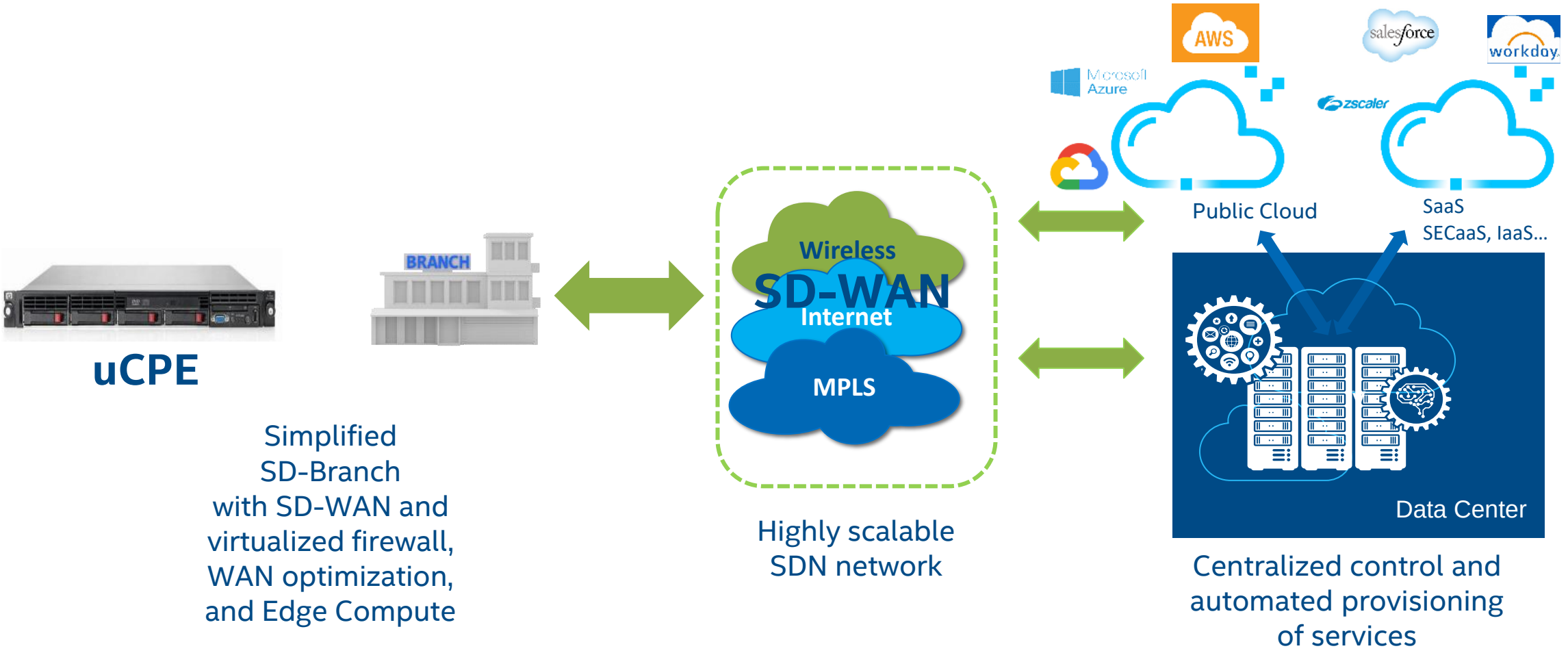
**Workload convergence**
**a key enabler for service innovation**

Network Journey To The Edge

# Enterprise Branch Offices are Complex…



# Transformation to the SD-Branch



# Three Forces Impacting Network Security

## EXPANSION
of Attack Surface

**Billions** of connected devices and the move to the cloud

## INDUSTRIALIZATION
of Hacking


Criminal **sophistication** and evolving intent to get to your **data**

## FRAGMENTATION
of Solutions

**Thousands** of products from **hundreds** of vendors

# 5G/Edge is software centric transformation

## Open Source, Open architecture pose the new security challenge

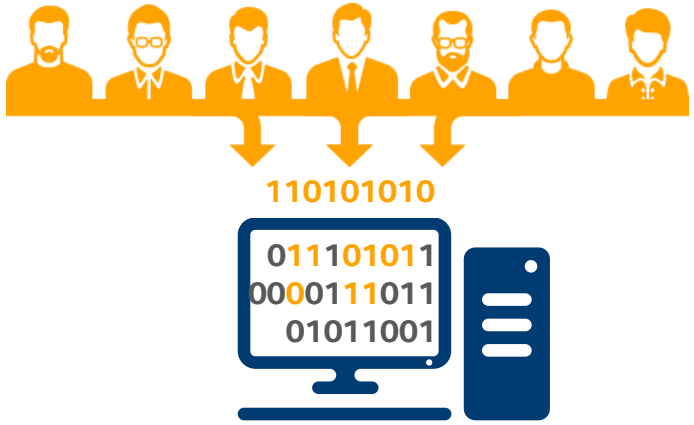
### EXPANSION
of Attack Surface


Workload Convergence

Intel® Architecture Performance + Scale

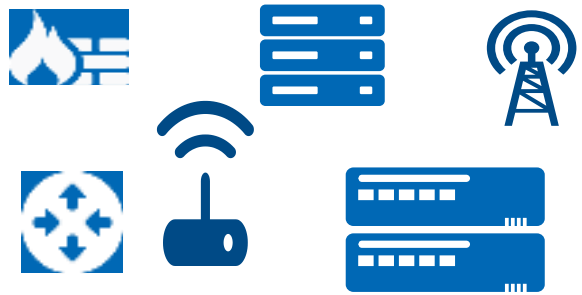
Transform the networking infrastructure with Cloud Model for Lower TCO. Optimize R&D on Intel Modular Technologies

### MULTI PARTY
Of Trust Computation




Secure infrastructure for NFV, Edge service requires IP, data protection, workload isolation and resource partition

### Ease Access
Of Malicious Attacker



Remote deployment, the rising edge computing, Security is a critical priority to assure the service always-on

# Network & Security Appliance Market

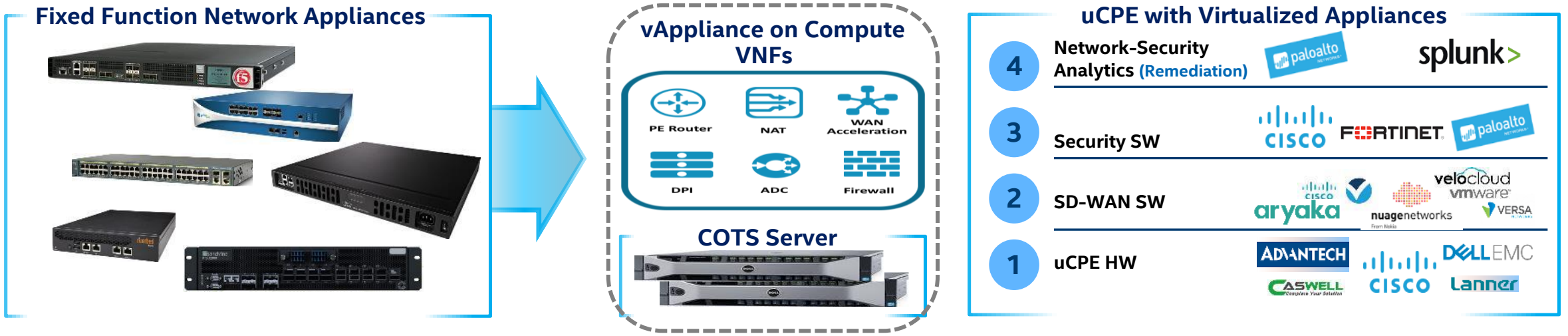
## Transformation to Multi-cloud workload consolidation

### Customer Challenges

- Hardware mgmt. complexity & interoperability
- IT knowledge & lack of cloud network expertise
- Low price point and TCO

### Our Strategy

- Strong SW ecosystem
- Multi-Cloud enabling
- SoCs with competitive price points w/ virtualization and scalability



# Intel® Network Builders Insights

## CPU Solutions

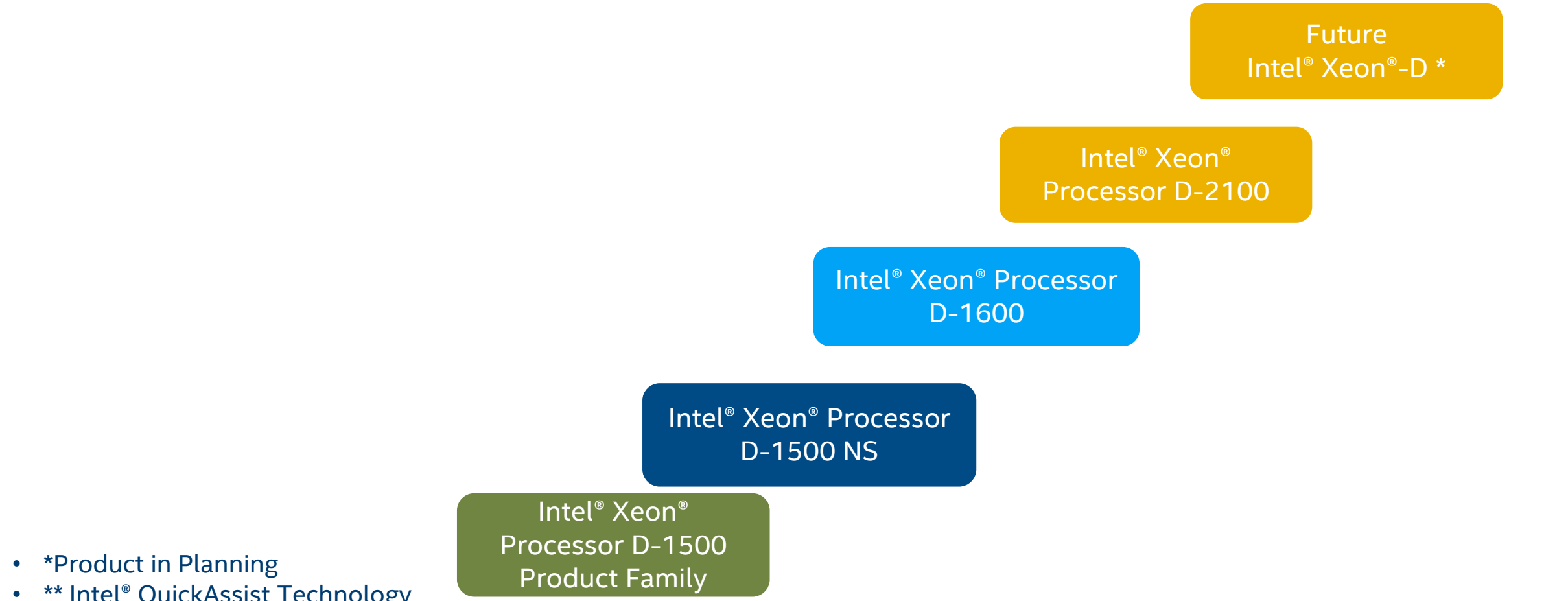
# Products Key Value Vectors

| | |
|---|---|
| Intel® Xeon® E3 | ▪ Excellent Single Threaded Performance<br>▪ Integrated Graphics<br>▪ Socket Flexibility (LGA/BGA) |
| Intel® Xeon® D SoC | ▪ Intel® Xeon® Core, Best socket Perf/Watt<br>▪ Lower Power, Higher Physical Density<br>▪ Larger (up to 512GB) memory capacity<br>▪ Integrated Crypto Compression<br>▪ One Chip Solution, BGA with integrated 10GbE |
| Intel Atom® SoC | ▪ Intel Atom® Core<br>▪ Lowest Power, Highest Physical Density**<br>▪ Integrated Crypto/Compression<br>▪ One chip solution, BGA with integrated 10GbE |

Address the increasing segmentation of workload requirements.

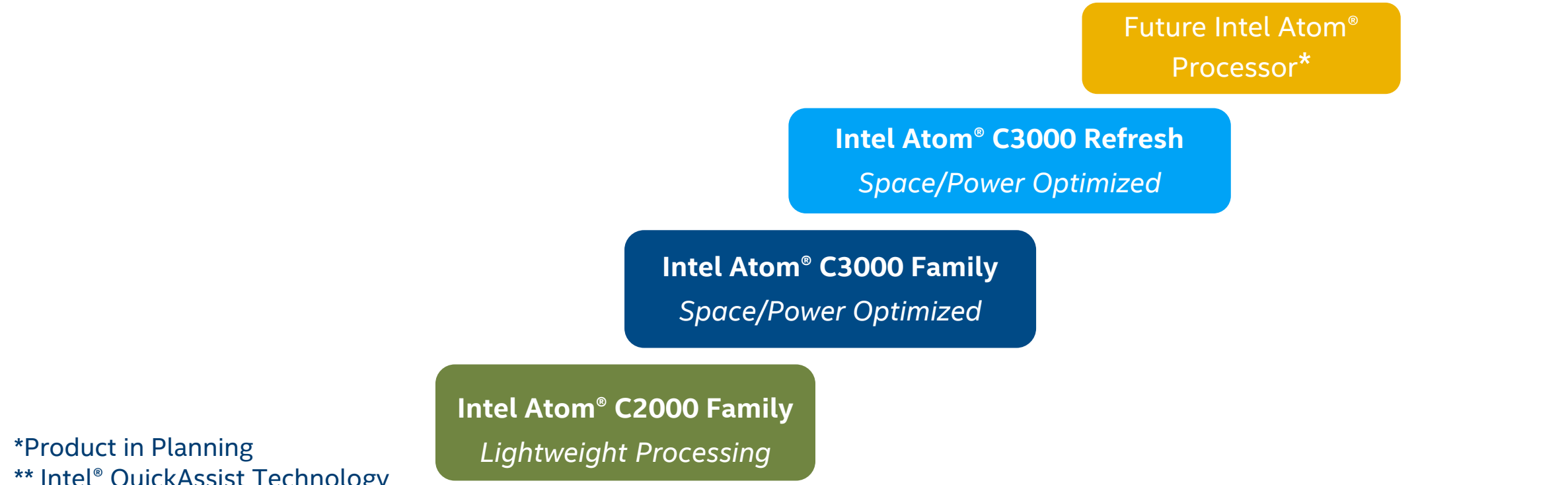
*When compared to Intel® Xeon® E3
**When compared to Intel® Xeon® D

# Intel® Xeon® Processor D Product Cadence



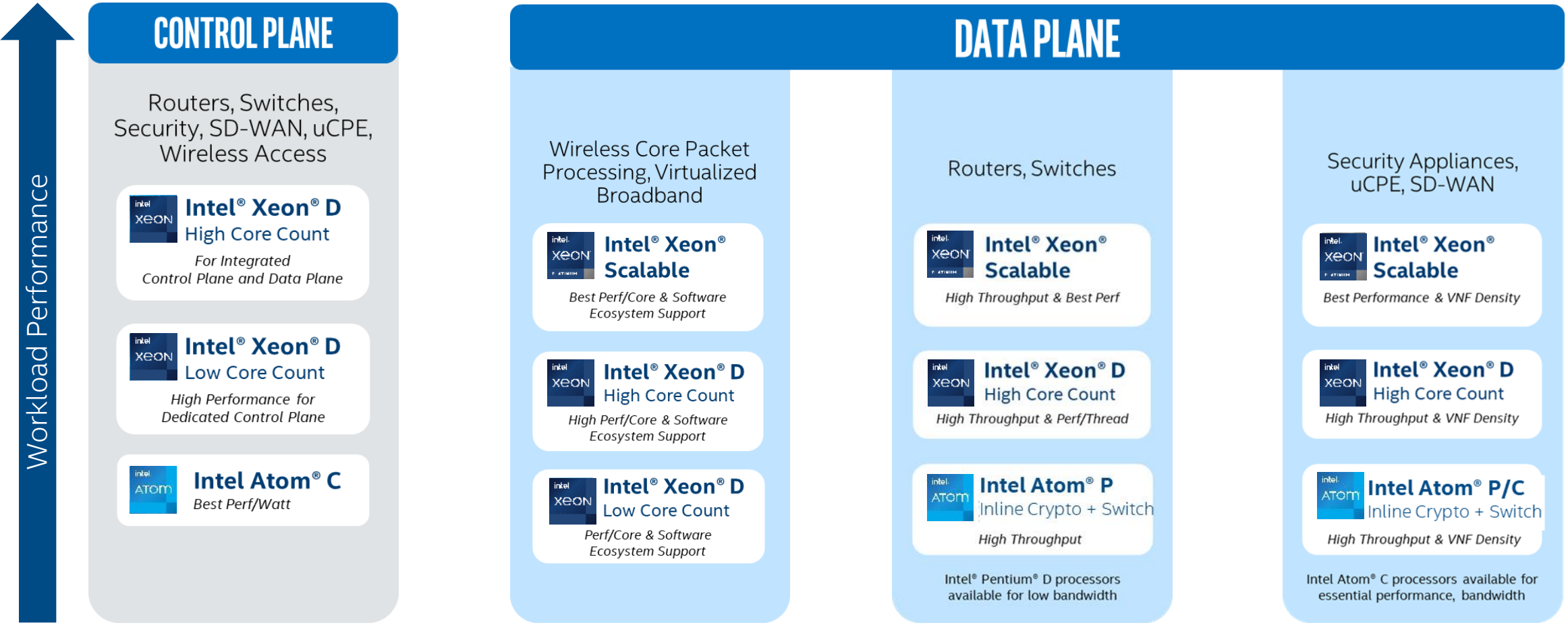

- *Product in Planning
- ** Intel® QuickAssist Technology

# Intel Atom® Processor Product Cadence



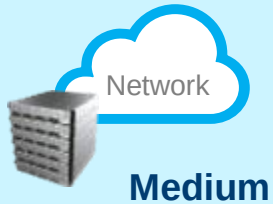
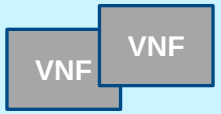
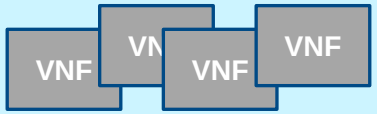
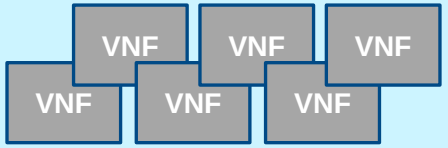

- *Product in Planning
- ** Intel® QuickAssist Technology

# SOC positioning for network workloads




All comparisons and performance claims are being made between the 3 Intel product families shown

# Deployment Models and Segmentation

| | | | | |
|---|---|---|---|---|
| VNFS @ POP/DATA CENTER | Routing, vFW, IPS, SBC, CGNAT, WiFi CTRL, SD-WAN CTRL | Routing, IPS, SBC, CGNAT, WiFi CTRL, SD-WAN CTRL | IPS, CGNAT, SBC, WiFi CTRL, SD-WAN CTRL | CGNAT, SBC, SD-WAN CTRL |
| SERVICE PROVIDER / ENTERPRISE |  **SOHO (Thin)** |  **Small Branch** |  **Medium Branch** |  **Large Branch (Thick)** |
| VNFS @ CPE | SD-WAN | SD-WAN, vFW | SD-WAN, Routing, vFW, WAN Accel | SD-WAN, Routing, vFW, WiFi CTRL, WAN Accel, IPS |
| |  **1 VNF / Bare Metal** |  **1-2 VNFs** |  **2-4 VNFs** |  **4+ VNFs** |
| INTEL® TECHNOLOGIES TO DRIVE PERFORMANCE, SCALE, & SECURITY | Intel Atom® Processors (2-core to 4-core) | Intel Atom® Processors (2-core to 8-core) | Intel Atom® Processors (8-core to 16-core)<br>Intel® Xeon® D Processors | Intel® Xeon® D Processors<br>Intel® Xeon® Scalable Processors |

- Data Plane Developer Kit
- Intel® QuickAssist Technology
- Hyperscan
- Intel® Virtualization Technology
- Intel® AES New Instructions
- Intel® Trusted Execution Tech.
- Intel® Platform Trust Technology
- Intel® Secure Device Onboard (SDO)
- OpenVINO

# Summary

- Intel is investing in network transformation
- Comprehensive suite of products and technologies that enable differentiated Edge solutions
- Rich ecosystem of uCPE/Edge vendors and technology partners to deliver best in class products

# Collateral

## These can all be found in the attachments tab below your viewer

- For SKUs, see ark.intel.com
- For Product Snapshots, please contact xiaojun.li@intel.com
- For Product Datasheets, see https://www.intel.com/content/www/us/en/products/processors/atom/c-series.html

  https://www.intel.com/content/www/us/en/products/processors/xeon/d-processors.html

# Questions?

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