STAC Summit - November 2022

What CXL means for FSI

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New CXL protocol is game changing!!

Matt's prediction is coming to fruition…

Introduction

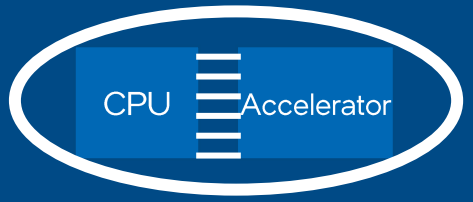
Application/Workload Acceleration
(Data transformation)

Infrastructure Acceleration
(Processing of data in motion)

Smart Storage/Memory
(Processing of data at rest)

Choose best accelerator HW: CPUs, GPUs, AI, FPGAs, other chipsets

CXL Improves Efficiency

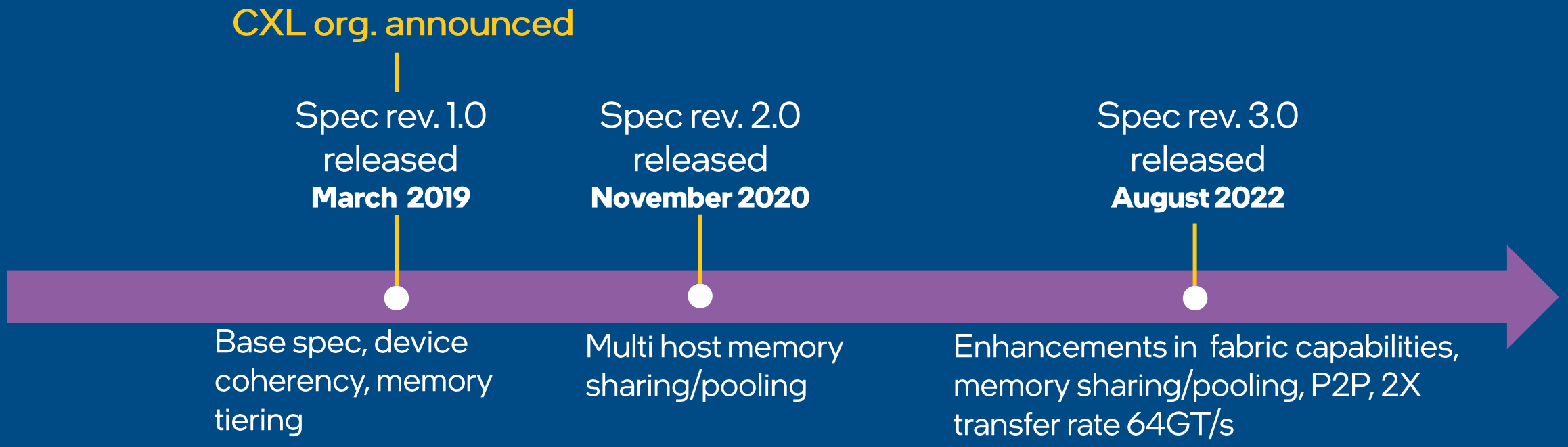


Close Coupling

Lower Latency

Improved Memory Organization for Better Resource Sharing

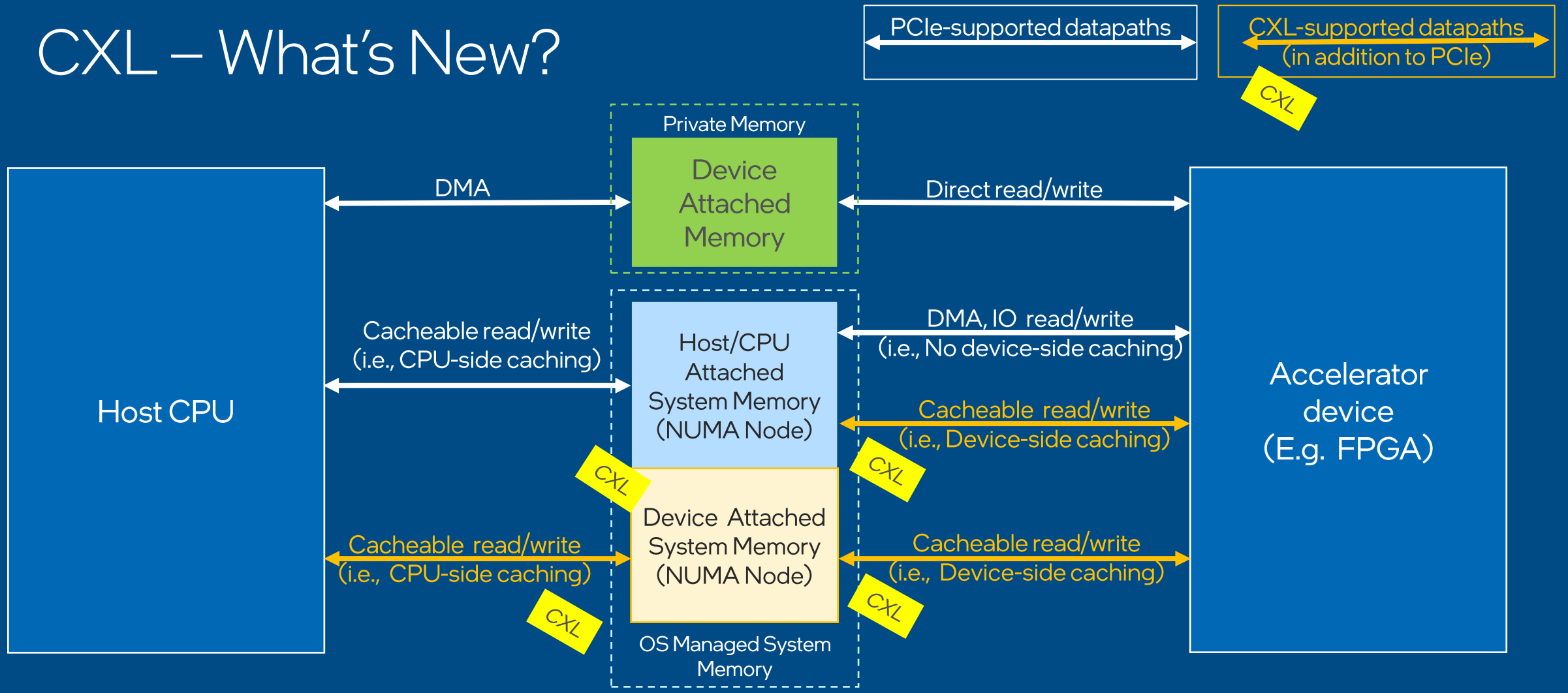
Compute Express Link (CXL) – Overview & Latest News



- What is CXL? An open-source coherent interconnect protocol (re-uses PCIe PHY/data layers)
- Who is in CXL.org? Over 200 members & growing
- Latest News:
  - Gen-Z Consortium joined CXL & transferred assets/technology
  - OpenCAPI Consortium letter of intent to join CXL
  - CXL joins open fabric management frameworks (DMTF, OFA, SNIA)

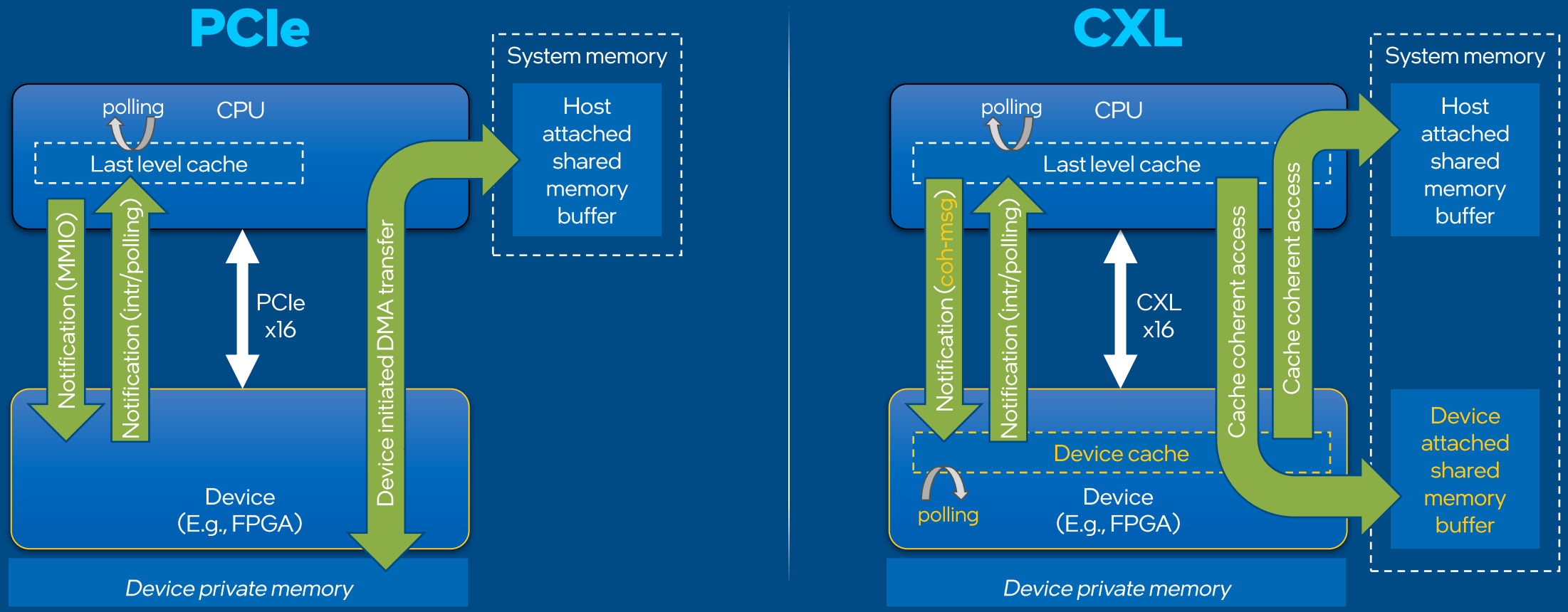
https://www.computeexpresslink.org/

CXL – What's New?



CXL-based accelerators elevated to 1st class priority

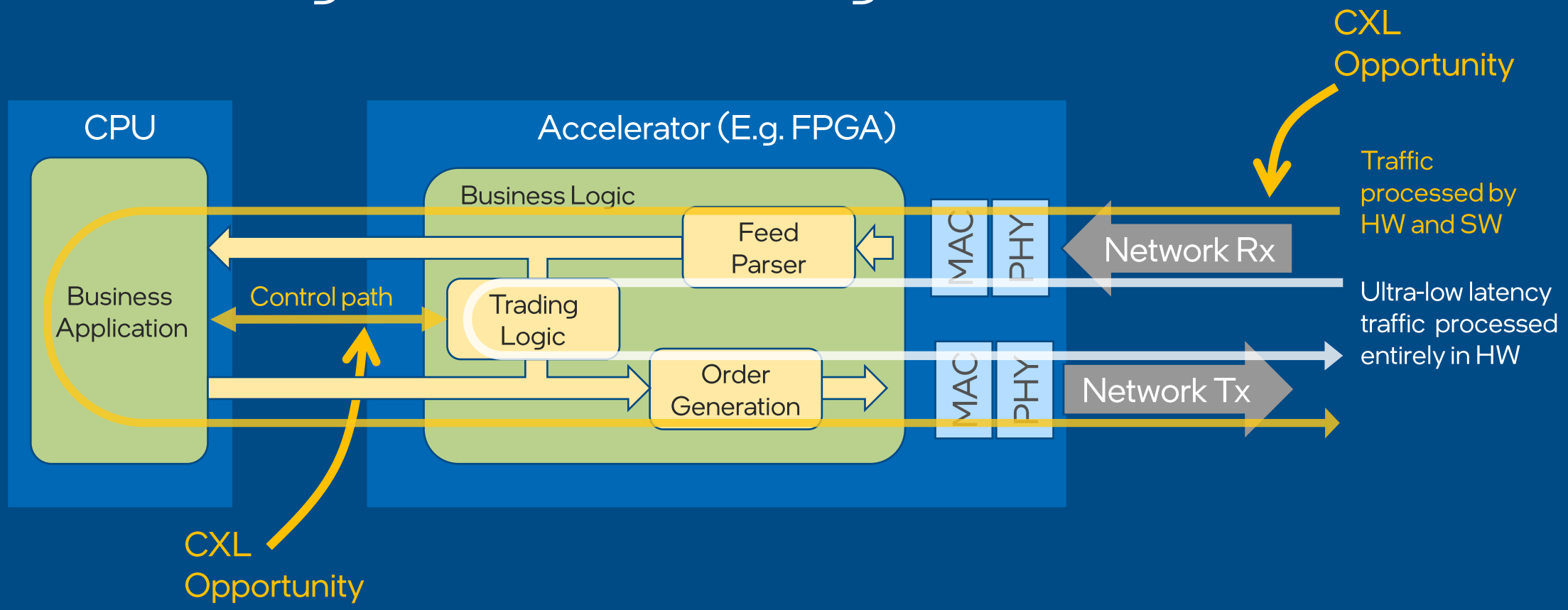
CXL Accelerators – Common Shared Cache/Memory



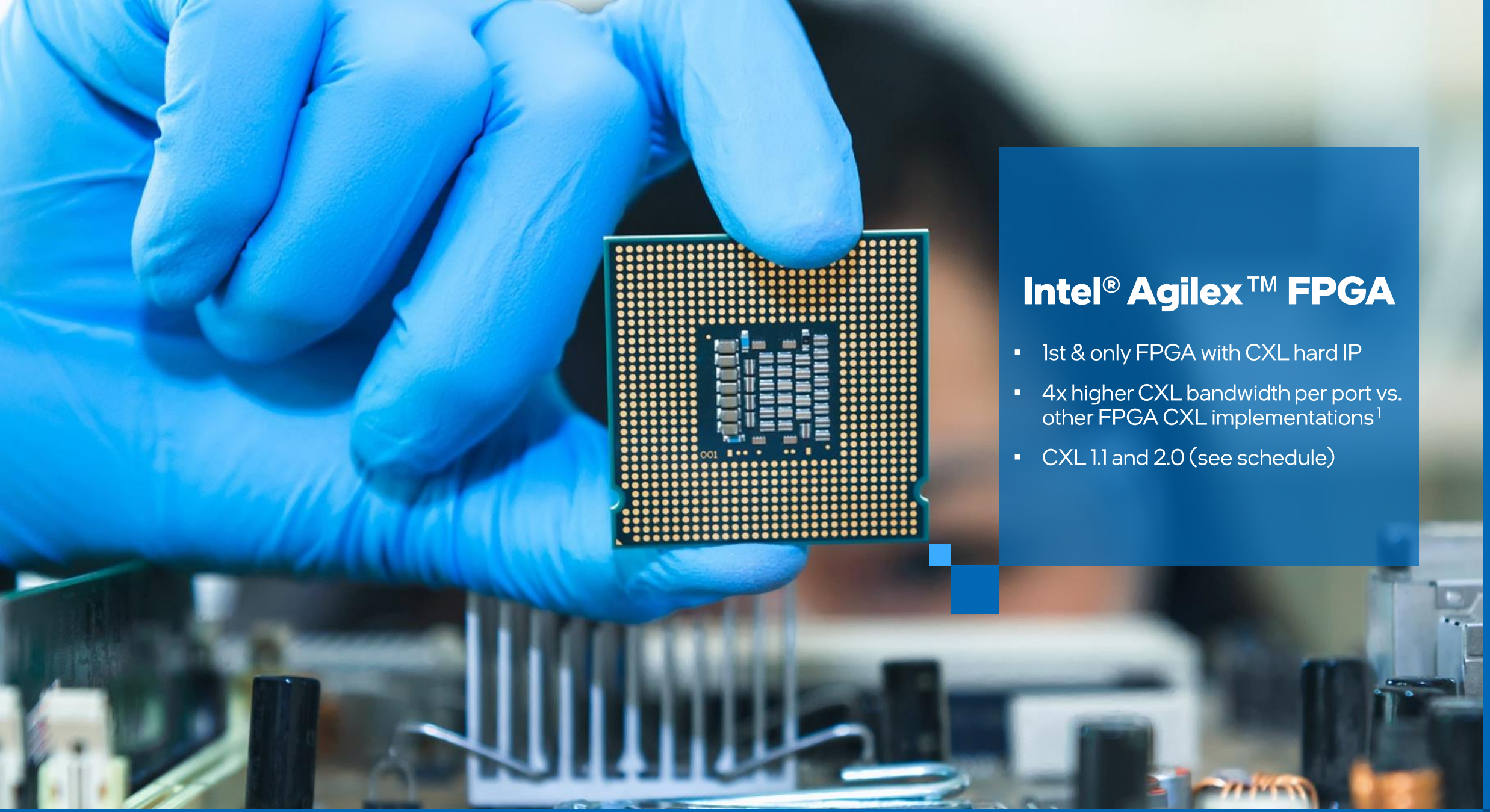
CXL enables:

- Low latency notifications using coherency semantics *(new)*
- Device-side polling ***(new)***
- Shared memory buffers cache coherently accessible by CPU and device ***(new)***

Accelerating Securities Trading



CXL enables tightly coupled CPU-HW interactions, resulting in better use of CPU and hence helping reduce accelerator complexity



Intel® Agilex™ FPGA

- 1st & only FPGA with CXL hard IP
- 4x higher CXL bandwidth per port vs. other FPGA CXL implementations[1]
- CXL 1.1 and 2.0 (see schedule)

[1] Learn more at www.intel.com/PerformanceIndex (see the FPGA section for workloads and configurations). Results may vary.

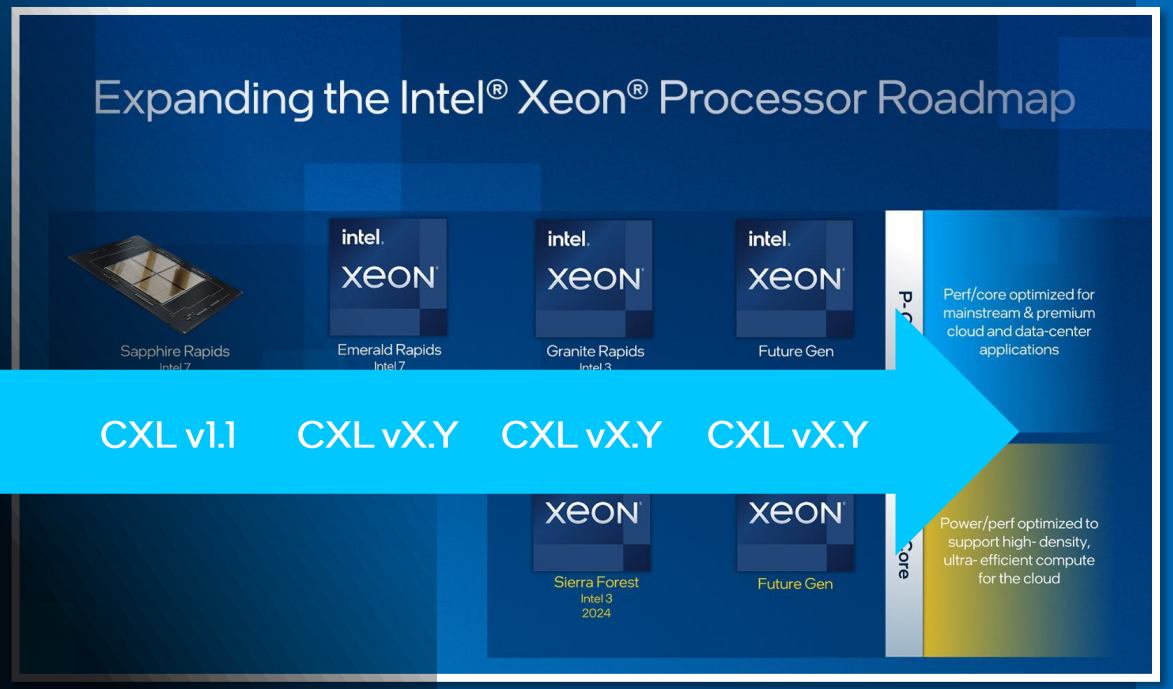
CXL-Capable HW & Ecosystem

Contact OEM/ODM

- ✓ Server embargo release dates under CNDA
- ✓ Based on 4th Gen Intel® Xeon® Scalable processor (formerly codenamed Sapphire Rapids)

Start CXL R&D now!

- ✓ Choose your production intercept
- ✓ Intel FPGA offers SW upgrade CXL 1.1 to 2.0
- ✓ Choose from a variety of Intel FPGA devices & board options

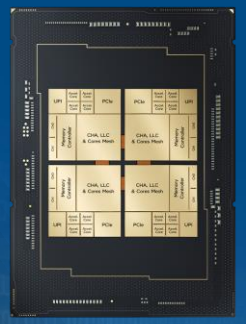


Source: Intel Investor Day (Feb. 17, 2022)

Intel Agilex FPGAs – Leading Financial Services

Leadership with CXL

- ✓ 1st and only FPGA with CXL hard IP
- ✓ FPGA HW supports CXL 1.1 and 2.0



intel AGILEX

Strategic Collaboration with LMS

ÜberNIC™ Exclusively Based on Intel Agilex FPGAs

- ✓ Fully hardware network stack with CXL
- ✓ Truly supports modern market data rates

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THE POWER OF THE POSSIBLE™

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- [1] Intel estimates based on Agilex FPGA CXL hard + soft IP test results (CXL link at Gen 5 x16) vs. Xilinx FPGA using 3rd party CXL soft IP (CXL link at Gen4x8), both interop with pre-production 4th Gen Intel Xeon processors.


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