CISCO Engage | Tech Day Twin Cities

Bridging IT and OT:

Cisco’s Industrial Networking for Secure, Automated Operations

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Agenda

1. Market trends
2. Securing your OT network
3. Move to Artificial Intelligence
4. Reliable connectivity for automation
5. Bring IT skill to OT

Non-climate-controlled spaces require an environmentally hardened network

Extend connectivity beyond the building with networking equipment made to last

Industries are accelerating their operational transformation

Building future-ready operations for today's challenges and tomorrow's innovations

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Common issues in industrial operations

- Lack of OT visibility
- Vulnerable assets
- Lack of segmentation
- Limited OT security skill sets
- Securing vendor remote access
- Ineffective workflow between OT and IT
- Supply chain and geopolitical risk
- Operational Efficiency and MTTR

Cisco is bringing the best of IT to rugged networking

Catalyst Center

Cisco IOS® XE

Enterprise IT Grade
Best of IT innovations

Industrial Strength
Purpose built for Operations

Embedded industrial cybersecurity and zero-trust policy enforcement

IE switching is OT environment friendly

Ease of Use

Device Manager / Web UI

Management integration

Dying Gasp

SD Swap Drive

Layer 2 NAT

Industry Protocols

PROFINET®

Modbus

EtherNet/IP™

Industry Certifications

Manufacturing	✓ EN/IEC 61000-6-2	✓ EN/IEC 61326
	✓ EN/IEC 61000-6-4	✓ EN 300-328
Mining	✓ EN/IEC 61000-6-2	✓ EN/IEC 61326
	✓ EN/IEC 61000-6-4	✓ EN 300-328
Energy-Utility	✓ EN 61850-3	✓ KEMA
	✓ IEEE 1613	✓ EN 300-328
Oil and Gas	✓ EN/IEC 61000-6-2	✓ EN/IEC 61326
	✓ EN/IEC 61000-6-4	✓ EN 300-328
Transportation	✓ EN 50155	✓ EN 50121-3-2
	✓ EN 50125-1	✓ EN 61373 -61375
City	✓ NEMA TS-2	✓ EN 300-328

Cisco’s solution for industrial digital resilience

Securing your OT network

Move to Artificial Intelligence

Reliable connectivity for automation

Bring IT skill to OT

Cisco’s solution for industrial digital resilience

Addresses your top 4 priorities

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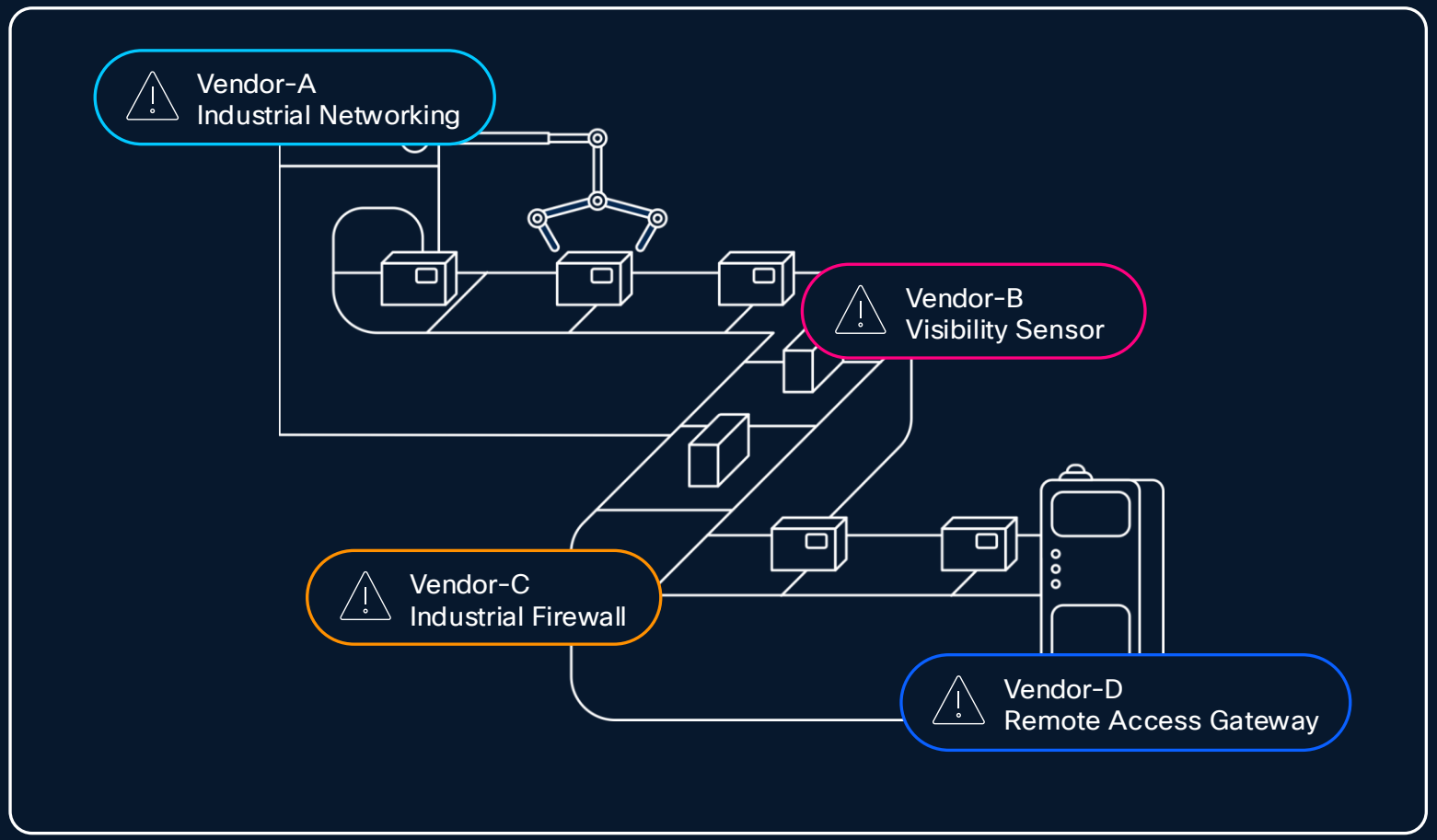
Bring IT skill to OT

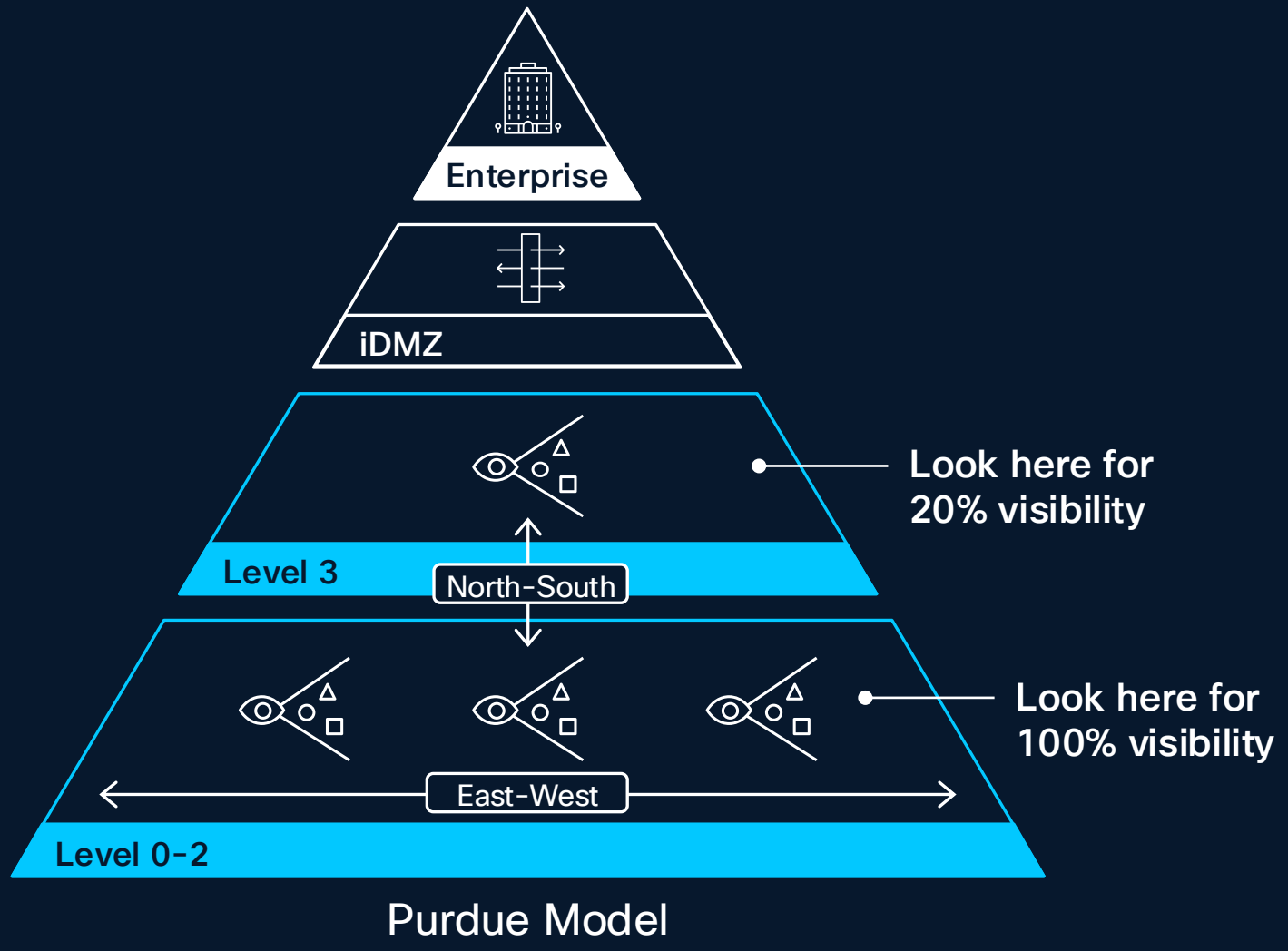
Why is it challenging to secure OT?

- Hard to scale
- Complexity
- Shadow IT



Industrial cybersecurity is fragmented by a patchwork of bolt-on solutions from different vendors

Security starts with visibility, but where you look matters



Purdue Model

Visibility to Level 0-2 using SPAN or hardware appliances is expensive and complex

You run the risk of downtime if you try to segment Level 0-2 without 100% visibility

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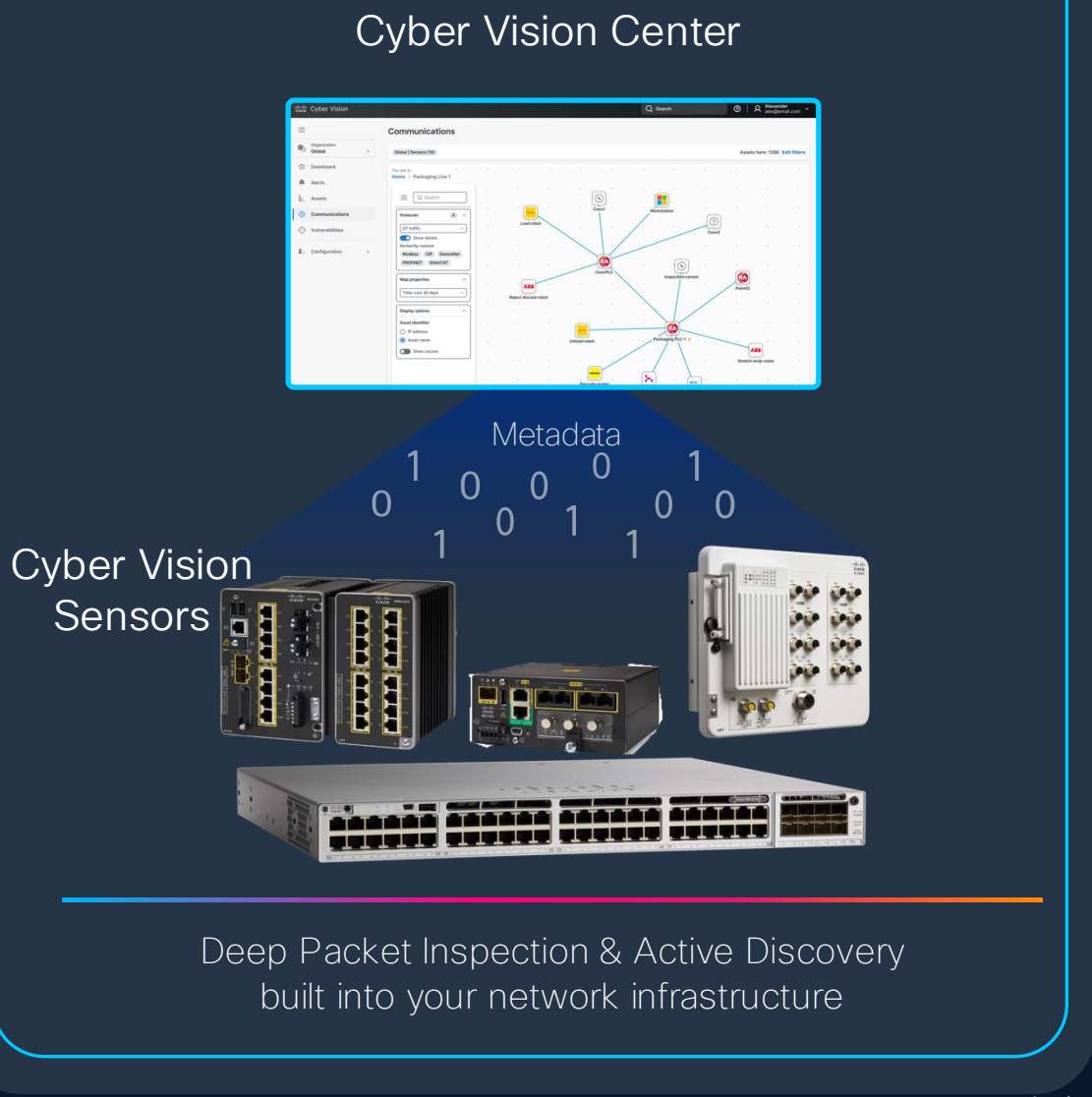
Cyber Vision helps gain comprehensive visibility at scale

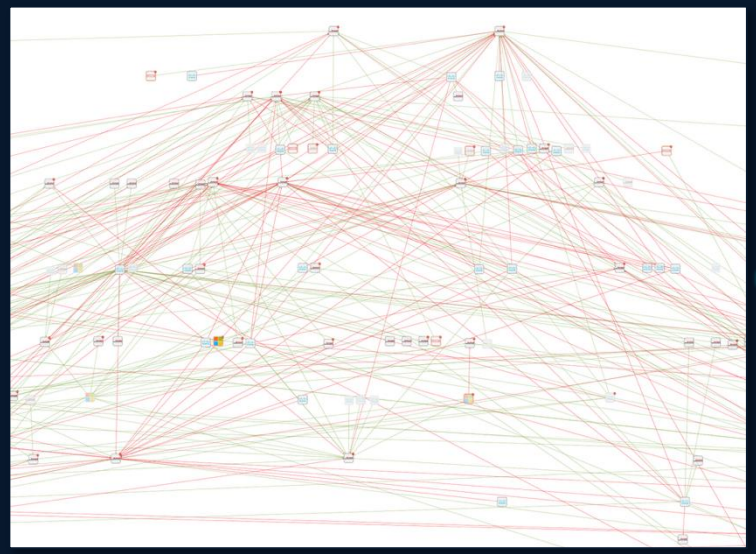
OT visibility built in, not bolted on

- Visibility sensor is a software feature running in switches and routers
- No additional appliances needed
- No out-of-band collection network needed
- Active discovery requests see past NAT and firewall boundaries



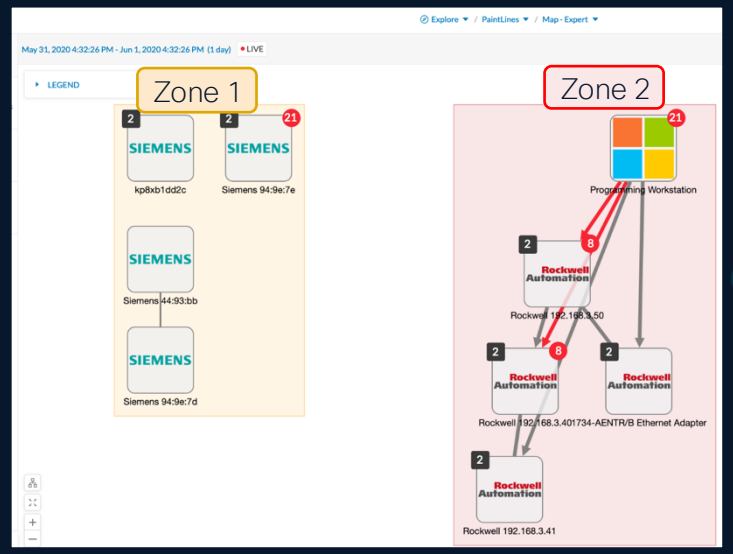
Leverage visibility to drive segmentation

Cyber Vision discovers OT assets...



OT asset inventory projects highlight flat, unsegmented networks

...and groups them into logical zones...



Cyber Vision helps OT teams document security zones to drive segmentation

...to drive policy enforcement

Cisco Identity Services Engine

Cisco Secure Firewall Management Center

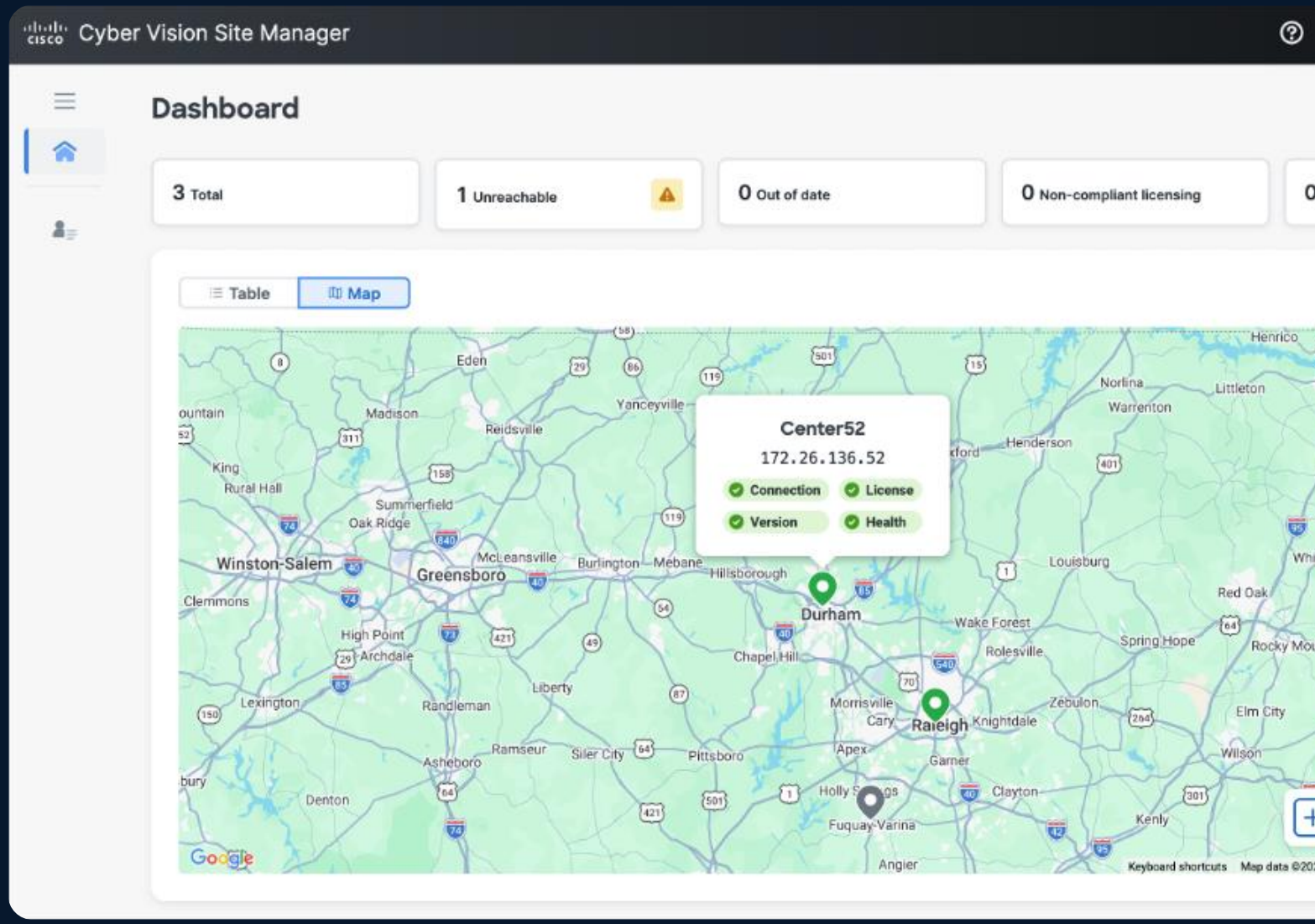
Adaptive macro/micro segmentation enforced by IT, controlled by OT

Segmenting OT networks in weeks, not in years, without causing downtime

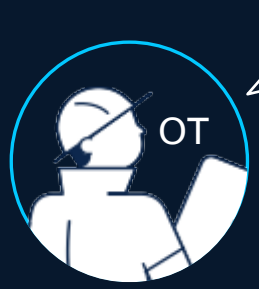
Introducing
Cisco Cyber Vision Site Manager

- Easily monitor the health of your entire OT security infrastructure from a central console
- No more siloes – ensure all sites have the latest threat detection intelligence
- Augment Cyber Vision's alerting engine with real-time IP geolocation information

Give security teams time back
to effectively manage cyber risks



“Secure” remote access typically means user frustration with cumbersome experiences



“I need to give an OEM remote access to a machine for maintenance”

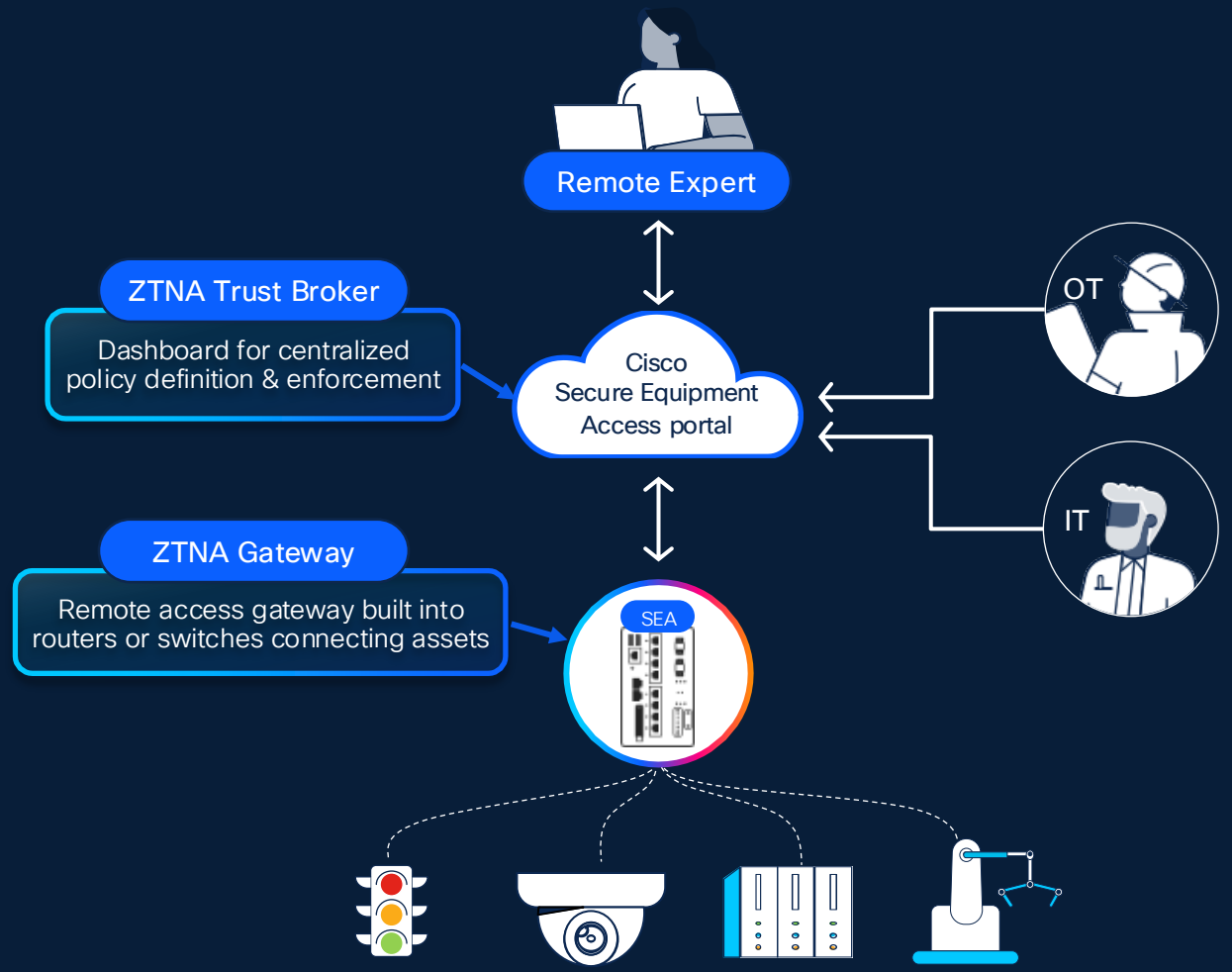
sigh...“Ok."

- ☐ Add user account to the VPN
- ☐ MFA is an optional add-on!
- ☐ Create policies for VPN user so they cannot access network
- ☐ Give user credentials to the jump server
- ☐ Add network policies to jump server to stop lateral movement
- ☐ Setup WebEx call so I can watch remotely
- ☐ Remember to close all policies when session is over

How long does it take you to grant remote access?

Cisco Secure Equipment Access

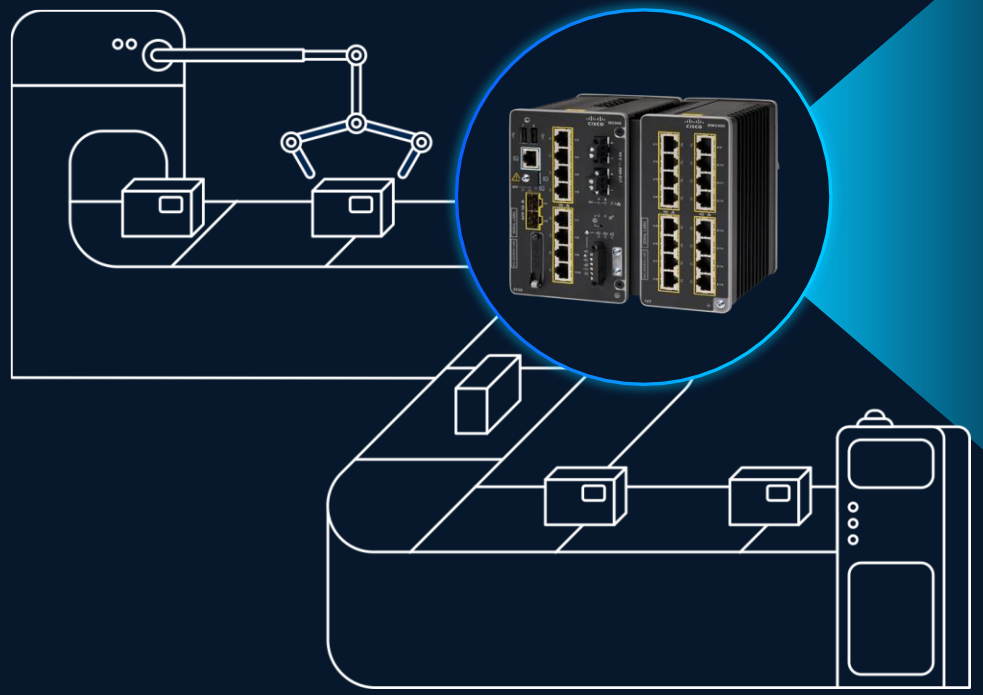
OT self-service remote access with zero-trust control



One-click zero trust remote access to any OT asset connected to Cisco industrial network

Cisco Industrial Security

Security fused into the network to protect OT at scale



OT Visibility
embedded in
network equipment

Segmentation
enforced by
network equipment

Secure Remote Access
embedded in
network equipment

Dynamic segmentation of 10,000+ assets

Challenges

- Massive automotive network that has grown organically over time without separation
- Board level directive to implement segmentation to reduce “blast radius” in case of cyber attack
- Segmentation must be enforced within short planned downtime without disrupting production

Solutions

- Cyber Vision on Industrial Ethernet footprint in levels 0-2
- Ensure no inter-zone communications were blocked before enforcing policy
- Cyber Vision + ISE to dynamically enforce segmentation policy on industrial switches

Incumbent CPS security vendor unable to extend below Level-3 due to SPAN costs

Unifying IT and OT visibility into the SOC to detect threats faster

splunk>

Visibility across the entire attack chain

- Enrich IT security event information provided to the SOC with OT context from Cyber Vision
- Visibility across the entire attack chain – detect threats before they even reach the OT network
- Unifying visibility is key whether you have a dedicated OT SOC or a unique SOC for IT and OT
- Splunk risk-based alerting reduces alert volumes and enhances productivity with high-fidelity threat detection

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Cisco’s solution for industrial digital resilience

Addresses your top 4 priorities

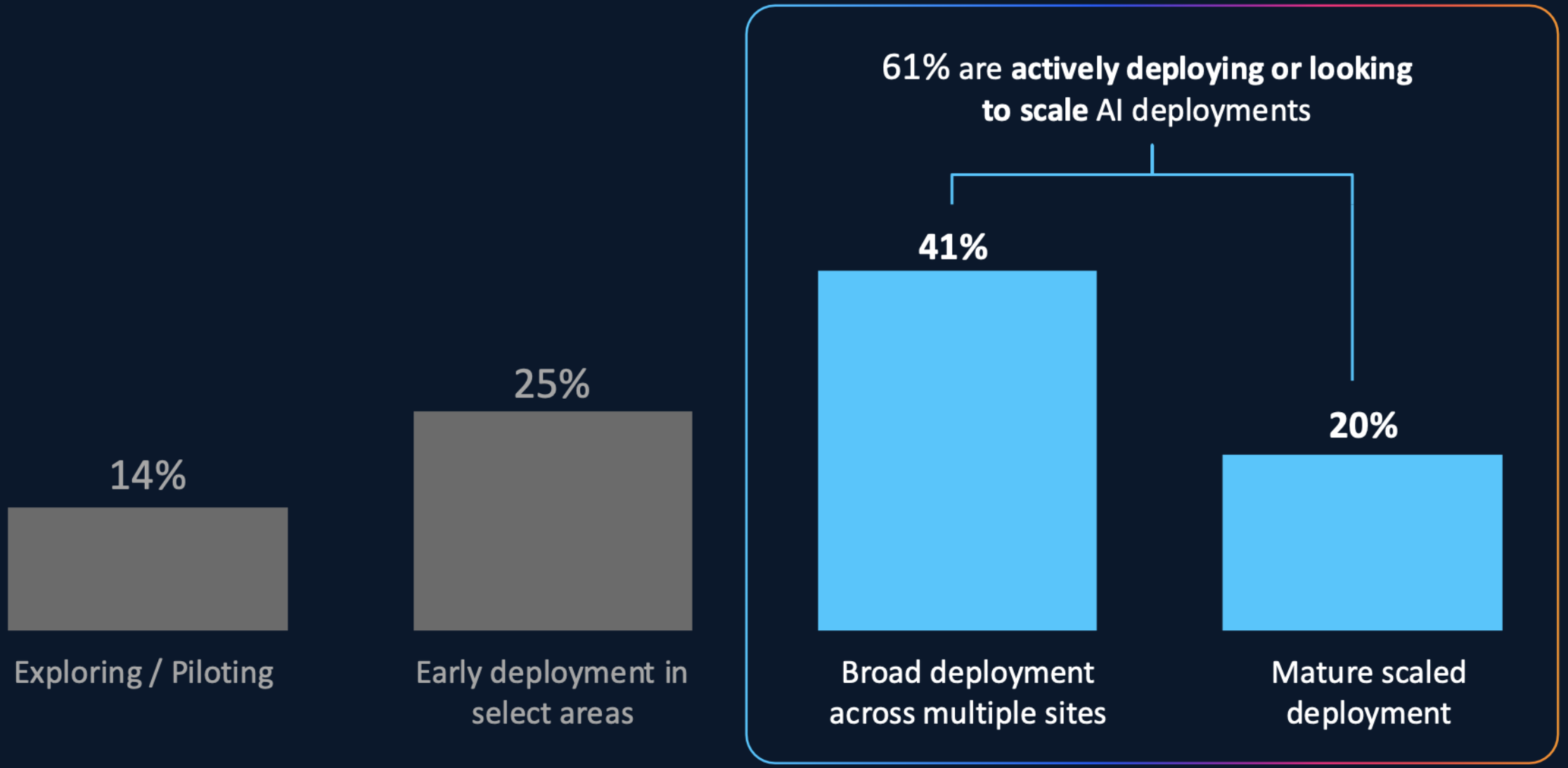
Securing your OT network

Move to Artificial Intelligence

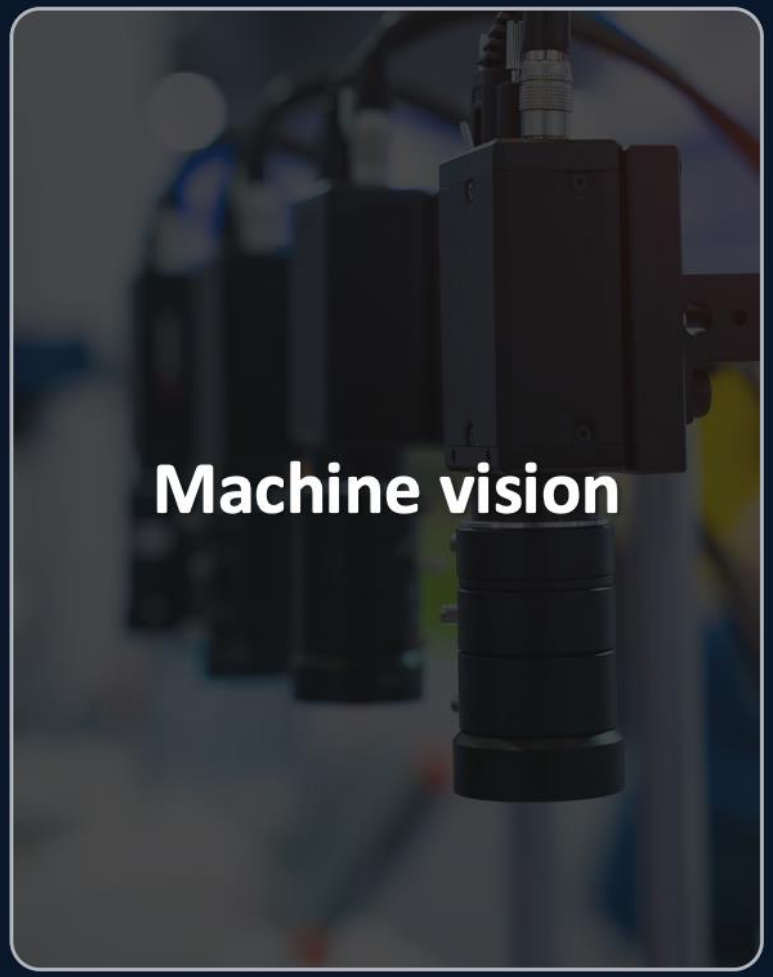
Reliable connectivity for automation

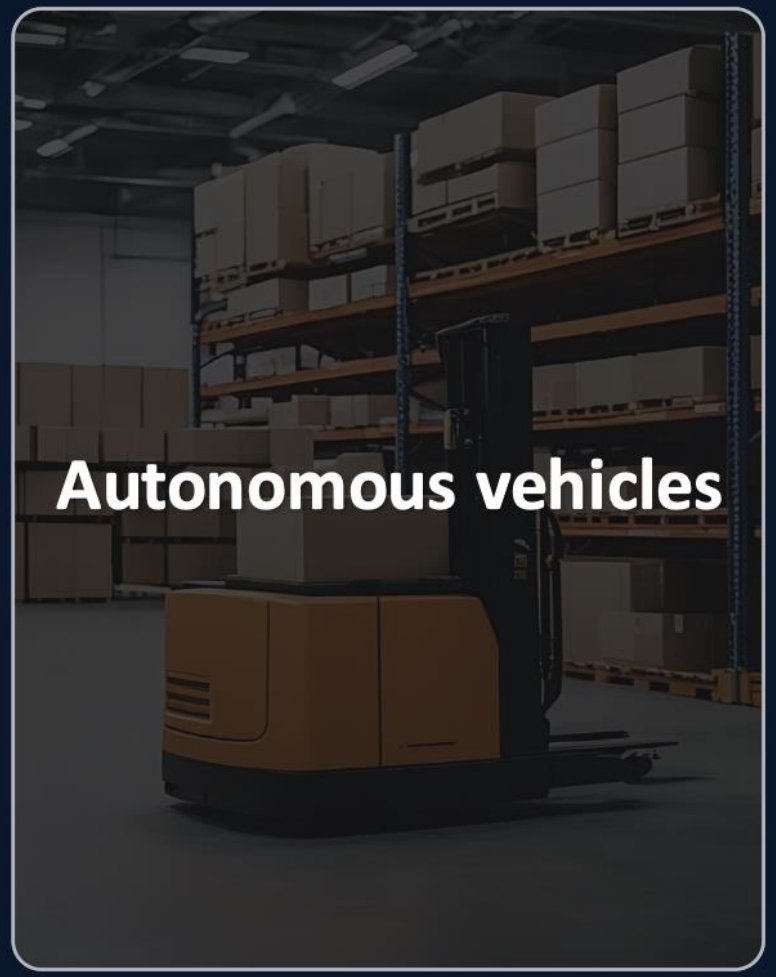
Bring IT skill to OT

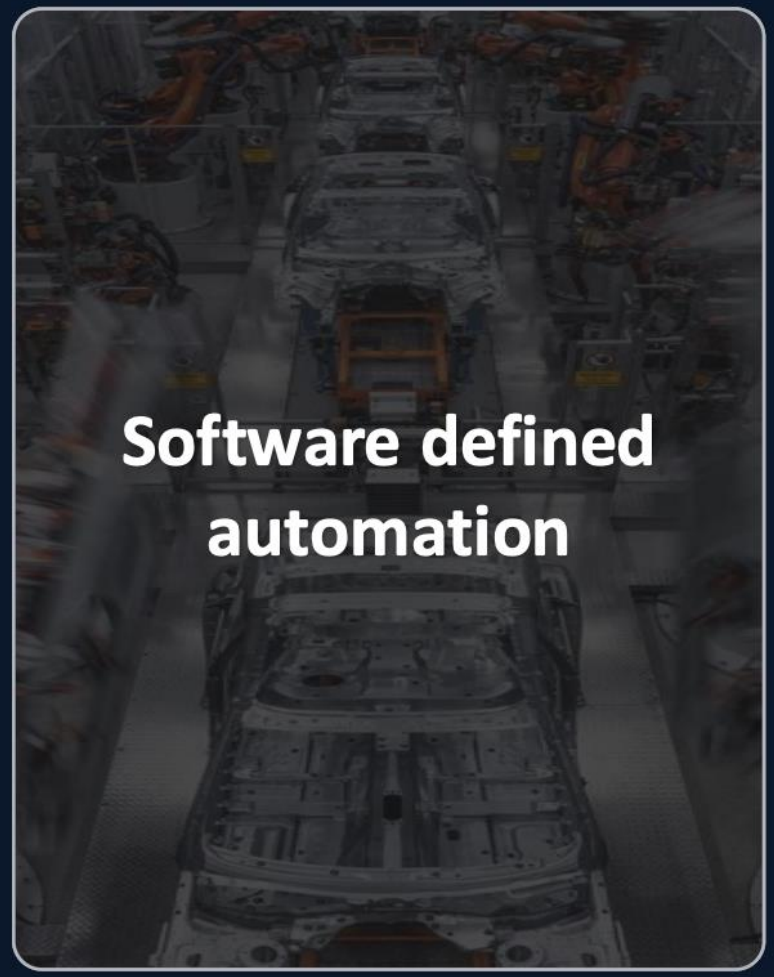
Industrial AI adoption is firmly underway



AI is revolutionizing manufacturing

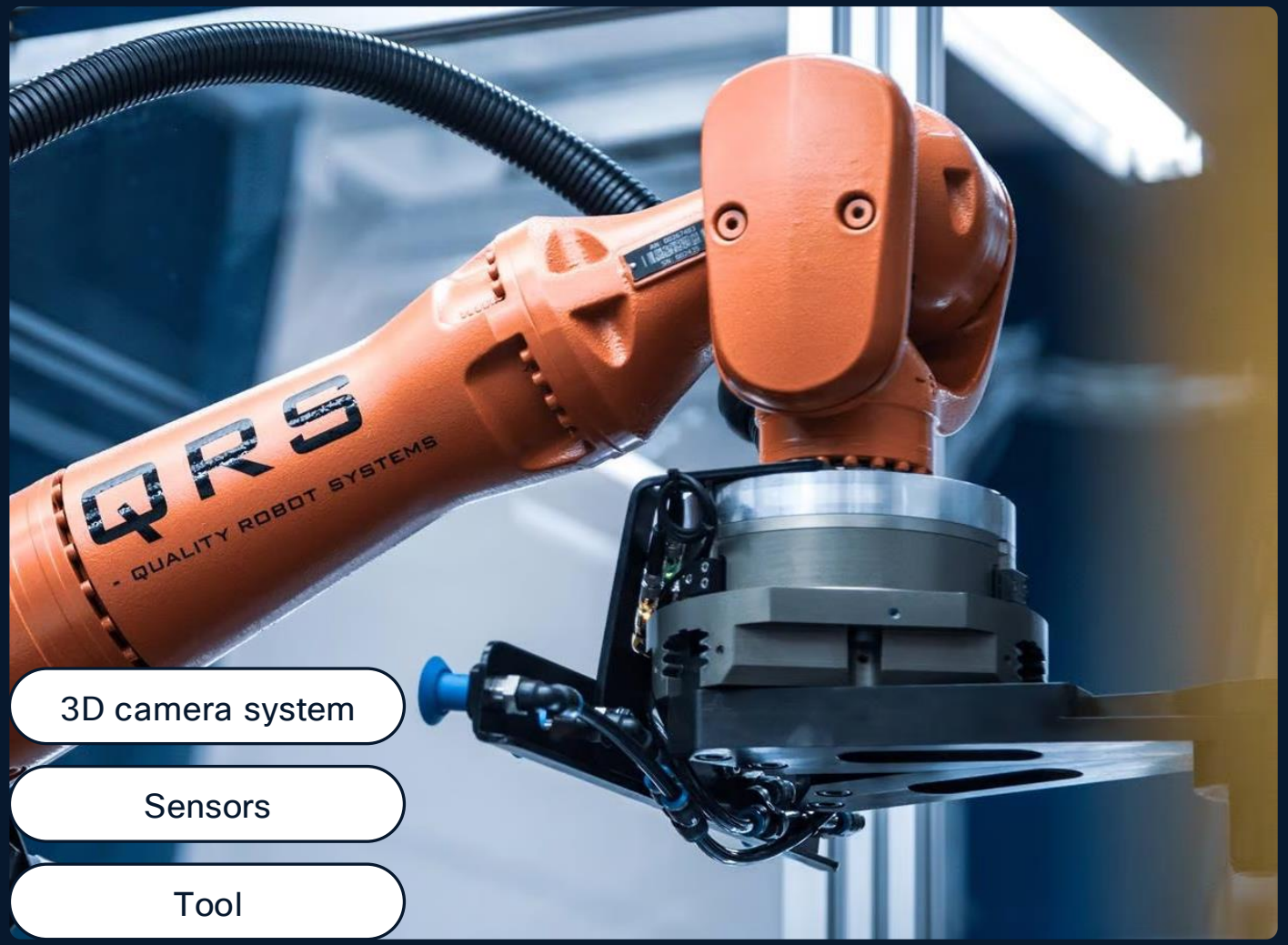






The evolution to networked machine vision

Depth perception and collision-free operation requires robot arm to be outfitted with cameras and sensors that need to be connected to the edge inferencing system

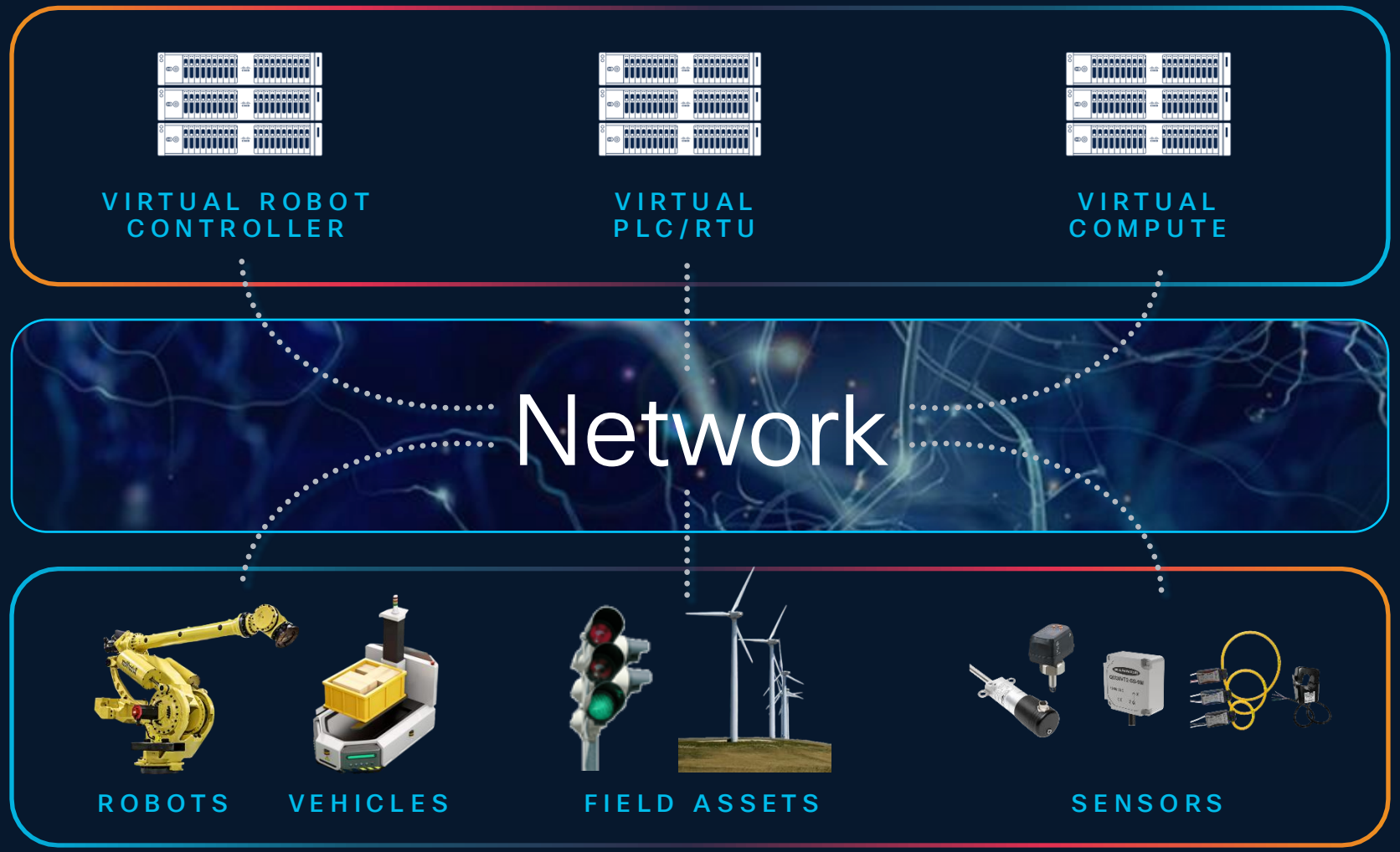


Cisco sees the network as the key to unlock software-driven industrial automation and industrial AI

Brains
in the data center

Nervous system
is the network

Physical components
in the field



Keeping industrial networks running

Increased pressure on OT personnel to ensure network availability

“The Fireman”

First Responder
Maintenance Technician

“The Doctor”

OT Escalation Point
Plant Network Engineer

“The Surgeon”

IT Escalation Point
IT Levels 1 & 2

Available on site

Low IT skills

Not available on site

High IT skills

First responders lack advanced troubleshooting skills

Today


First Responder

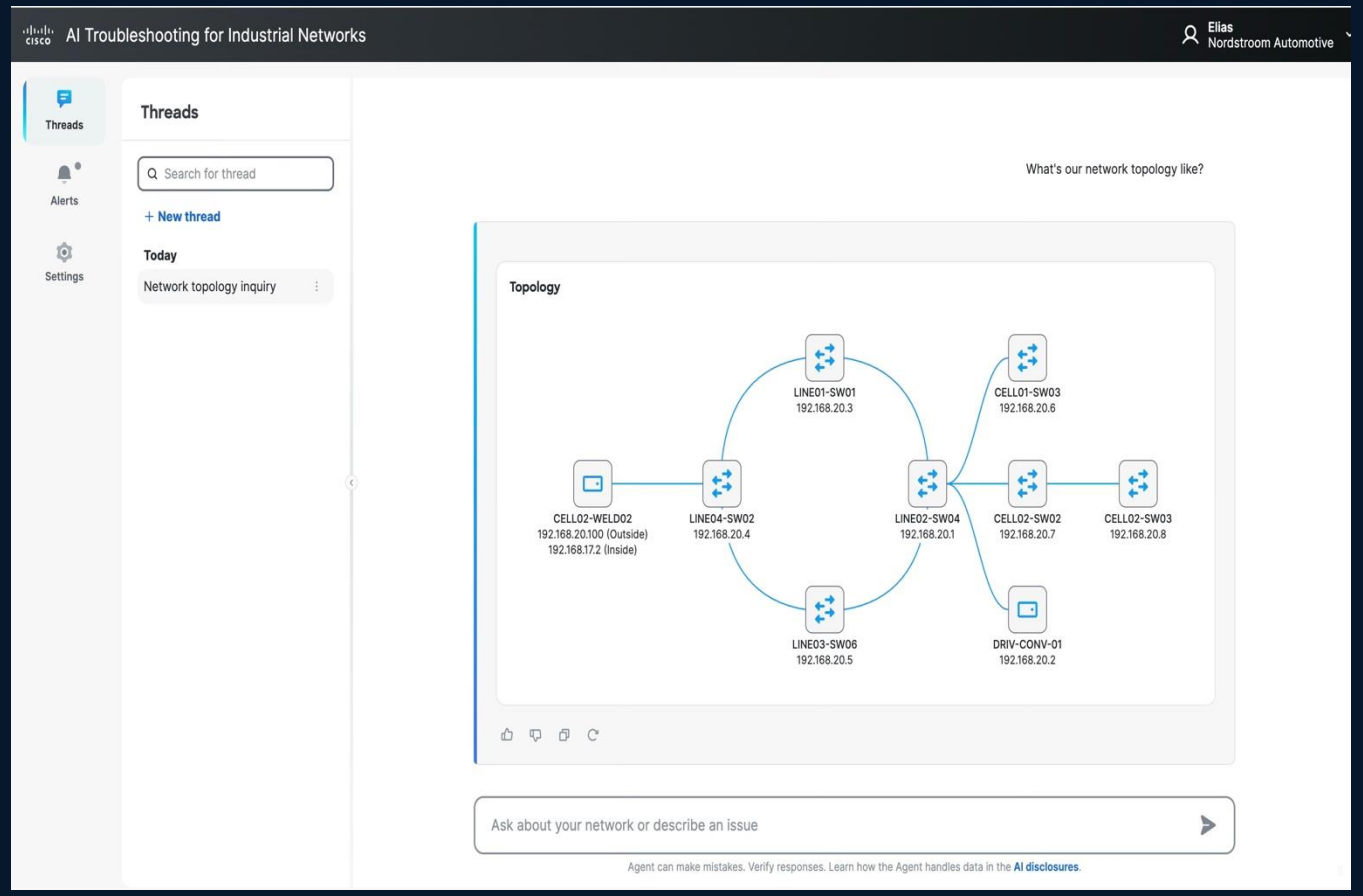

OT Escalation Point


IT Escalation Point

Introducing AgenticOps for Industrial Networks

- An OT centric conversational interface for first responders to troubleshoot without escalation
- Proactively root cause issues in industrial networks to maximize availability
- Provides actionable guidance to enable OT teams to implement fixes quickly

Empowering OT teams to maximize network availability



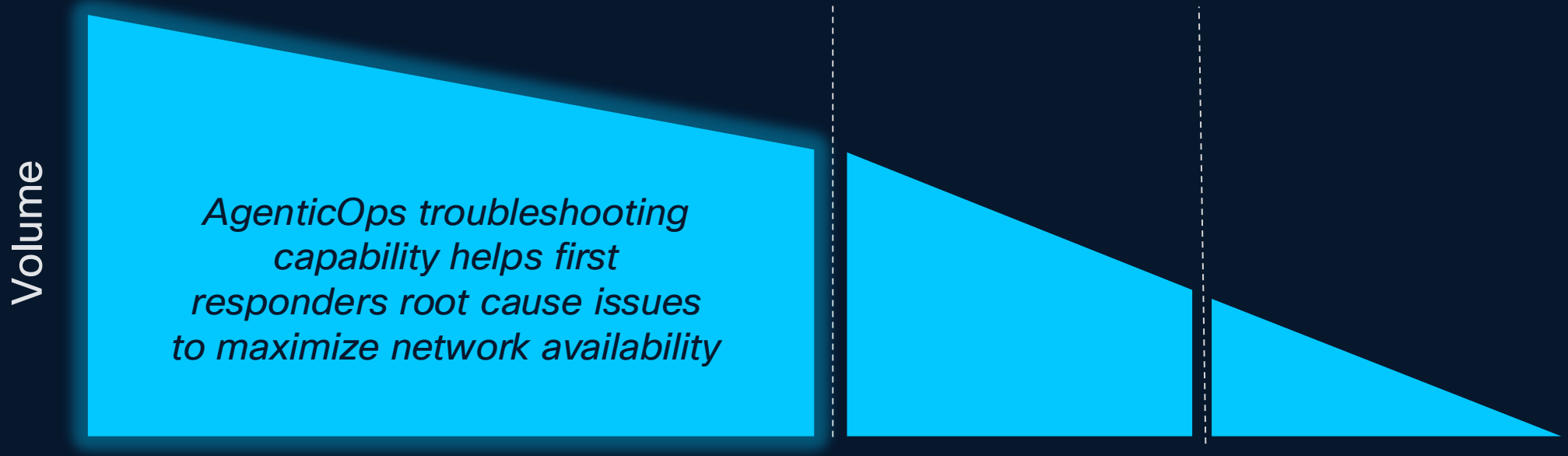
Introducing AgenticOps for industrial networks

Today

First Responder → OT Escalation Point → IT Escalation Point

With AgenticOps troubleshooting capability

 First Responder →  OT Escalation Point →  IT Escalation Point



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Cisco’s solution for industrial digital resilience

Addresses your top 4 priorities

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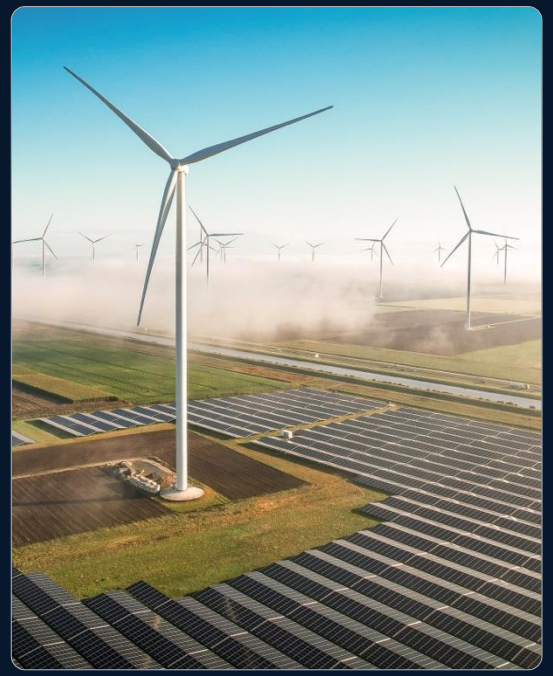
Customers need wireless that can do more

Automated guided vehicles (AGV) and Autonomous mobile robots (AMR) in plants



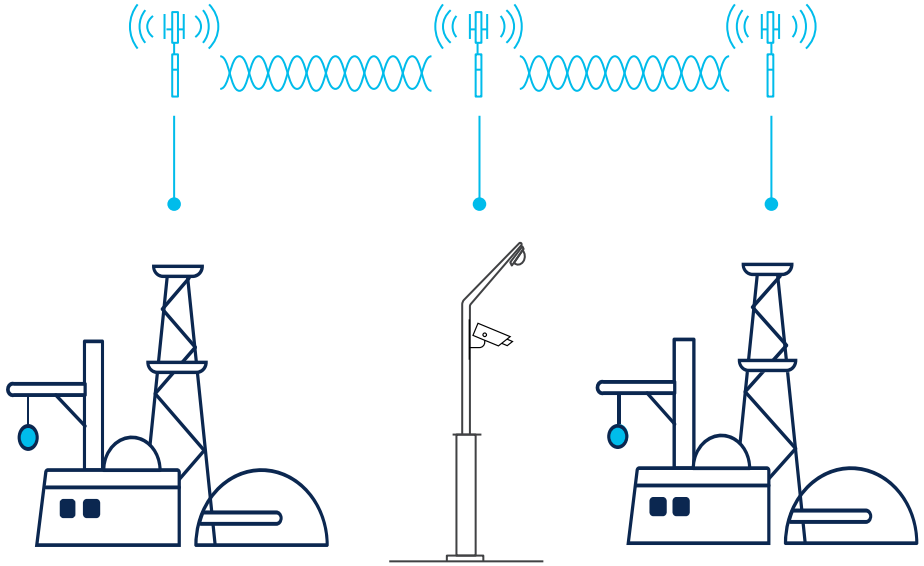
Wireless backhaul where fiber or cellular are unavailable or too expensive

Tele-remote operations in mines and ports

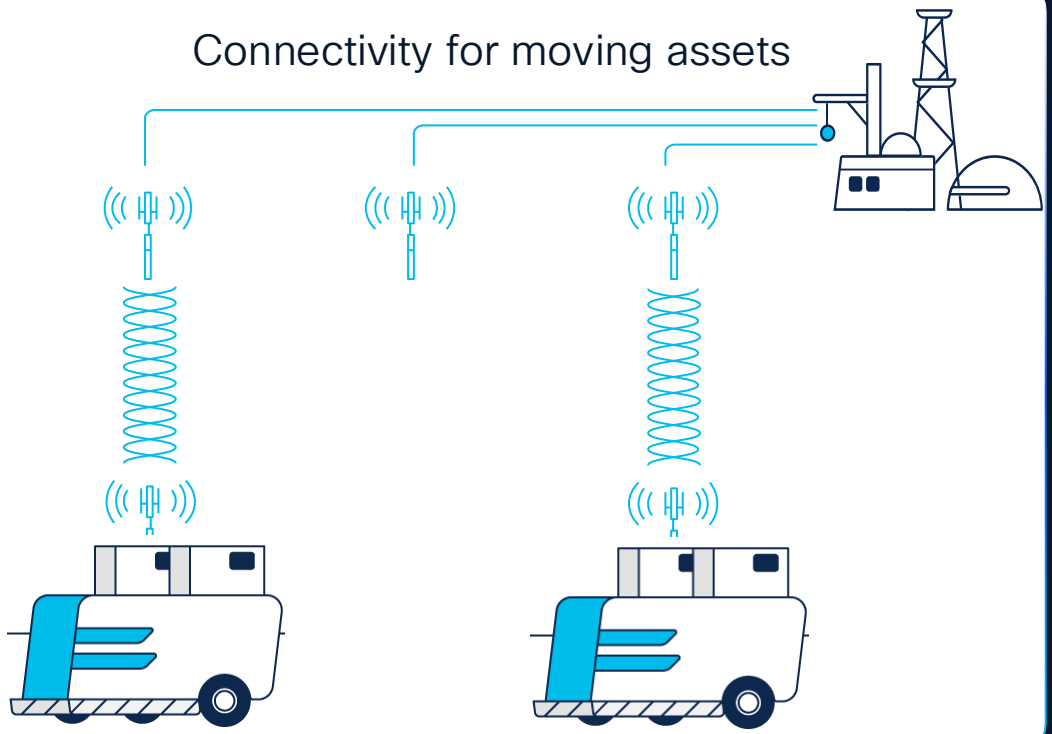
Communications-based train control (CBTC) in rail

URWB: Reliable fiber-like wireless connectivity, anywhere

Connectivity where fiber isn't available or is too costly



Connectivity for moving assets



End-to End Overlay

Make-before-break handoff

Multipath operation

Ultra-fast failover
Carrier-grade availability

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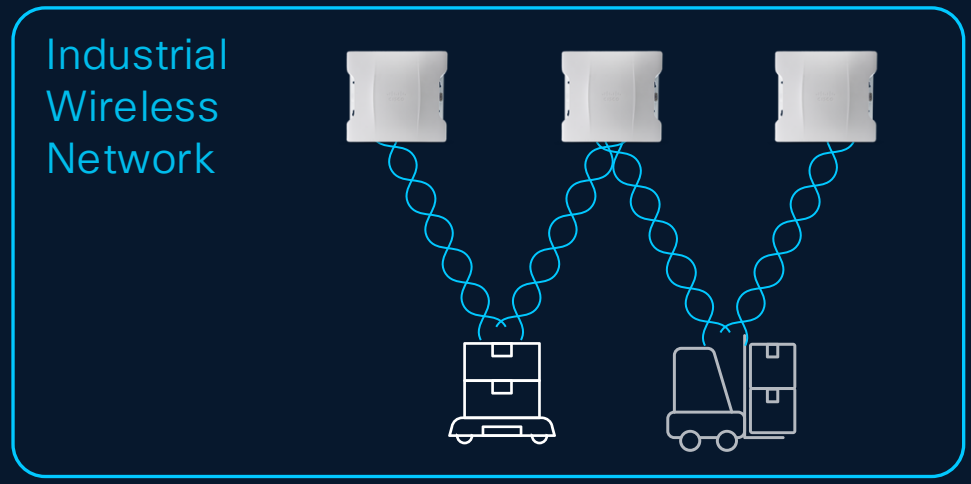
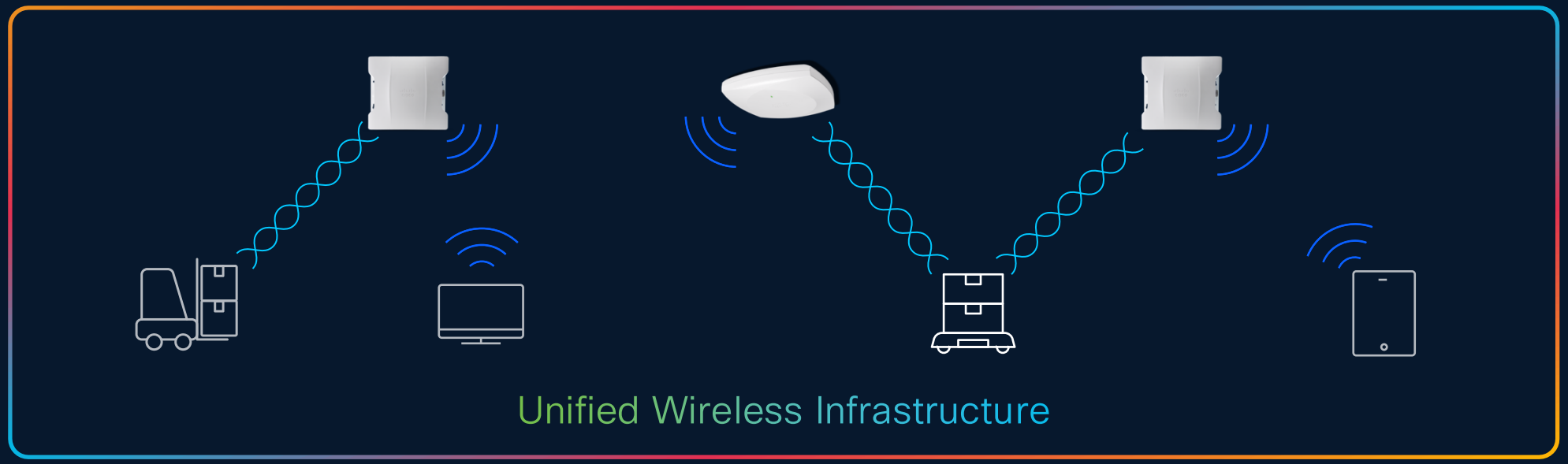
Introducing Wi-Fi and URWB unified infrastructure

Before



Now



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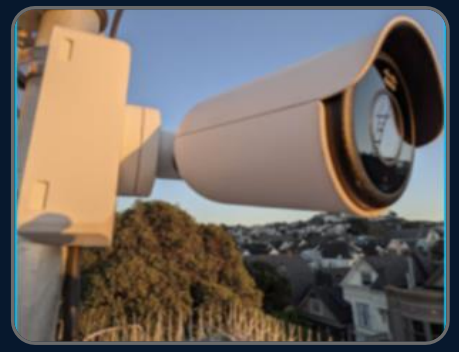
Enterprises are connecting “things” in uncarpeted spaces



Security cameras

Outdoor Wi-Fi

Mobile assets

Gate access control

ATMs

Wireless backhaul for non-wired locations

Private mobile wireless on campus

Building management systems

Outdoor digital signage

Emergency call buttons

These non-climate-controlled spaces require an environmentally hardened network

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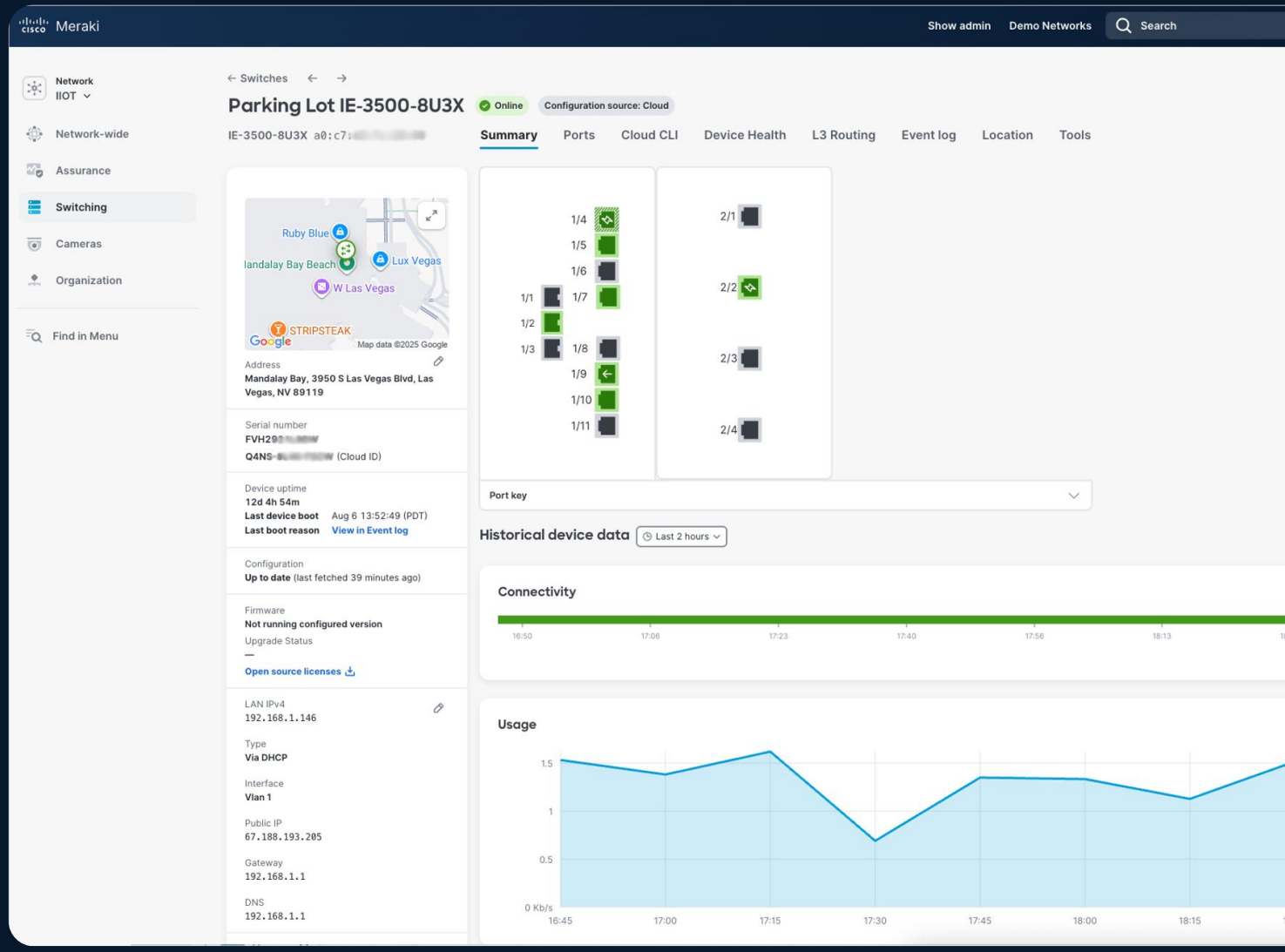
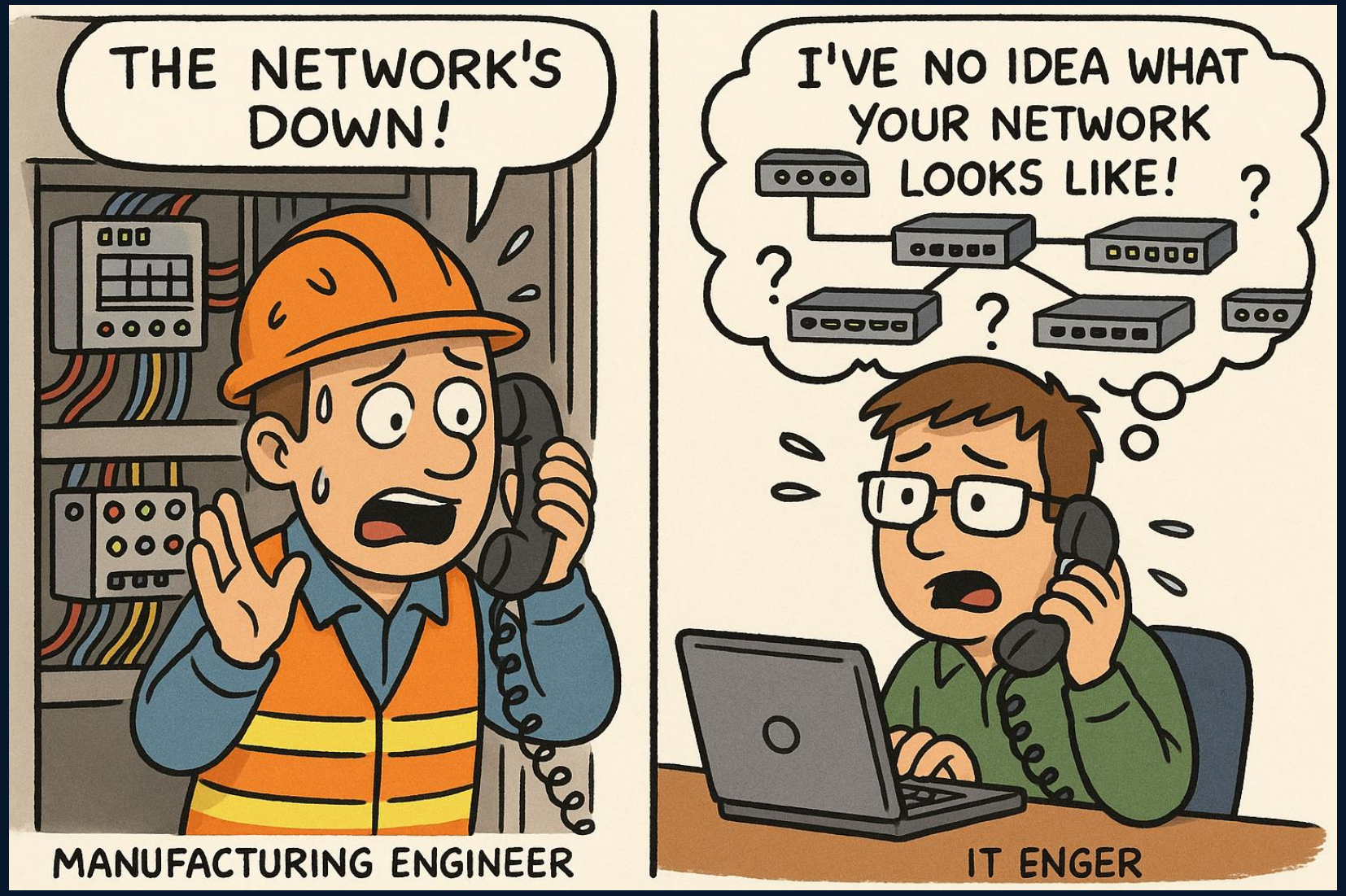
Introducing
Cloud management for Cisco rugged switches

- A single dashboard to manage enterprise and rugged switches
- Easily extend enterprise networks to outdoor and uncarpeted spaces
- Allow IT teams to enforce consistent security policies and maintain control

Seamlessly manage enterprise and rugged networks from a single cloud dashboard



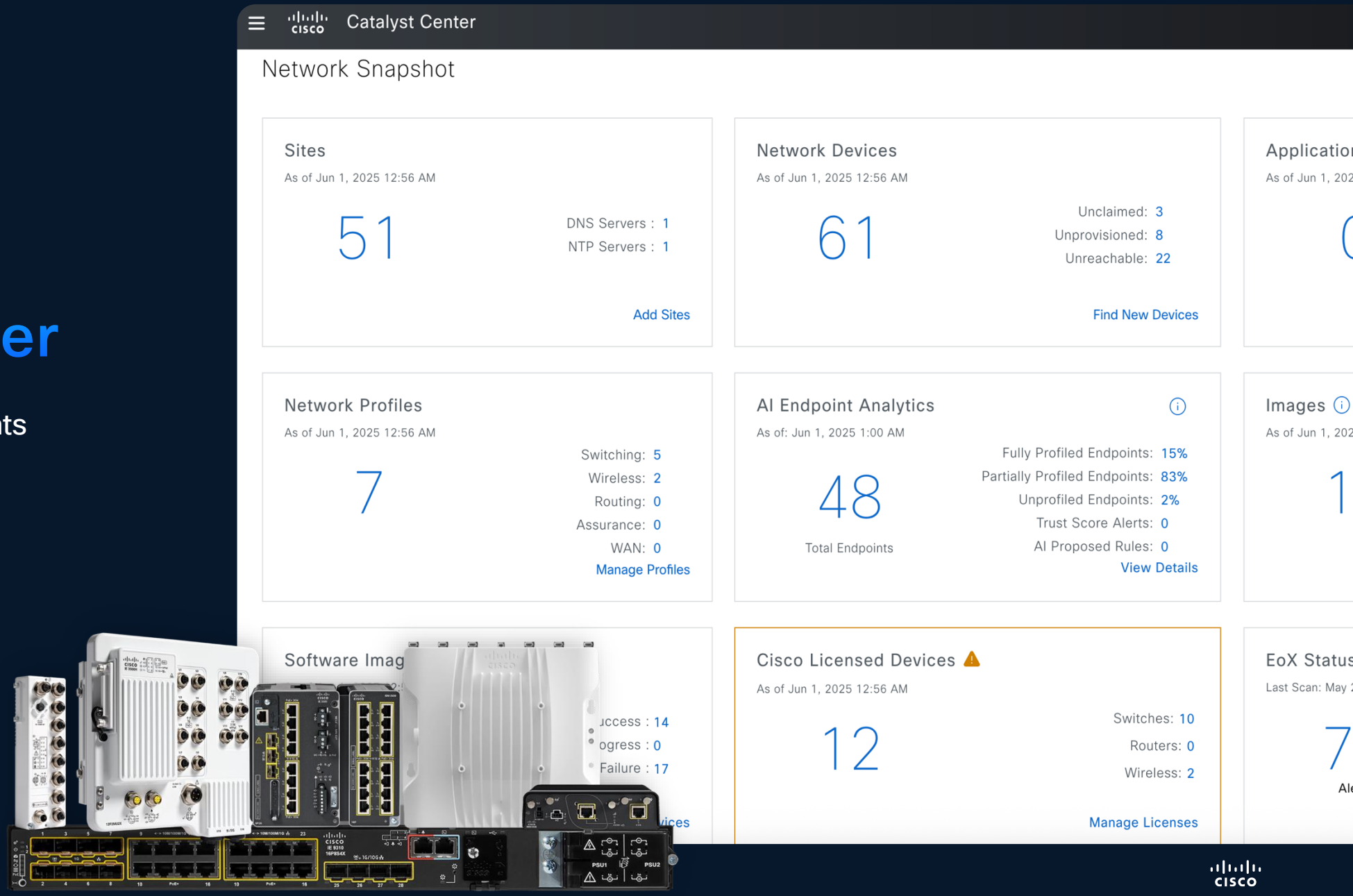
How IT & OT Have Worked Together Historically



This is your therapist saying... It can get better

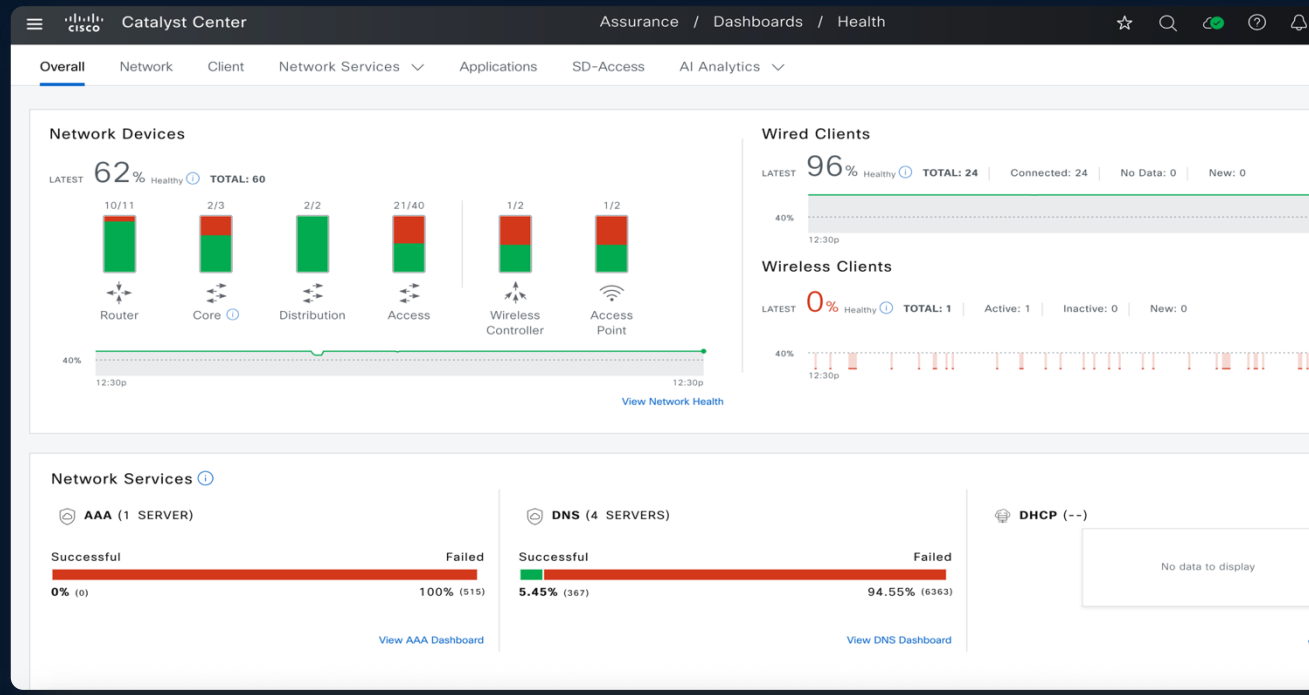
Catalyst Center

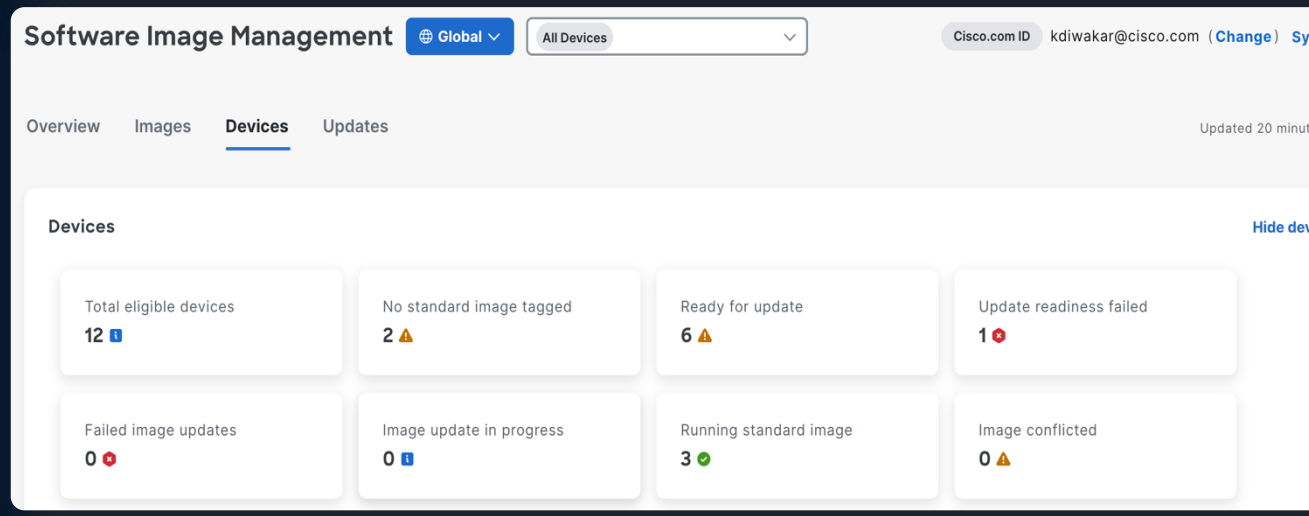
Leverage your IT investments
to gain efficiencies in OT



What can Catalyst Center do for OT networks?

- Manage networks with automation and assurance
- Secure operations by applying consistent policies and SW versions
- Reduce downtime with AI-driven problem identification and resolutions





Lean-IT collaborating with OT

Challenges

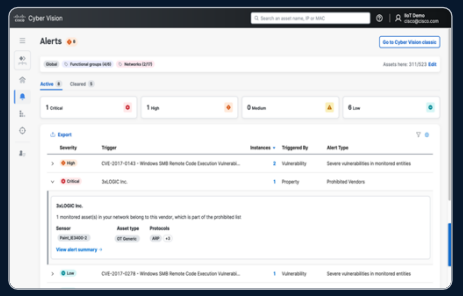
- 15+ Production sites and rapidly expanding
- Lean IT team supports OT network in growing breakthrough drug production
- Highly reliable OT network needed for precision drug manufacturing

Solutions

- I**E3300** access switch with IOS-XE to leverage existing IT knowledge and investments
- **Catalyst Center** for Zero Touch Provisioning to reduce deployment time from days to hours
- Catalyst Center configuration, software updates, and PSIRT monitoring for compliance

Cisco’s solution for industrial digital resilience

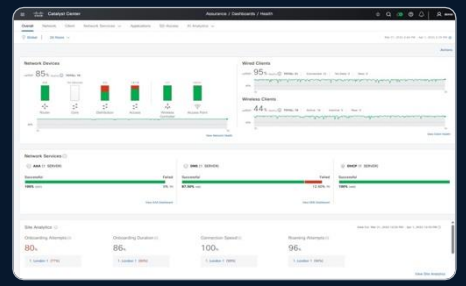
Addresses your top 4 priorities



Cyber Vision and SEA

Comprehensive Hardware Portfolio

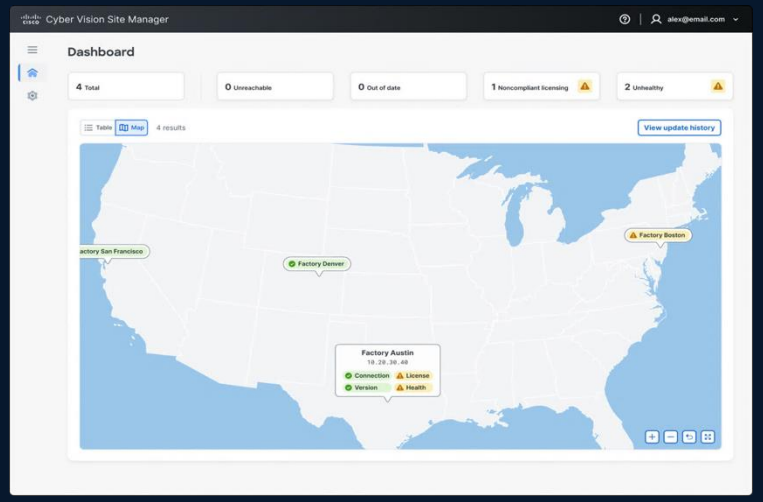
Cisco Wireless with URWB



Catalyst Center and Cloud Management

New Innovations to Drive Operational Simplicity in OT

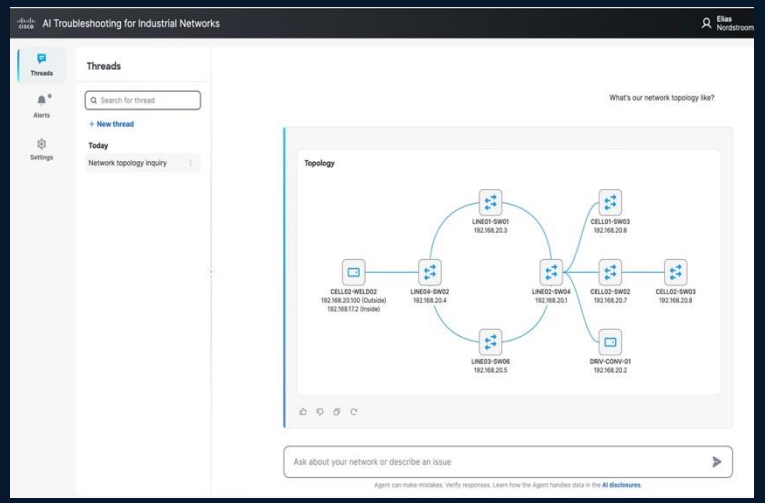
NEW!



Multi-site OT Threat Intelligence Distribution

Simplifying OT threat intel deployment and security infrastructure management

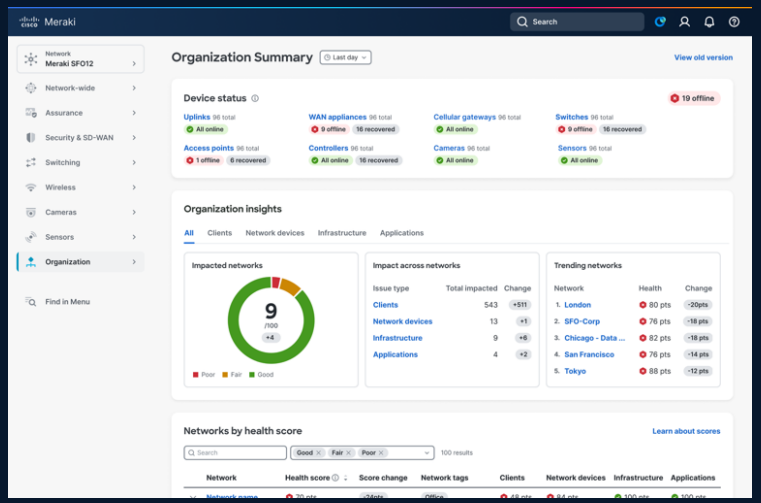
NEW!



AgenticOps for Industrial Networks

Simplifying troubleshooting for OT teams to maximize network availability

NEW!



Cloud Management for Rugged Networks

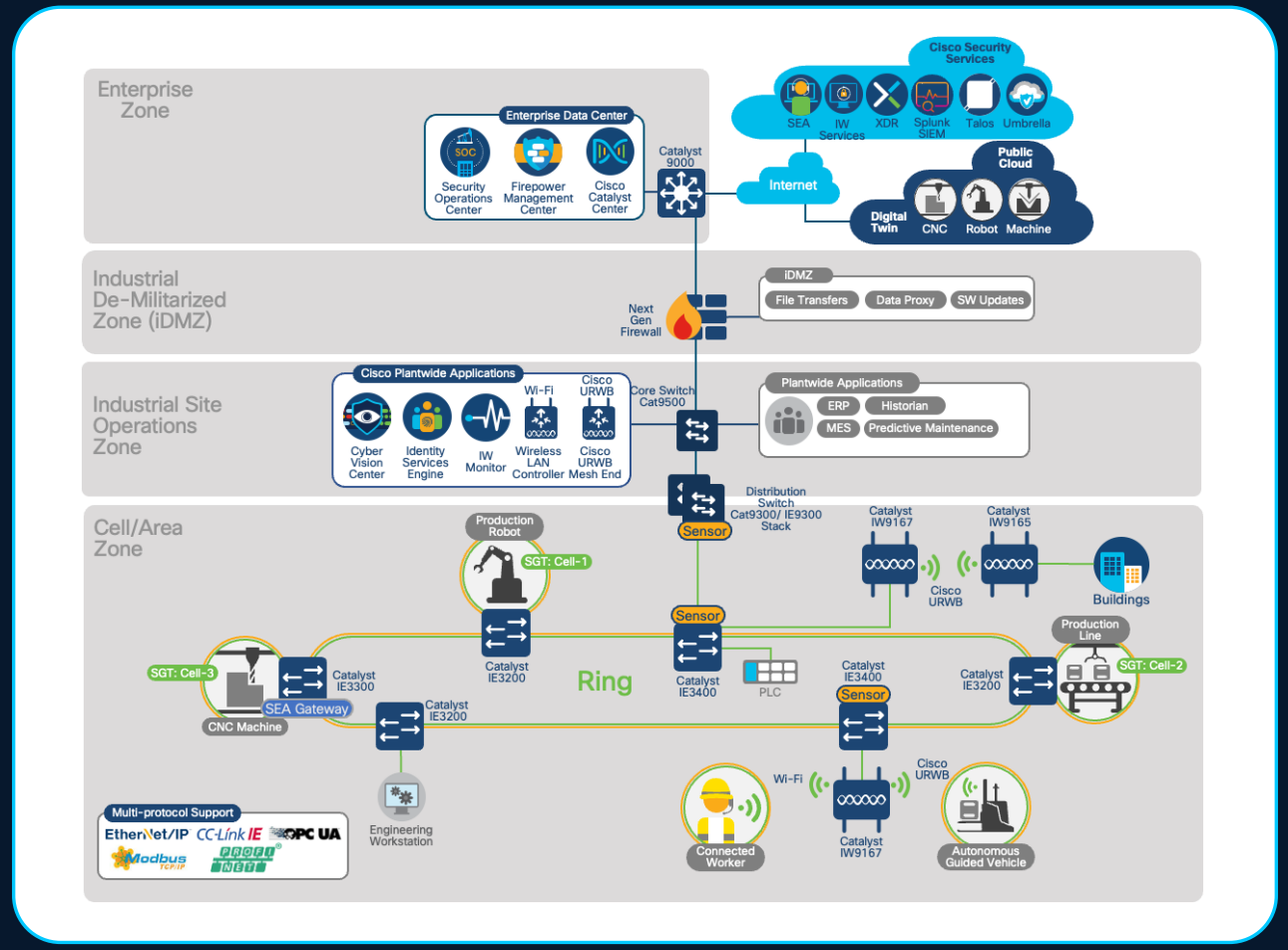
Simplifying management across IT and rugged networks with the Meraki dashboard

Cisco validated design for Industrial Systems

Technical blueprints and architectures, tested, and proven - enabling seamless standardization

Cisco Validated Design

- Faster deployments
- Less Risk
- Increased predictability
- End-to-end designs



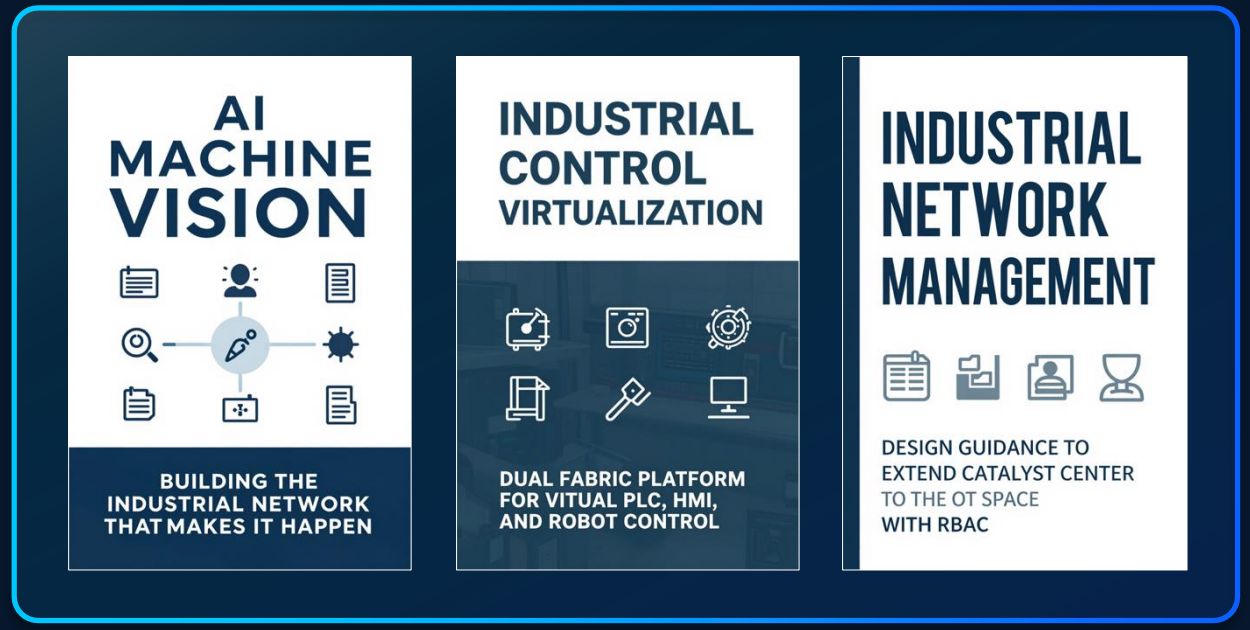
Proven to work with: Rockwell Automation SIEMENS Schneider Electric MITSUBISHI ELECTRIC

Introducing
New Validated Designs for Manufacturing

- Seamless standardization
- Faster deployments
- Less risk
- Increased predictability
- End-to-end designs

Simplifying OT networks with proven technical blueprints and architectures

Cisco Validated Design



www.cisco.com/go/iotcvd

Leverage the best of Cisco's decades of experience

Industry-leading networking

Industrial IoT Portfolio

- Comprehensive wired wireless and security portfolio
- Ruggedized and purpose built for OT industrial use cases

Cybersecurity and incident response

Cisco Industrial Threat Defense

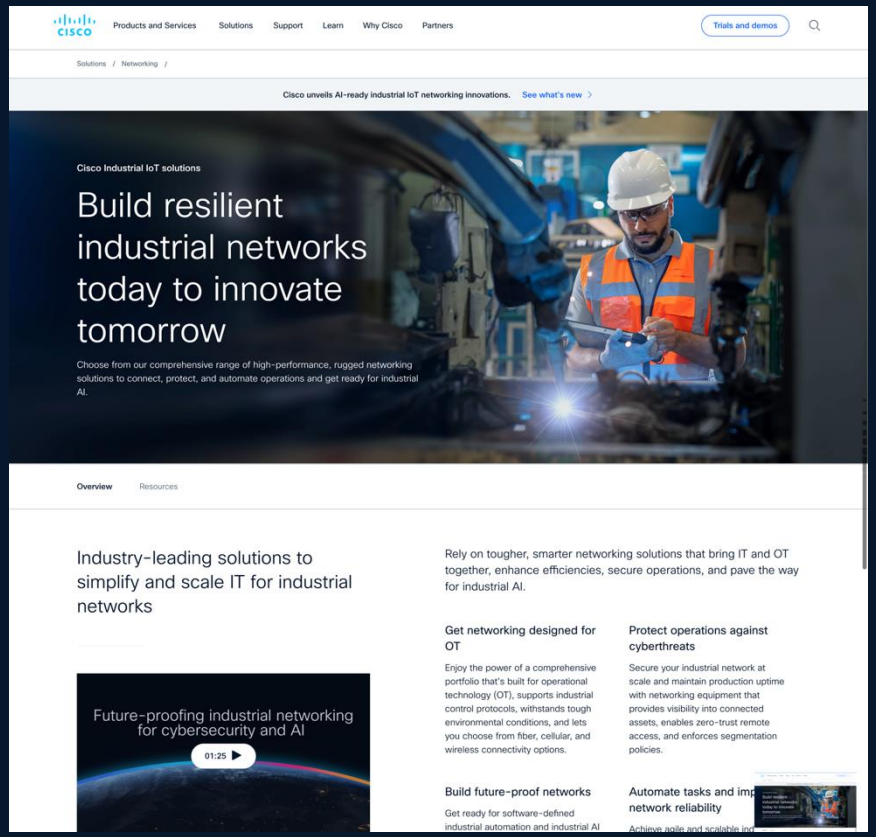
- OT visibility embedded in the network
- Zero Trust Network Access for OT
- Segmentation

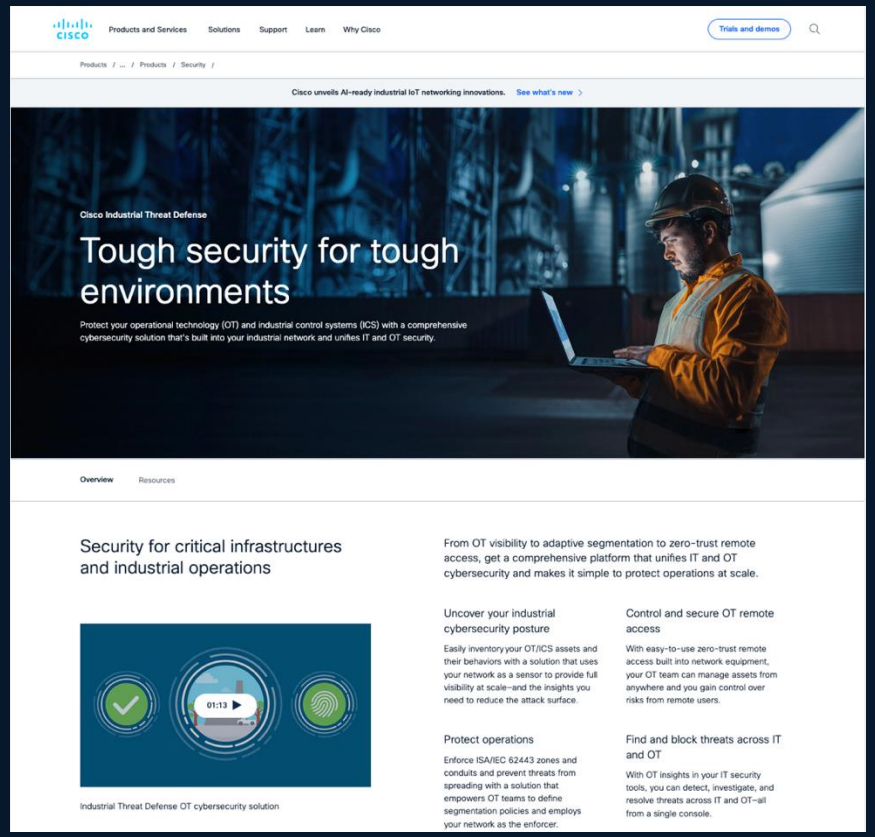
Best practices to design and deploy

Cisco Validated Designs

- Faster deployments
- Decreased risk
- End-to-end designs

Learn more





[Cisco IoT: cs.co/iot](cs.co/iot)

[IoT CVD: cisco.com/go/iotcvd](cisco.com/go/iotcvd)

Thank you