

IoT-Vigilance

Vigilance on IT and OT asset security and resilience

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Objectives

Asset Management

- Inventory ICT infrastructure
- Analyze interdependencies

Vulnerability Management

- Identify vulnerabilities
- Mitigate risks

Needs and Motivations

Infrastructure Knowledge

- Document ICT assets

OT Security Extension

- Include OT devices in analysis

Proactive Security

- Early vulnerability detection
- Mitigation strategies

Emerging Trends and Solutions

IT/OT Convergence

- **Solution:** Unified platform for IT and OT

NIS 2 Directive Compliance

- **Solution:** Stringent security measures

Automation and AI

- **Solution:** Machine Learning for automated detection

IoT Device Security

- **Solution:** Security analysis for IoT devices

Increase in OT Attacks

- **Solution:** Automated Penetration Testing for OT

Fuzzing Technologies

- **Solution:** Identify vulnerabilities in OT protocols

Implementation Challenges

Framework Complexity

- Navigating complex frameworks

IT/OT Convergence

- Managing different protocols

Legacy Systems Integration

- Compatibility issues

Penetration Testing for OT

- Ensuring safety and reliability

Resource Constraints

- Budget limitations
- Skilled workforce shortage

Fuzzing and Malformed Input Testing

- Inventory ICT infrastructure
- Analyze interdependencies

Needs and Motivations

Integration of IT and OT Security

- Comprehensive IT/OT solution

Automated Penetration Testing for OT

- Addresses market gap

Legacy Systems Integration

- Compatibility issues

Conclusion

- Unified tool for ICT security
- Addresses IT and OT needs
- Leverages emerging trends
- Effective cybersecurity solution

The IoT-Vigilance Solution

Asset Management

Inventory Smart Meters
Analyze Dependencies

Vulnerability Assessment

Automated Scanning
Manual Analysis

Risk Mitigation

Patch Management
Configuration Updates

Penetration Testing

Fuzzing Techniques
Malformed Input Testing

Continuous Monitoring

Real-time Alerts
Periodic Reports

Asset & Vulnerability Management Software Frontend

Interface TCP/IP

OT BOX

Protocols (DLMS)

SM

BASED ON REST API

- Starts, pauses, and stops scanning
- Identifies the object to be scanned (asset)
- Receives from the proxy and historizes the data from the scan
- Shows the output to the user

REST API BASED API

- Translates data from REST API to DLMS and vice versa

- It performs tests by "sending to" and "receiving data from the" OT device

- It performs tests by "sending to" and "receiving data from the" OT device

STAGE 1 ARCHITECTURE:

The flow allows you to run preset tests and historize the commands executed in testing and the raw responses received

STAGE 2 (next step):

Add interpretation of received data to allow output to the user and add machine learning as a module to scan control and/or analysis of the results.