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Industrial Control Systems Demand Industrial-Strength Networks.

Industrial Foundation Networks

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IFN

Wunderlich-Malec's Industrial Foundation Network Is Your Solution.

Fully Functional

Highly Available

Cyber Secure

Industrial Foundation Networks

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www.wmeng.com/solutions/it-ot-convergence/industrial-foundation-networks-ifn/

What is Operational Technology Infrastructure (OT)?

All essential common functions required for SCADA, DCS, & other industrial control systems to work together.

To succeed, OT infrastructure must be fully functional, highly available, and cyber-secure.

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OT Industry Challenges

- ***Industrial automation & control systems are only as reliable as the OT infrastructure foundation they are built on.***
- Infrastructure failure can cause security breaches, communications failure, disruption of critical functions, & data loss. Ultimately it can compromise product quality, health & safety & the bottom line.

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OT Industry Challenges

- **Today's OT infrastructure requirements have evolved beyond do-it-yourself.** Success requires converged skills and practices from IT and Automation teams.

- **OT & IT share tools & skills but have very different priorities.** Some IT best practices can compromise industrial automation environments due to real-world impact.

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IT – OT Alignment

Success depends on a strong IT – OT partnership.

- **Build a Shared Vision** of the Automation Mission.
- **Commission the Partnership** through Leadership policy.
- **Create a RACI** of roles and responsibilities.
- **Foster Respect** for each team's skills.

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IT vs. OT

IT

- **Domain: Information Management**
- **Focus**: Data processing, storage, and management.
- **Impacts**: Intellectual property, business process and data management.
- **Governance**: Data protection laws and cybersecurity standards.
- **Priorities**:
  - **C** – Confidentiality
  - **I** – Integrity
  - **A** - Access

OT

- **Domain: Industrial Control**
- **Focus**: Real-time control and monitoring of physical processes and machinery.
- **Impacts**: Product or service quality, health and safety.
- **Governance**: Industry-specific safety and operational regulations.
- **Priorities**
  - **A** – Access
  - **I** – Integrity
  - **C** - Confidentiality

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Introducing: The WM Industrial Foundation Network (IFN)!

The IFN is an integrated OT Infrastructure platform with 14 essential functions that is fully functional, highly available, and cyber-secure.

The IFN architecture provides common infrastructure services for all industrial controls, from edge to datacenter and cloud.

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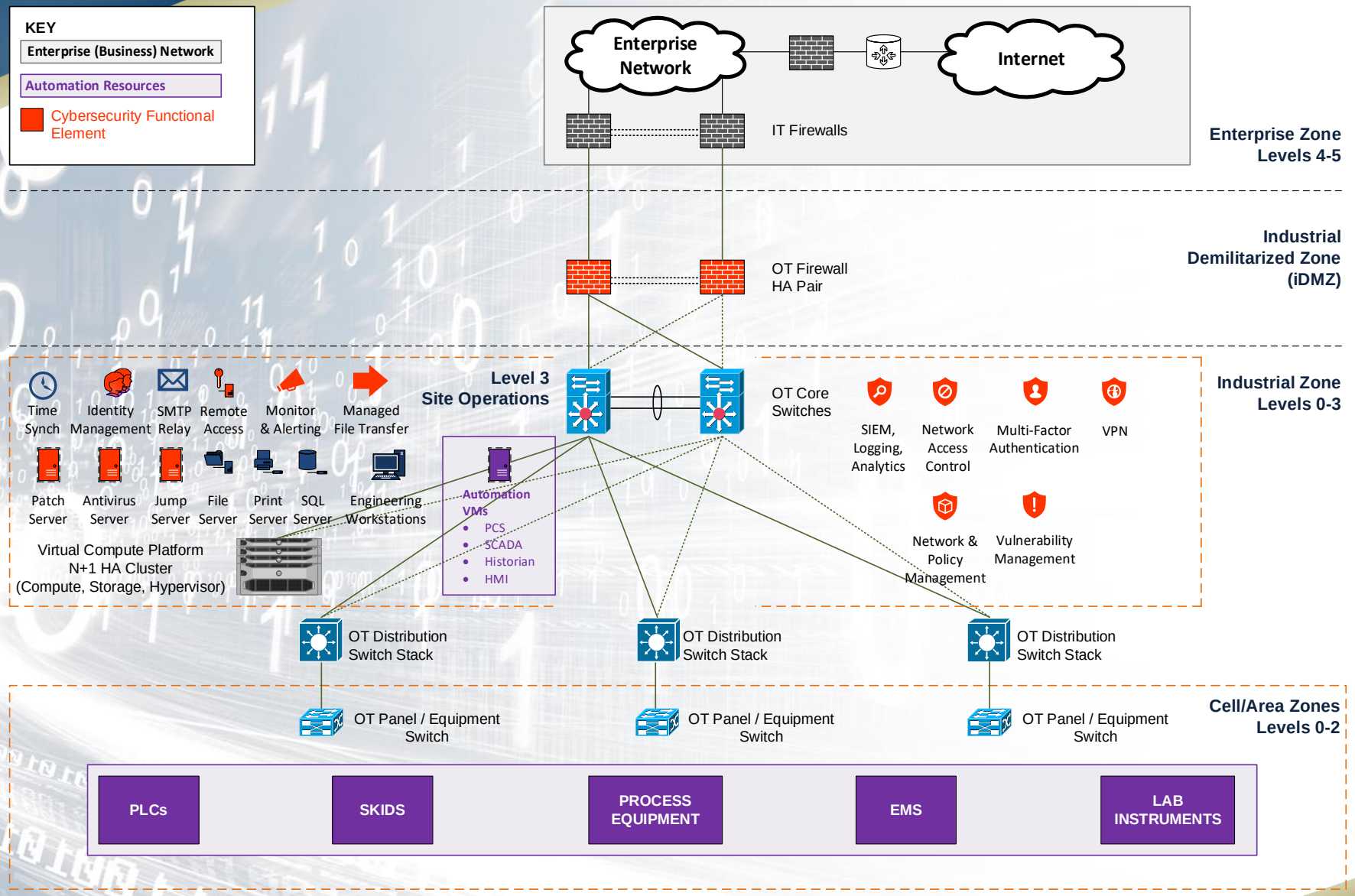
IFN Architecture



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Fully Functional: What are OT Essential Functions?

Core Functions

- Network
- Virtual Compute
- Identity & Access Management (IAM)
- Backup

Support Functions

- Facilities
- File Services
- Print Services
- SQL Services
- Computers
- Remote Access
- Managed File Transfer
- Infrastructure Monitoring & Alerting
- Antivirus
- Vulnerability Management

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What Is Highly Available? (Critical Function Resiliency)

Critical functions are resilient by design, including:

- Power
  - Circuits
  - Power Supplies
- Network
  - Firewall Pairs
  - Multi-Chassis Link Aggregation Groups
- Virtual Compute
  - N+1 Cluster
- Identity and Access Management
  - N+1 Domain Controllers

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What Is Cyber-Secure?

- **Baseline:**
  - "Purdue 95" Reference Model ISA 95.01–IEC 62264-1
  - NIST SP 800-82r3 "Guide to Operational Technology (OT) Security"
  - NIST Cybersecurity Framework 2.0
- **Plus:** Industry Vertical Standards, Including:
  - Food and Drug: FDA CGMP
  - Energy: NERC CIP, DOE C2M2
  - Water / Wastewater: CISA / EPA WCAT
  - Etc.

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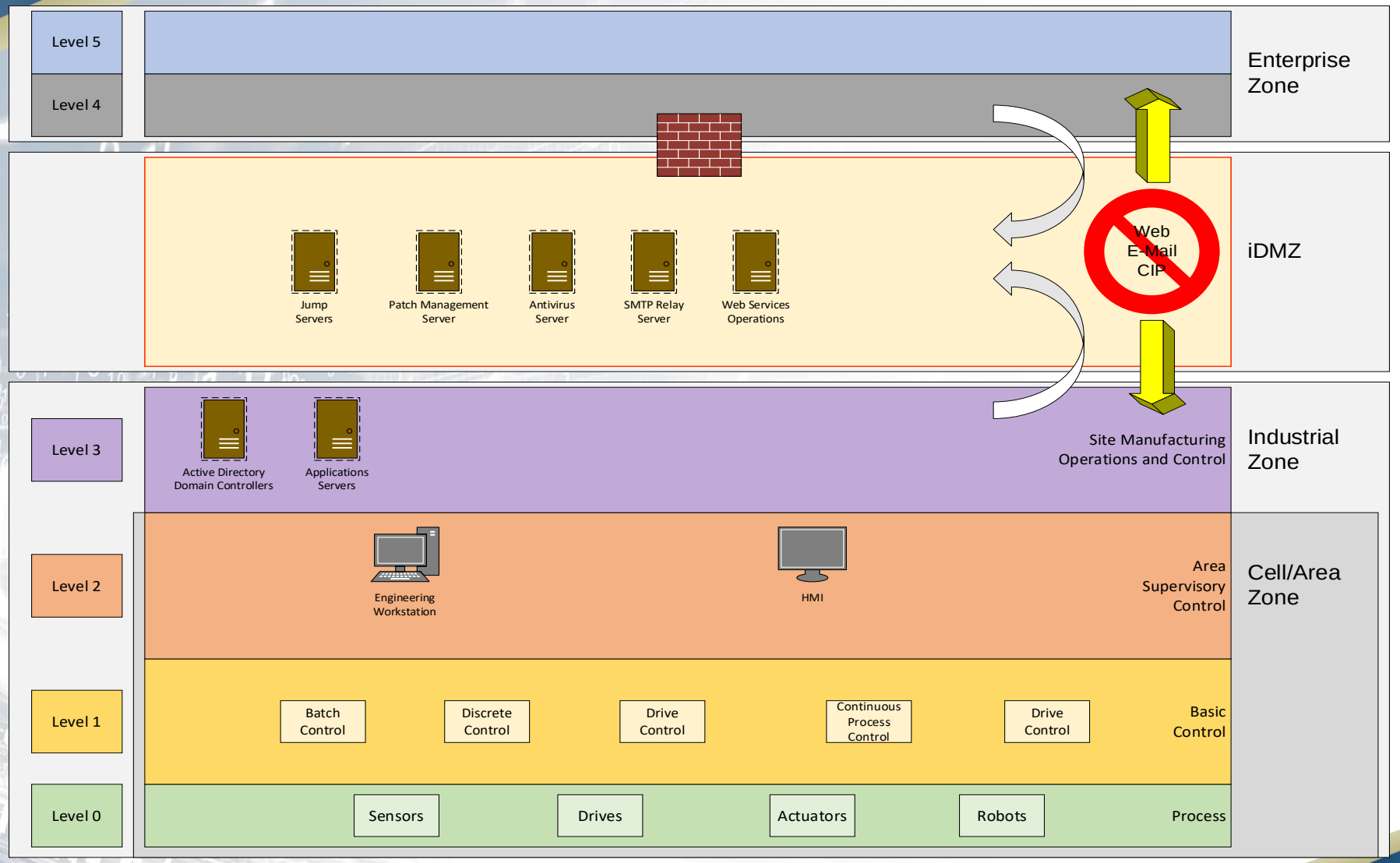
"Purdue 95" Reference Model ISA 95.01



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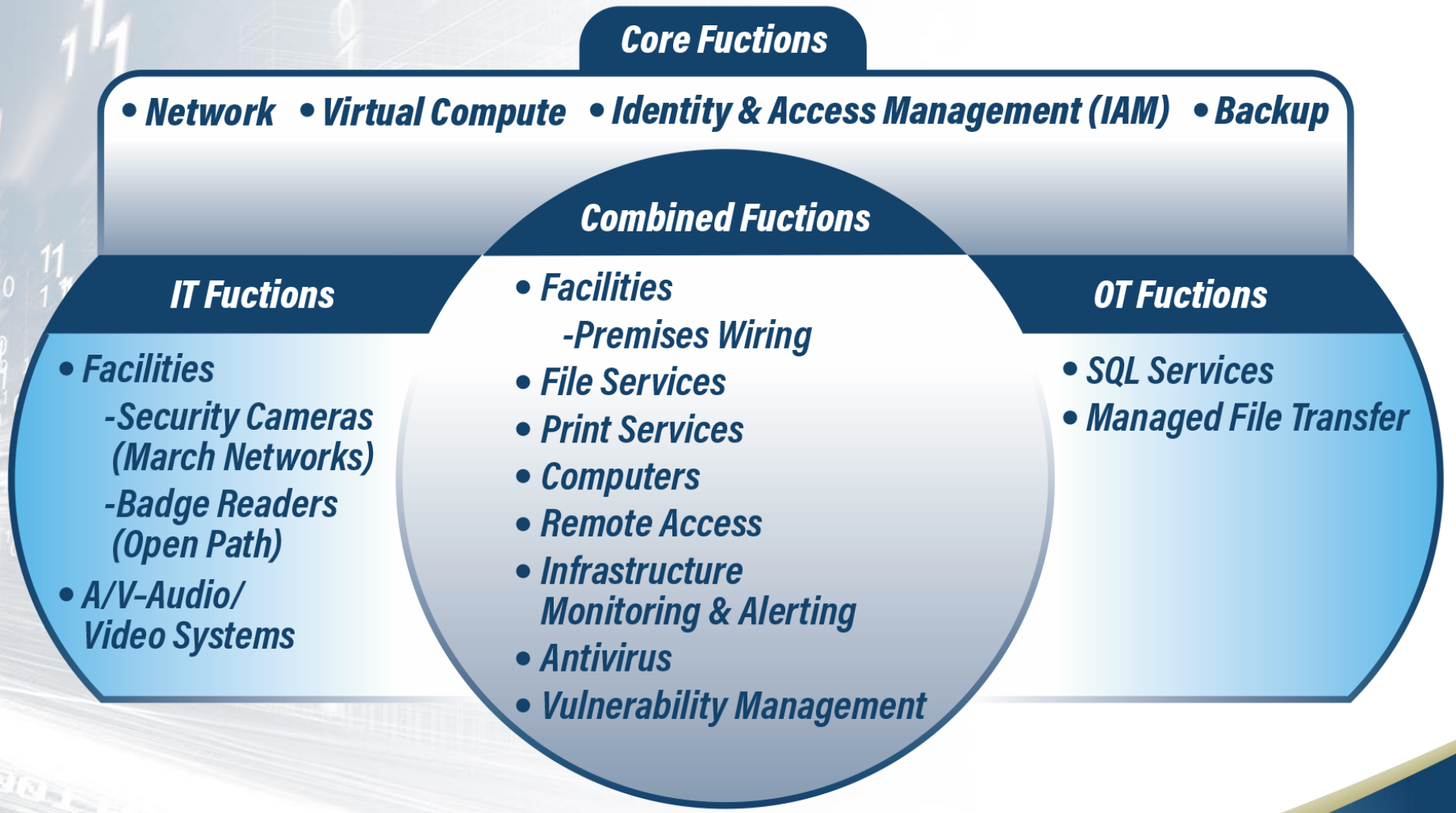
IFN+ : OT & IT Better Together!

- **Coordinated Design = Lower CAPEX**
- **Integrated Managed Services = Lower OPEX**



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We Add Value By Engineering Superior Solutions Through Collaboration & Innovation

We are one of the largest and well-established engineering, system integration, and process automation providers in North America.

- **35+ Facilities Nationwide**
- **40+ Years of Experience**
- **450% Growth in 5 Years**
- **600+ Employees**
- **10K+ Completed Projects**

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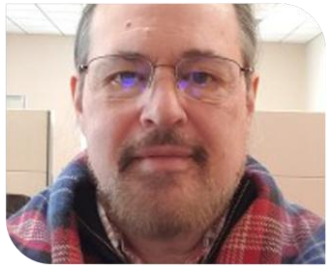
Meet Your IFN Team

We provide best-practices in OT for industrial automation & control systems, serving clients through our 40 nationwide offices.

Dustin Fischer
Director, Corporate IT/OT
Dustin.fischer@wmeng.com



Mark Riehm
IFN Product Manager
mark.riehm@wmeng.com

- **Nationwide Network, Systems & Cybersecurity Engineers**
- **OT Managed Services Team**

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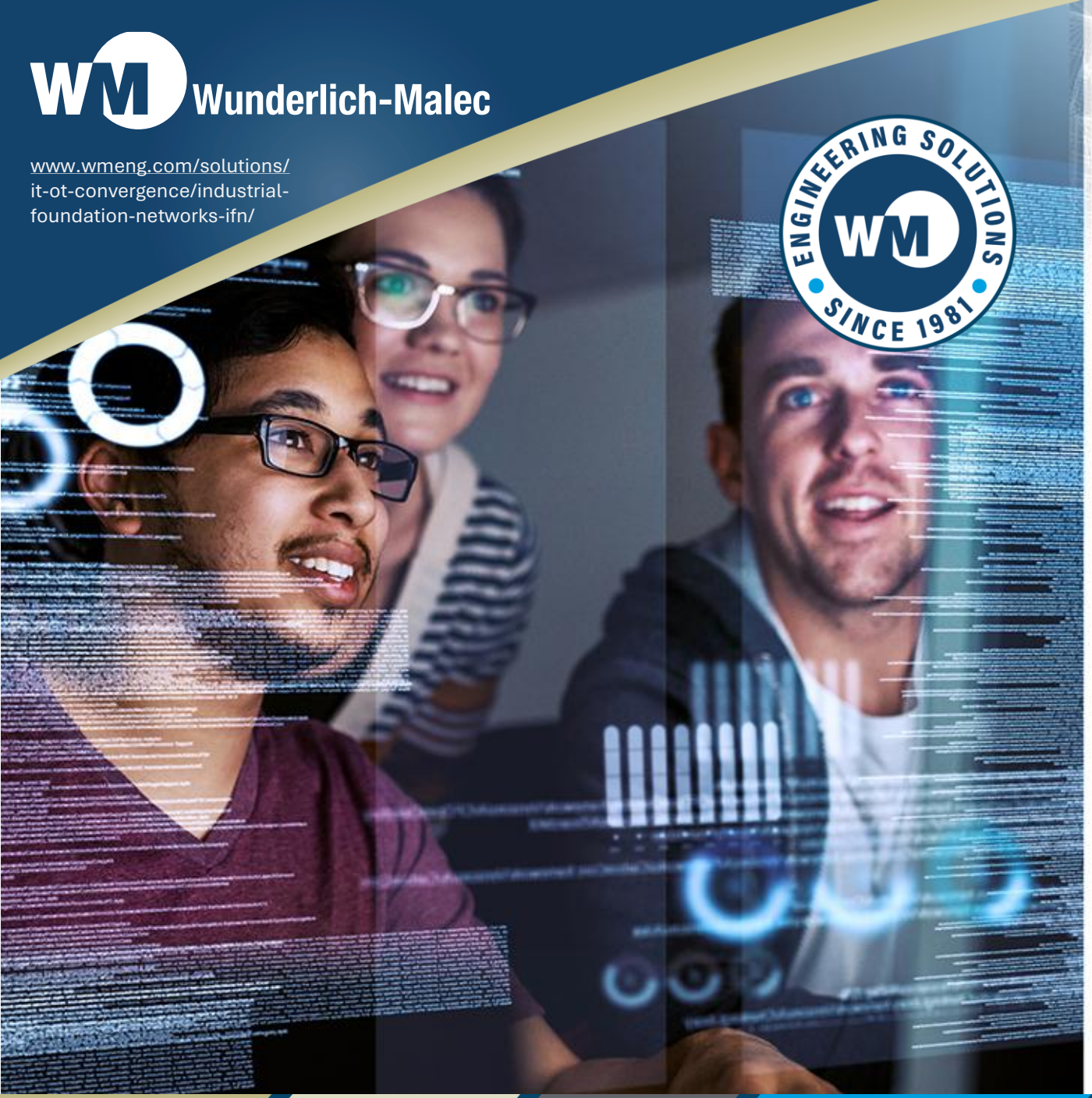

Our Portfolio Of IFN Services To Help Meet Your Needs

OT Infrastructure Gap Assessment

Evaluate existing OT Infrastructure against industry best practices for:

- **Essential Functionality**
- **Capacity and Growth**
- **Cybersecurity**
- **Access and Integrity**

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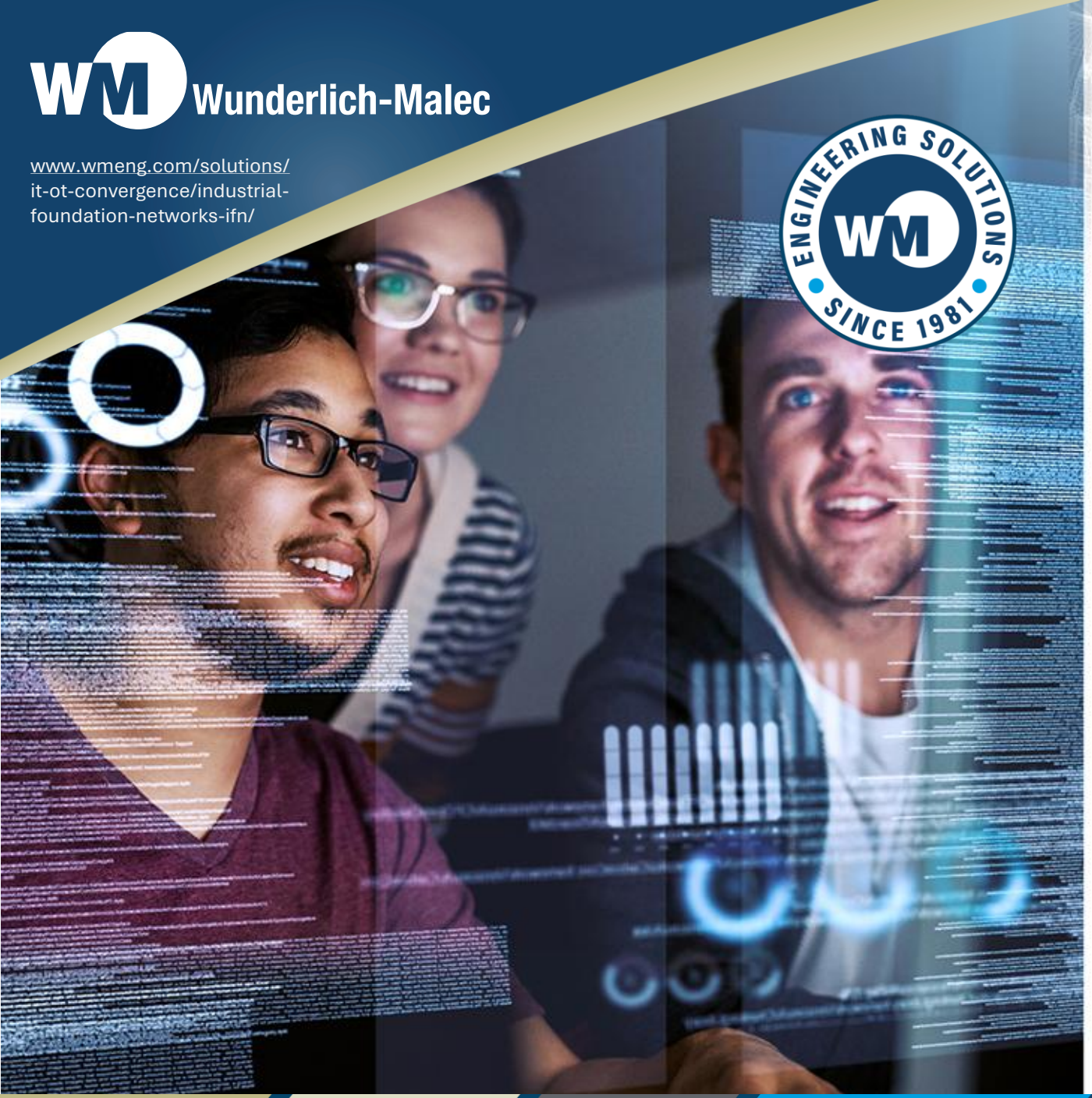

Our Portfolio Of IFN Services To Help Meet Your Needs

New IFN Or Upgrade Projects

Implement or Improve OT Infrastructure

- **Specify, Design, Build, & Test**
- **Implement & Qualify At Clients Location**
- **Provide Integrated IT & OT Infrastructure In One Platform**

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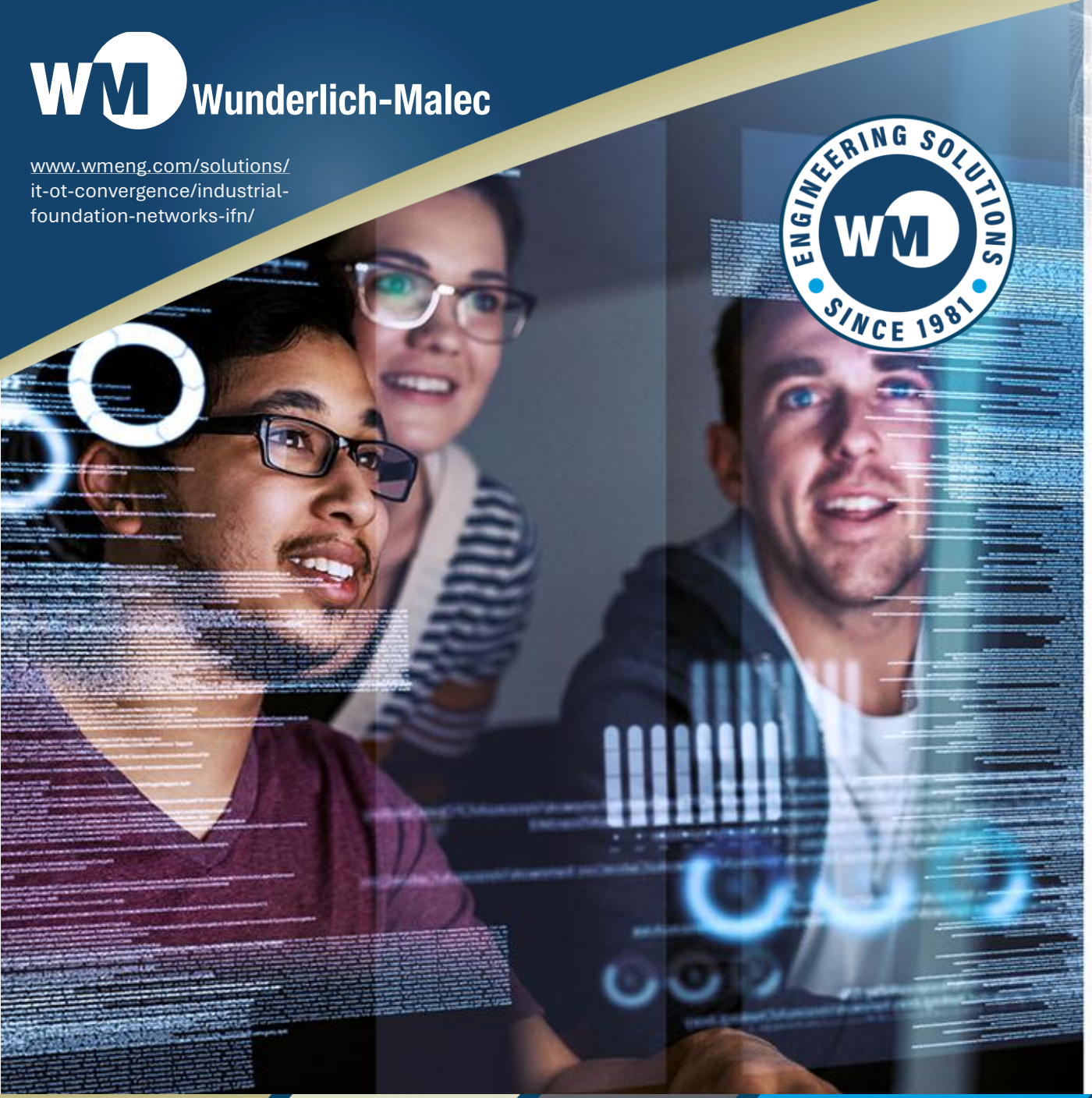

Our Portfolio Of IFN Services To Help Meet Your Needs

- *IFN Managed Services*

- Coordinate OT Functions With IT
- Administer & Maintain OT Infrastructure
- Includes 3 Tiers:
  - Help Desk
  - Admin & Support
  - Engineering Support
- Provide Seamless IT/OT Management

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Partner With Wunderlich-Malec's Industrial Foundation Network (IFN) Team To Give You A Better Night's Sleep!

Connect With Us Today!

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Phone: (952) 933-3222

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