
SECURITY CONVERGENCE:
COMBINING FORCES
BRIDGING THE DIGITAL AND THE PHYSICAL
RSA Conference –2024.05.08

- **CEO, Ampyx Cyber**
- GCIP, CISA, CRISC, CISSP-ISSAP, SSCP, NSA-IAM, CVI, TCP, SCP
- US Coordinator and Professor, Centro de Ciberseguridad Industrial (CCI; Madrid)
- Instructor, Cyber Information Security Leader (CISL; Copenhagen)
- Former Principal Investigator, US DOE National Electric Sector Cybersecurity Organization
- EnergySec Founder, Former CEO, Director, Instructor, and President Emeritus
- Former utility staff (telecommunications, water & electric)
- Former SANS ISC456 Instructor: Essentials for NERC Critical Infrastructure Protection
- One of the original architects of NERC CIP standards for North America
- First NERC CIP auditor in the US
- NERC SCWG, SITES, and SPIDERWG contributor
- Speaker/contributor to multiple FERC Technical Committees, NOPRs and Orders
- Contributing author for DHS CISA Cross-Sector Cyber Performance Goals (CPGs)
- Contributing author for NARUC/DOE Cybersecurity Baselines for Electric Distribution
- Cybersecurity Advisory Team for State Solar, NARUC/NASEO
- National Telecommunications and Information Administration (NTIA) and Idaho National Lab (INL) Software Bill of Materials (SBOM) Energy POC Stakeholders
- DOE Solar Energy Technology Office (SETO) and National Renewable Energy Lab (NREL) Industry Advisory Board (IAB) for the Securing Solar for the Grid (S2G)
- Advisor to multiple industrial hardware and software vendors, boards of directors, government agencies around the world

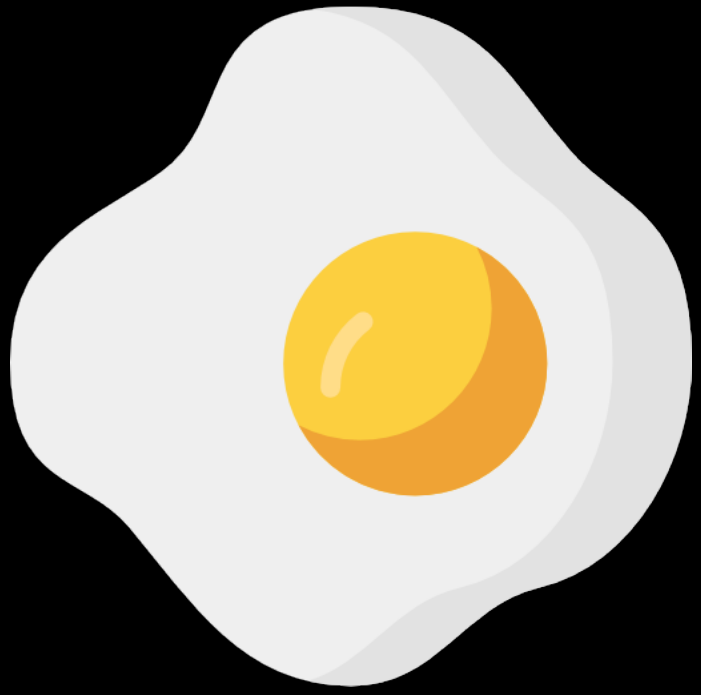
AMPYX CYBER

- Boutique international industrial cybersecurity firm
  - Cyber and physical security services
  - Regulation, standards, frameworks
  - Architecture, integration, orchestration
  - Program development
  - Solver of hard security/regulatory problems
- Offices:
  - Portland, USA
  - Tallinn, Estonia
- IICS Alliance member
- We keep you ahead of your adversaries – *and your auditors*

CHICKEN OR EGG?

- You don’t get cybersecurity without physical security
- You don’t get physical security without cybersecurity

- These two functions were different in the past. This is no longer the case
- Go watch any heist movie



PHYSICAL THREATS TODAY

- Very few organizations are truly local (think supply chain)
- Geopolitical tensions
- Active war zones
- Politics
- Disinformation and misinformation
- Terrorism, supremacy
- Religious/belief
- Domestic/relationship
- By the time it is physical, it is serious

EVERYTHING IS DIGITAL

- Vendors are only creating new digital components
- Analog equipment is going away
- Biometrics
  - Face, palm, fingerprint, gait, blood vessels, handwriting
- Cameras – *so many cameras…*
- Readers
  - Anti-spam, anti-replay, keyed read, clone detection, scramble pad
- Sensors
  - REX, temperature, light, motion, weight/force
- Locks, hasps, jams, guards, gates, guns…

PHYSICAL IS CYBER

- PACS Servers
- PACS Workstations
- Badge printers
- Badge readers
- Digital keys
- Gates
- Locks
- Facial recognition/biometrics
- Camera and data analytics

INNOVATION ALWAYS WINS

- Innovation, disruption and human nature
- Mobile everything (boundarylessness)
  - Instant access to anything from any device from anywhere
- Cloud
  - If everything is digital, everything creates a data stream that needs to go somewhere for use, short/long term storage
  - Someone else will always be better at analytics
- Vanishing technology
  - Embedded cyber/physical security technology
  - Size will continue to get smaller
  - May eventually become invisible to the eye

1985 CALLED

- Who you hire matters most
  - Think forward not backward
- CISO, CPSO, CSO
- CFO, COO, CRO, OGC
- Facilities
- Property management
- ”Other duties as assigned”
- Budget benefits
  - Technology integration
  - SOC training/staffing
  - Network connectivity

DATA IS EVERYWHERE

- Converging physical and cyber security data is powerful
- Add in other operational data (e.g., OT/ICS) for more context
- Break down organizational silos to share
- Synthesize key data for full picture
- Do not forget to balance privacy
  - Not everyone is a threat
  - Insider threat programs can go too far
  - Be clear on all international regulations
  - Focus on the critical functions/personnel

INCIDENT RESPONSE BENEFITS

- Goal: enhanced incident response coordination
- Combined in a SOC or with clear communications paths
- Diversions, two-front, cross-domain intent
- Physical access vs. cyber access indicators
  - A situation in one should alert the other
- Dual-approach expertise with external law enforcement
- Respective “coverage” during active incidents
- Add in OT/ICS operational data for additional dimension

EXAMPLES OF CONVERGENCE

- Badge read compared with system login
- Critical location and critical commands
- License plate compared with badge read and login
- Badge read and geographic distance between two points
- ITSMF is good for PACS too; manage it like it's IT
- Cross-discipline threat sharing
- Holistic security approach for entire organization
- Enhanced safety in OT/ICS environments

SUMMARY

- Physical and cyber security threats, technologies and practices are converging – more each day
- Physical security practices (and mindsets) need to change to keep pace with innovation and convergence
- Infosec, OT-sec, and IT can assist with successful approaches
- Organizations should consider how to maximize the benefit of holistic convergence
  - Data analysis
  - Threat management
  - Incident response

CONTACT ME

Patrick C. Miller – CEO, Ampyx Cyber

- Email pmiller@ampyxcyber.com
- LinkedIn https://www.linkedin.com/in/millerpatrickc/
- Mastodon @patrickcmiller@infosec.exchange
- Threads, BlueSky, Twitter @patrickcmiller
- Phone +15032721414