

Intel FDP Program

5G Network Platform Overview

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Intel Network and Edge

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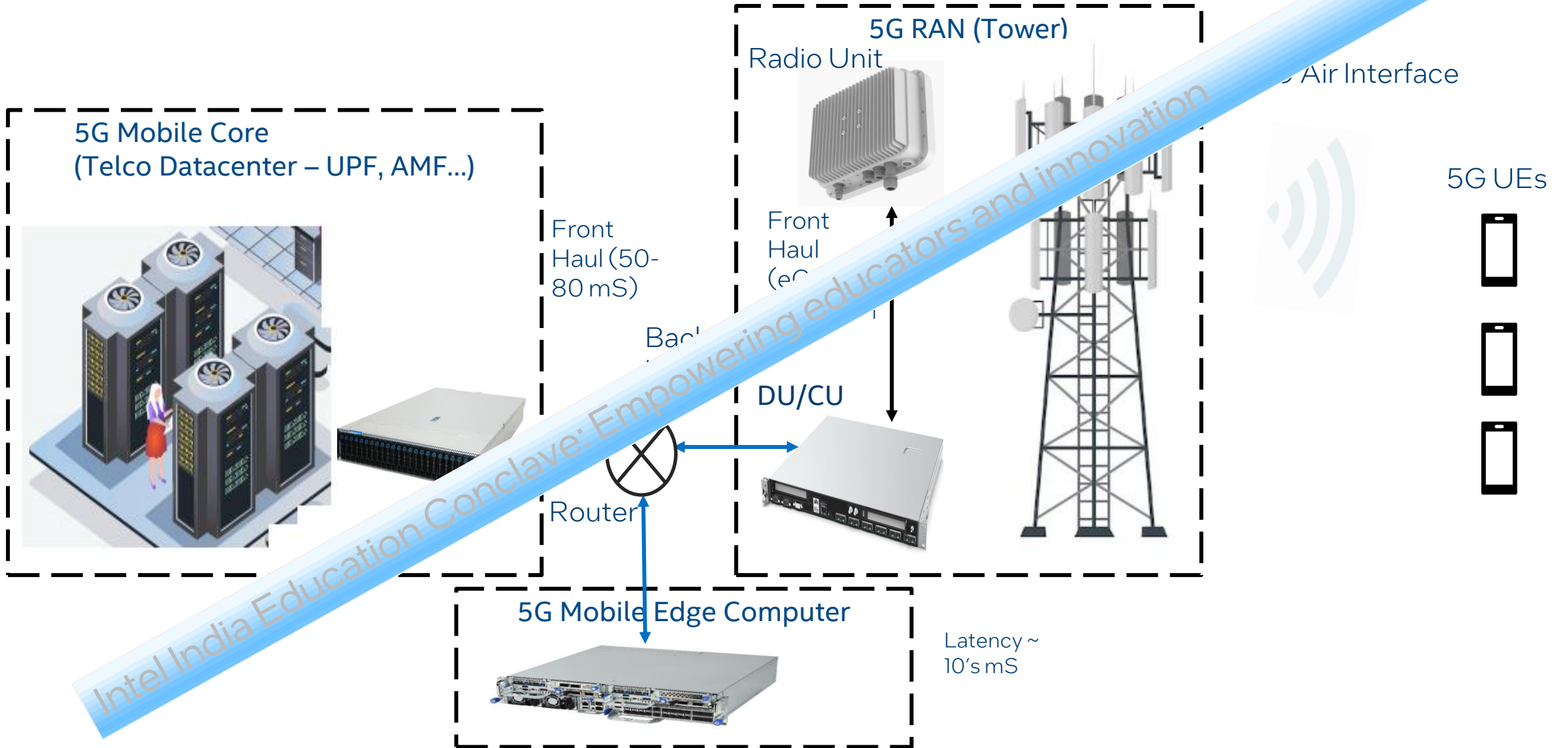
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Agenda




- High Level 5G Network Overview
- Intel 5G Platforms – Core(Demo), RAN, Edge




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High Level 5G Network

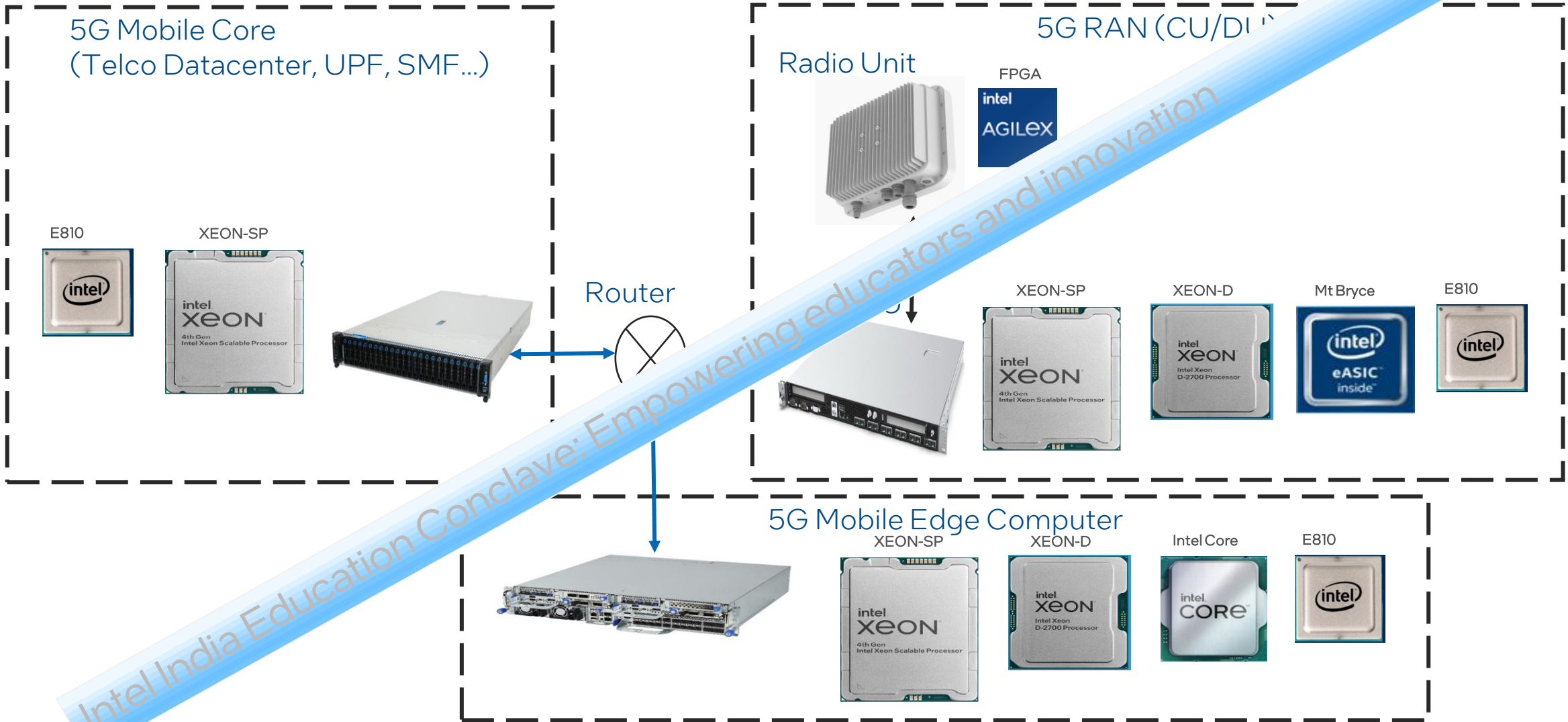


Intel Components – Processing, Accelerator, Networking

Component	Details
Processing	
<p>XEON-SP</p> 	<ul style="list-style-type: none"> • Intel XEON-SP Processor (Server) • Example: Sapphire Rapids (4th GEN) <ul style="list-style-type: none"> ➢ Accompanied by Southbridge (Peripheral Controller Hub Emmitsburg) ➢ Typically: 16 to 60 P Cores ➢ 8 CH DDR5, 4 TB ➢ Power: 125 W to 350 W ➢ 80 PCIe GEN5 • Typically: 5G Core AMF/SMF, RAN CU/DU etc.
<p>XEON-D</p> 	<ul style="list-style-type: none"> • Intel XEON-D Processor (Embedded) • Example: ICELAKE-D <ul style="list-style-type: none"> ➢ Typically: 4 to 20 P Cores ➢ 4 CH DDR4, 1 TB ➢ SOC with Integrated PCH & Ethernet (up-to 100 Gbps) ➢ Power: 40W to 120W ➢ 32 PCIe GEN4 • Typically: 5G RAN CU/DU, Edge etc
<p>Intel Core</p> 	<ul style="list-style-type: none"> • Intel Core Processor (Desktop, Laptop) • Example: 12th GEN Alder Lake <ul style="list-style-type: none"> ➢ Typically: Up-to16 Cores(P core + E core) + optional integrated Graphics + with or without PCH ➢ 2 Ch DDR4 ➢ Power: 15W to 65W ➢ Up-to 16 PCIe GEN4 • Typically: 5G Edge

Component	Details
Acceleration	
<p>Mt Bryce</p> 	<ul style="list-style-type: none"> • 4G and 5G FEC • Resolves data transmission errors over noisy communication channels • Implemented in ASIC/Si • Typically: 5G RAN CU/DU
Connectivity	
<p>E810</p> 	<ul style="list-style-type: none"> • Example: Intel Columbiaville <ul style="list-style-type: none"> ➢ xxVAM2 (2 Ch 50 Gbps) ➢ CAM1 (4 Ch 100 Gbps) ➢ CAM2 (8 Ch 100 Gbps) • Intel PCIe NIC Adapters (e.g. Salem Channel, Westport Channel) • Typically: 5G RAN CU/DU, 5G Core, 5G Edge
	

Intel components across 5G Network



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Sapphire Rapids Server Platform Hardware Demo

Intel Confidential



Pratim Mitra
Intel NEX-CEED



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78°F
Partly sunny



Q Search



11:03 AM
7/28/2023

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Quiz

1. What is an Accelerator ?

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Intel QuickAssist Technology

Demo

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Pratim Mitra

Manish Sharma

Shashank Varshney

Bibhuti Bhusan Tosh

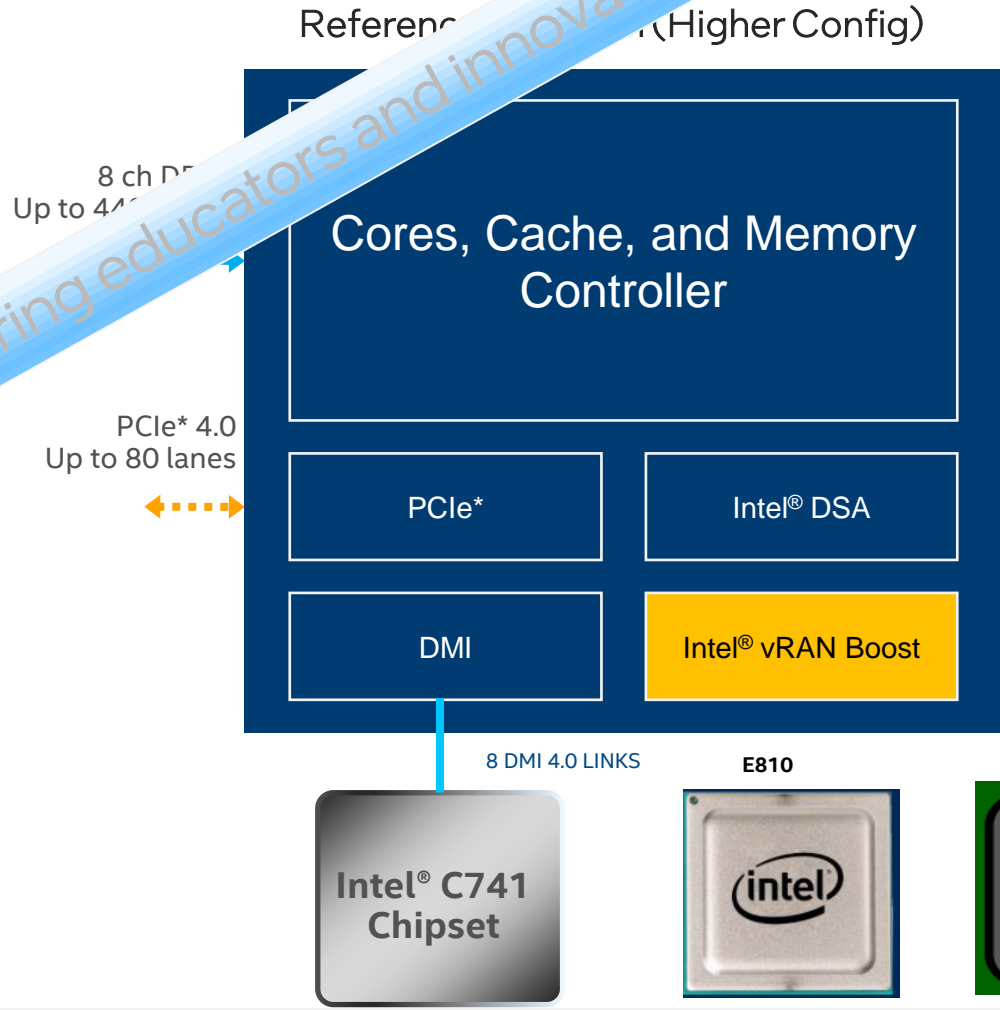
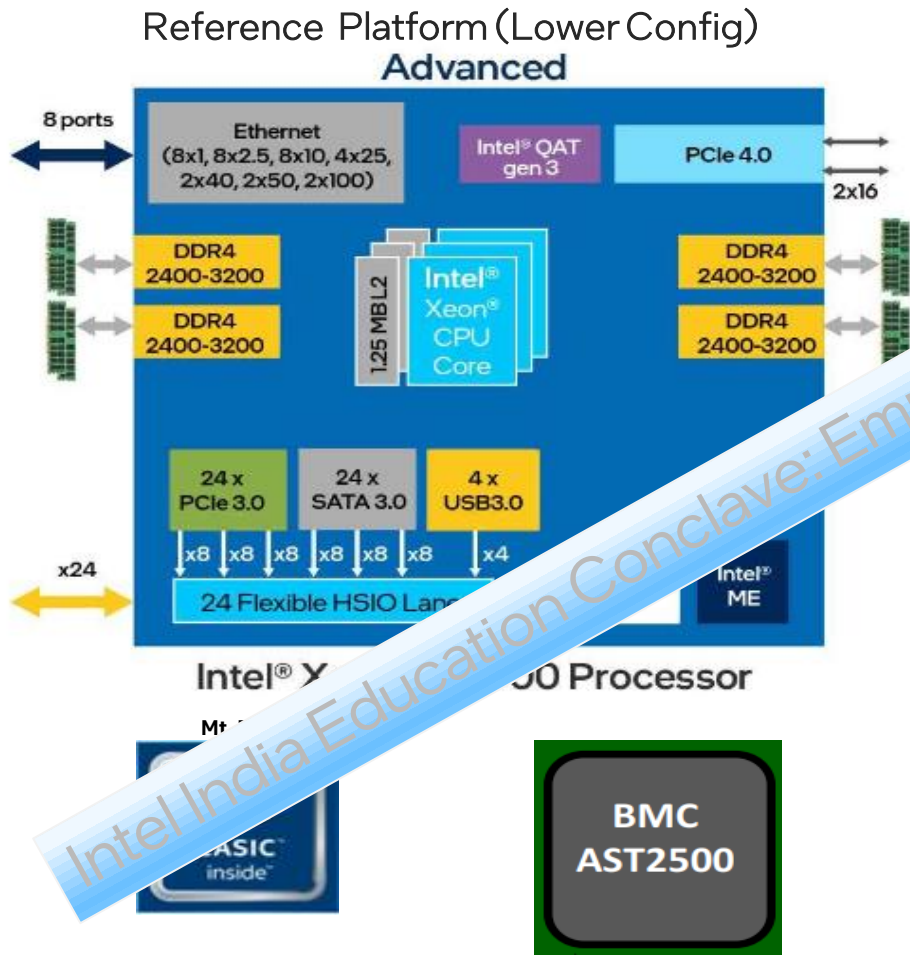
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5G RAN CU-DU Platform example

- L2 (CU) in GPP
- L1 (DU) in GPP using FlexRAN SW
- AVX-512, 5G ISA



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5G Edge Platform Overview

Opportunity:

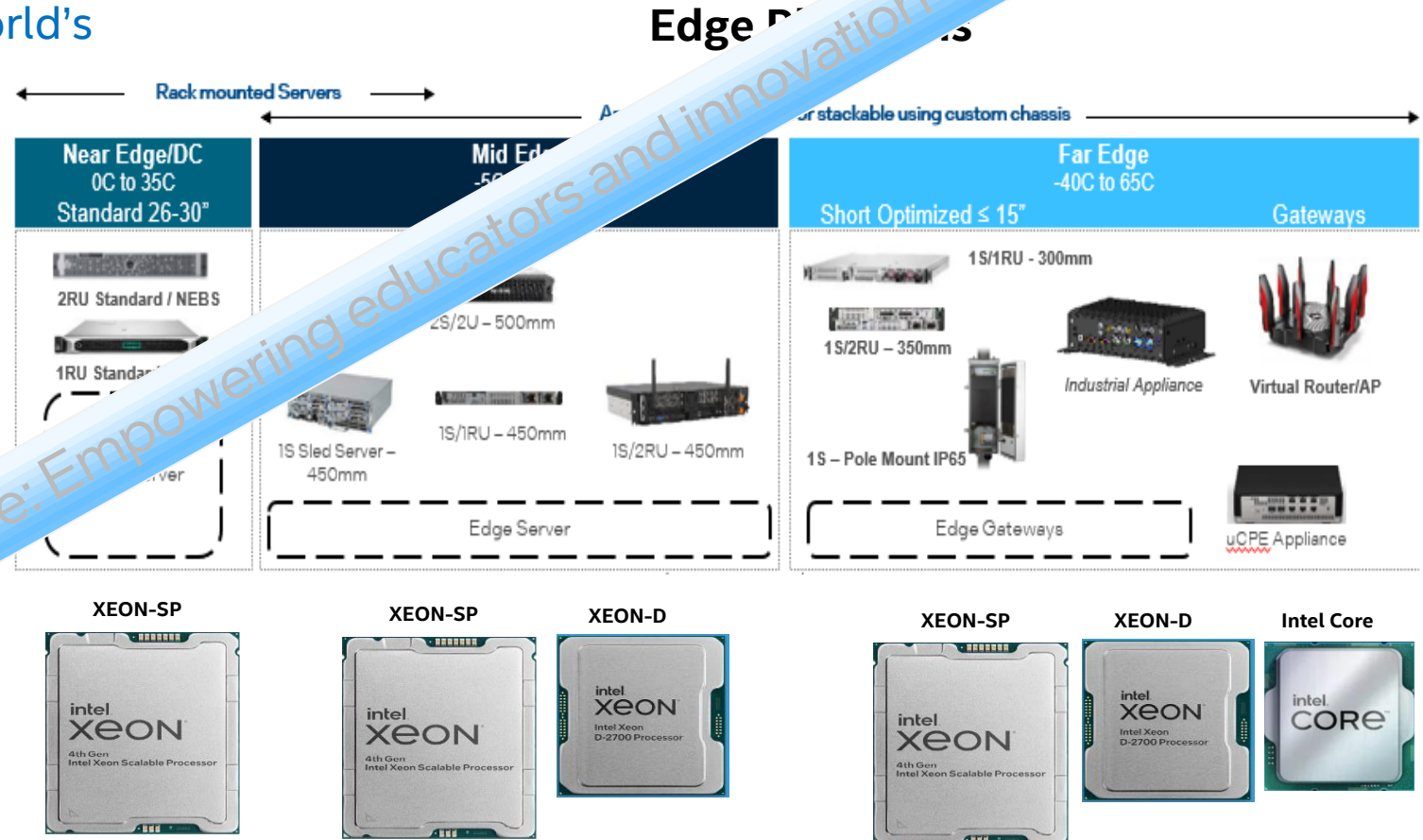
- Estimated that by 2025, 75% of world's Data will be processed at Edge

Landscape:

- Near, Mid and Far Edge
- Diverse Applications
- Different form factors/envt

Platform:

- One Platform doesn't fit all
- Ref/custom platform support



Summary

- 5G powered by Intel – Components and Platforms
- Let's partner together to resolve Network/Edge challenges

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