



Secure Deterministic Ethernet to Bridge the IT/OT Divide

Connectivity Solution Optimized for Industrial Networks

November 2022

Overview

Company founded

1995

FY22 revenue

\$4.46B

Employees

7,200+

Patents worldwide

10,000+

Global fabless semiconductor supplier



 Nasdaq-100

Industry-leading data infrastructure products



Storage

HDD, SSD and
Fibre Channel controllers



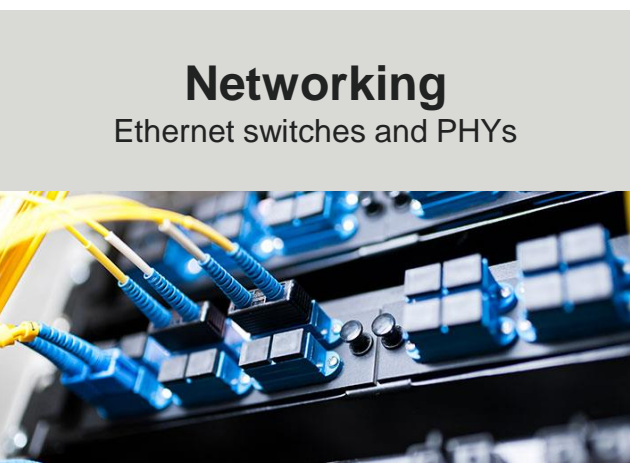
Electro-optics

PAM4 DSPs, linear TIAs, drivers and
coherent DSPs



Processors

4G/5G baseband and
data processor units (DPUs)



Networking

Ethernet switches and PHYs



Automotive Ethernet

Switches, multi-gig PHYs and bridges

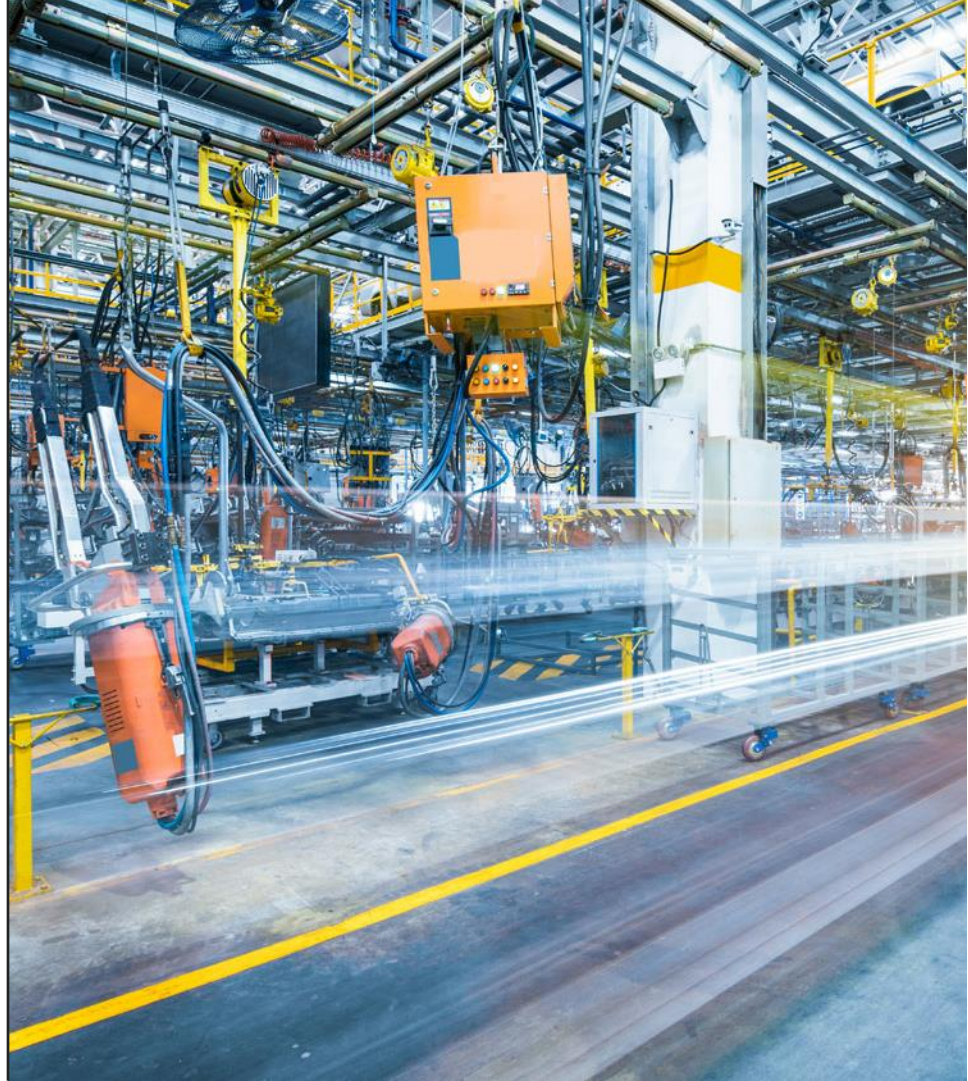


Security

Processors and cloud hardware
security modules (HSM)

Announcing the Secure Deterministic Ethernet Solution

Secure switch-PHY
solution facilitates IT/OT
convergence in industrial
and critical infrastructure
applications





Industrial & Critical Infrastructure End Markets



Harsh environments & deterministic communications

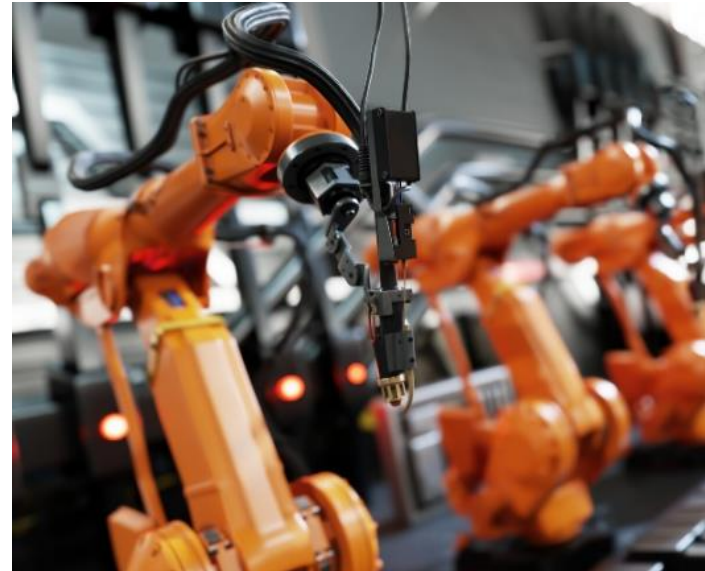


OT and IT networks are often worlds apart

Information Technology Network



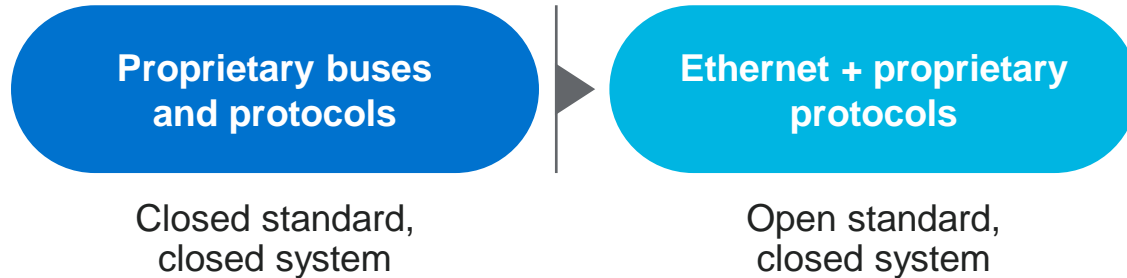
Operations Technology Network



Network silos (IT/OT) increase cost and risk

OT networks are not fully standards-based

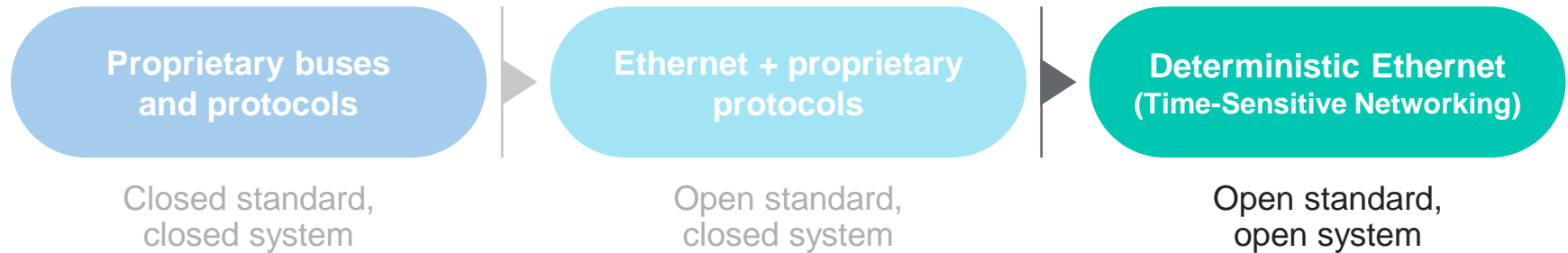
Deterministic network technology evolution



Convergence won't happen without a standards-based approach

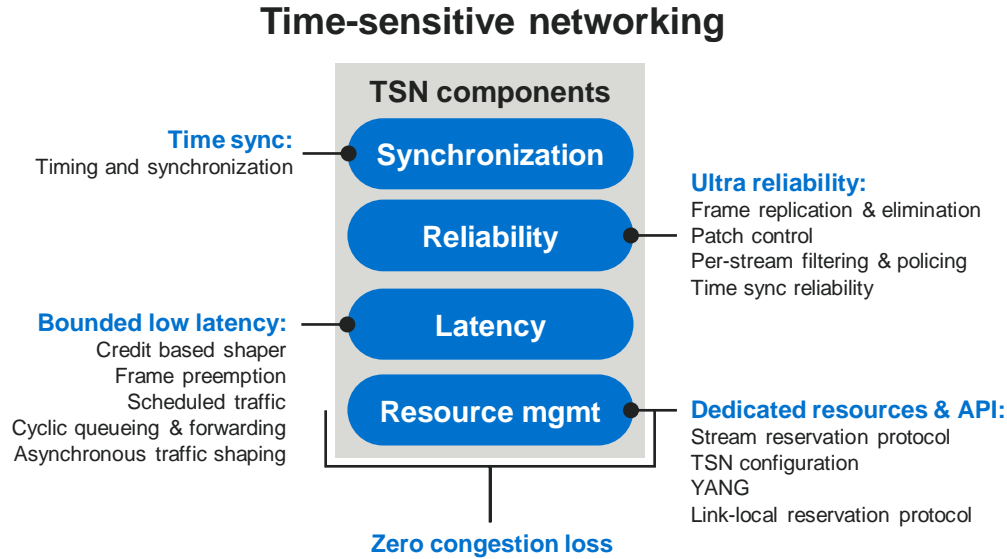
Deterministic Ethernet is standards-based

Deterministic network technology evolution



TSN enables convergence of IT/OT management & automation

TSN: standards-based Deterministic Ethernet



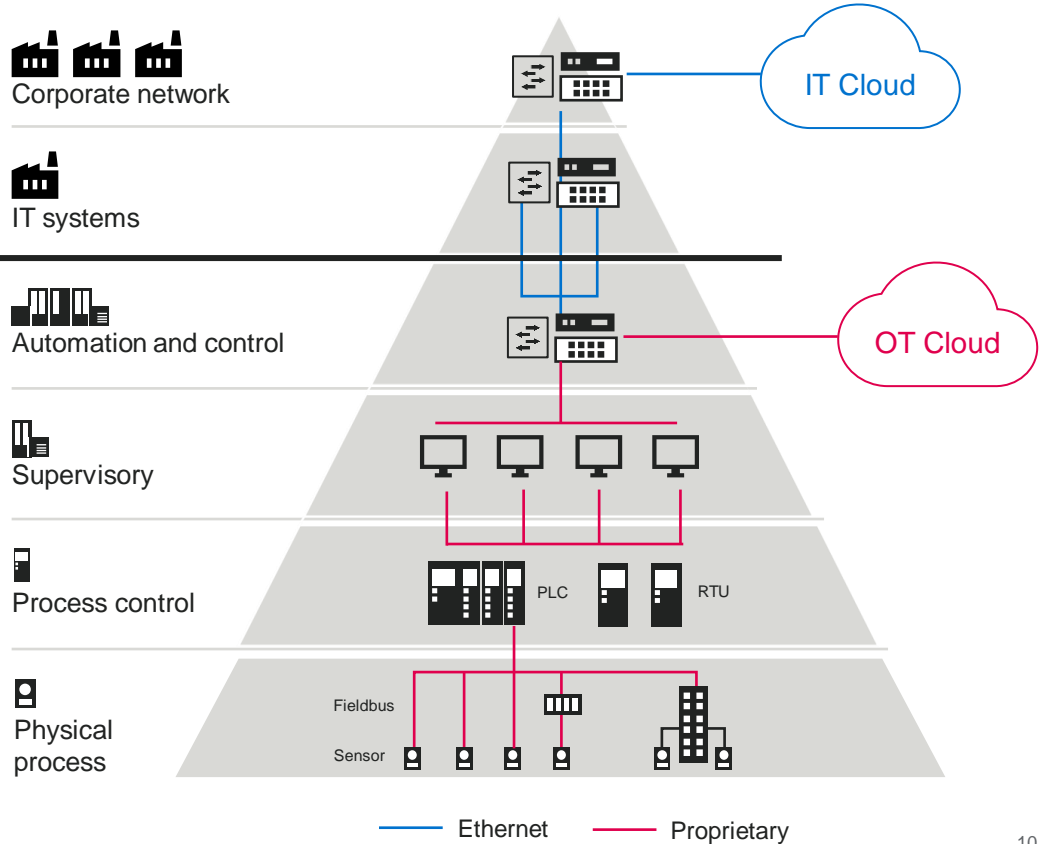
Source: IETF

- Enables reliable, deterministic real-time communication over Ethernet
- Achieved using:
 - Time synchronization
 - Scheduler shared between network components
 - Frame replication
- Results in:
 - Bounded latency
 - Low delay variation
 - Extremely low loss

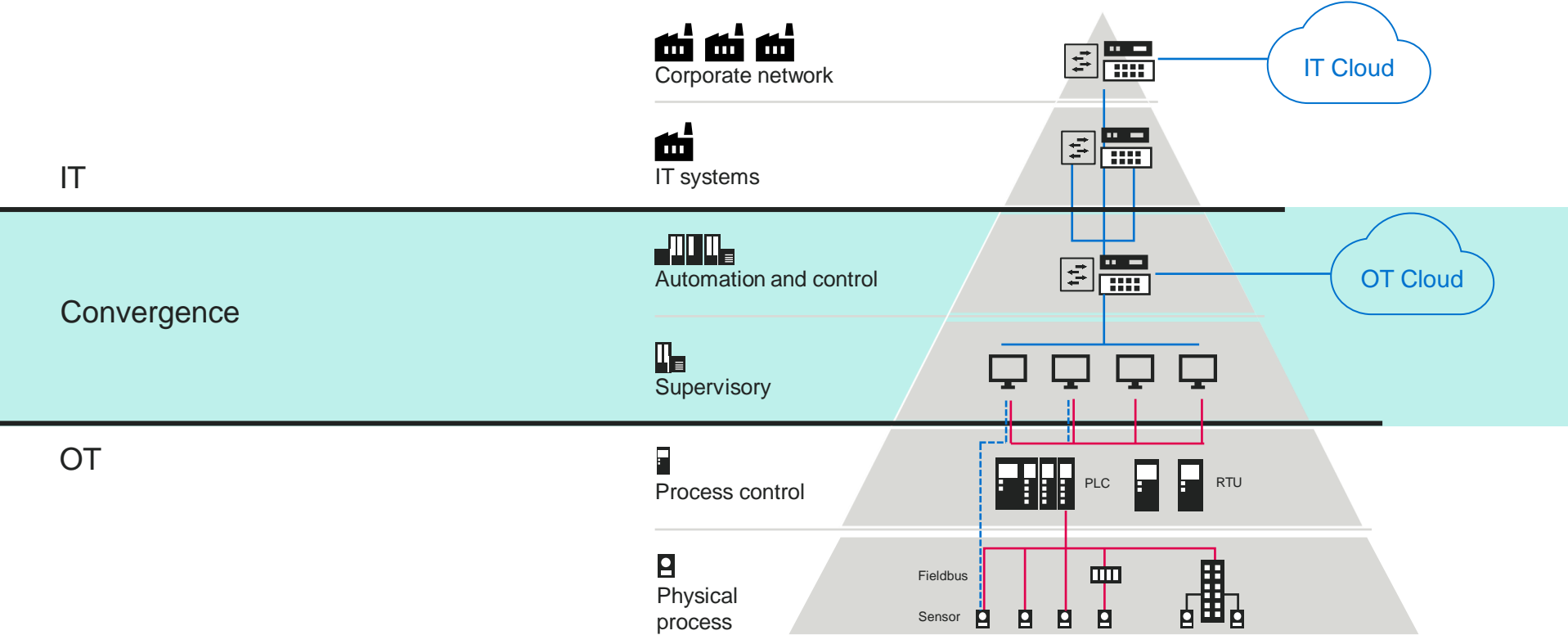
TSN enables guaranteed performance and data delivery

Today: IT and OT silos

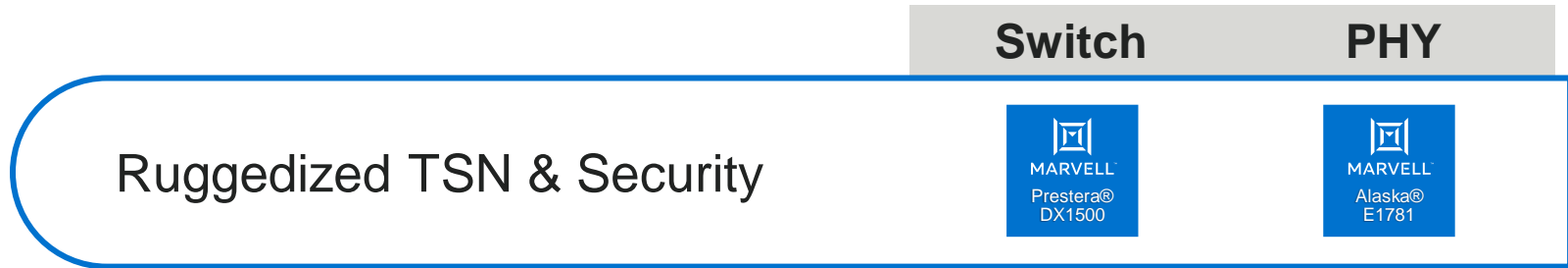
IT
OT









Future: Enterprise IT extends to OT realm



Secure Deterministic Ethernet Solution



Part of a full IT & OT networking portfolio

	Switch	PHY
Enterprise campus	 <p>MARVELL Presteria® 2K-4K</p>	 <p>MARVELL Alaska® mGig</p>
Ruggedized TSN & Security	 <p>MARVELL Presteria® DX1500</p>	 <p>MARVELL Alaska® E1781</p>
Embedded connectivity	 <p>MARVELL Link Street™</p>	 <p>MARVELL Alaska® Single 1G</p>

Presteria® DX1500 industrial switches



MARVELL™

DX1500

- 8- to 54-port industrial switch portfolio
- 10 Mbps to 10 Gbps port speeds

Comprehensive Time Sensitive Networking

Seamless redundancy: HSR/PRP

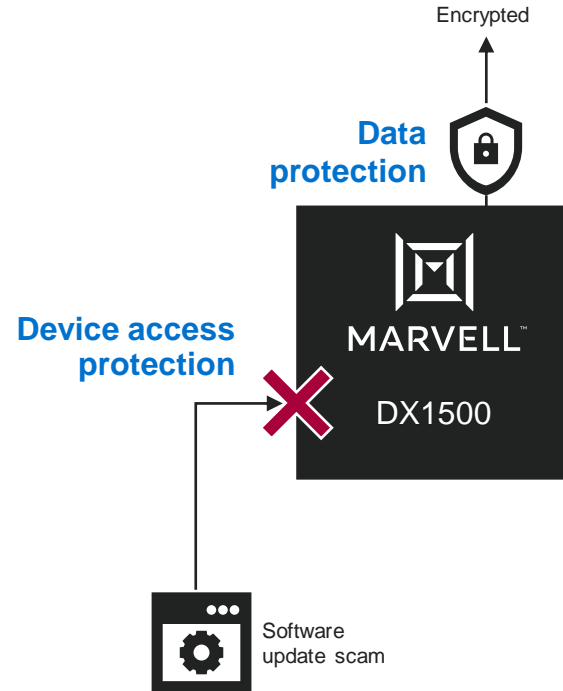
Extended temp range: up to 125°C

High integration: PHY, CPU, switch

Security: MACsec & Secure boot

Extensive telemetry

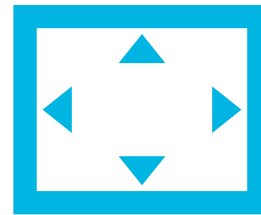
Prestera DX1500 network-embedded security



Marvell advantages for the industrial market

TSN	Deterministic Ethernet networking
Integration	SoC integration for greater efficiency
Security	Built-in security and intelligence for protected automation
Portfolio	Breadth yields place-in-network optimization
Software	Unified SDK

Industry's most comprehensive security and TSN capabilities



OEMs can accelerate their customers' transition to open, deterministic Ethernet-based networks

Manufacturing and critical infrastructure industries can more easily converge IT/OT silos



Essential technology, done right™