Cybersecurity challenges and risks of critical infrastructure

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Agenda

- Introduction to cybersecurity
- Most common risks in critical infrastructure
- Key takeaways

Have you heard of

LATEST ATTACKS

Picanol

ASCO

Antwerp

TVH

Defense ministry (Log4j, dec 2021)

Belgacom

Le soir

BPOST

Belgian new fruit Wharf (Sea Invest) feb 2022

City of Antwerp (dec 2022)

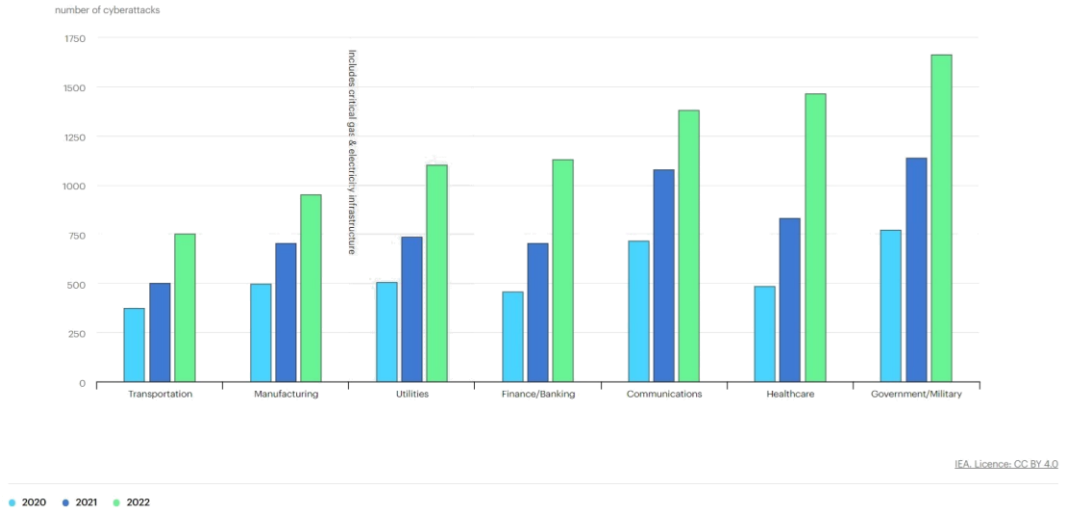
Belnet (May 2022)

Vivalia hospital (May 2022)

Hospital of Namur (June 2023)

Ministry of defense – huawei wifi routers (July 2022)

ChWapi hospital (Sept 2022)



Know who you're up to

DARK WEB

What is at stake?

ATTACKERS VS DEFENDERS

Attacker

- Needs **only one** hole to get in
- Needs to do a lot of research
- Needs to do a lot of steps
- Organized pros

Defender

- Difficult to defend **all** the assets
- Only need to **detect** one step
- Know your network/assets best
- **ICT, engineers, third party, operators**

"It is not a question of IF but WHEN you're being hacked."

Per Christensen
Cyber Security Architect, Prevas
IEC ACSEC Member

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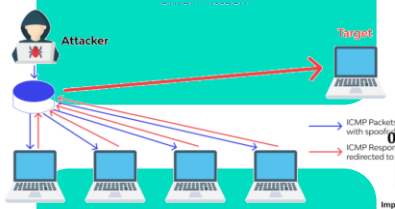
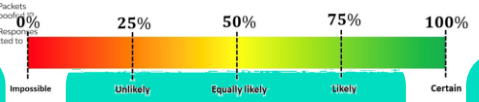
Risks, threats, attacks, assets

DEFINITIONS

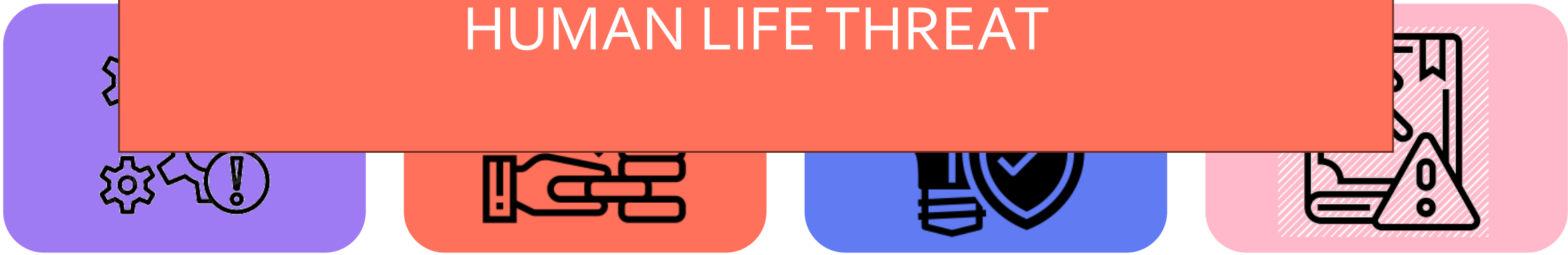
Threat	Vulnerability	Attack	Likelibility	Asset	Risk
			Certain, Likely, Unlikely, Impossible, Equally likely events 		
potential to harm	weakness that can be used to harm	threat realization scenario	chance for threat to happen	what can be damaged	how much you loose when this happens


VULNERABILITY
RISK
THREAT
ASSET

What are the risks – for critical infrastructure?

GIVE EXAMPLES

HUMAN LIFE THREAT



Operational risks

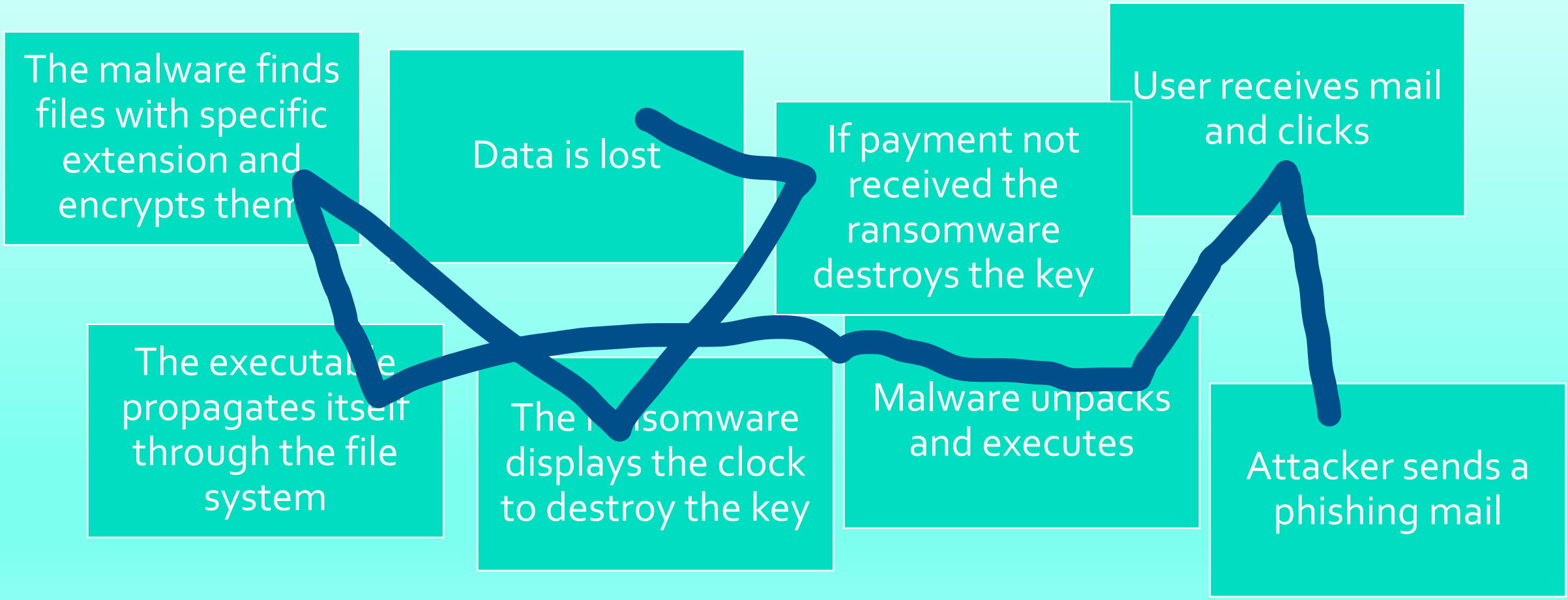
Financial risks for compromised personal data (PII)

Financial risks for compromised intellectual property

Regulatory issues

Example of a kill chain – order the steps

RANSOMWARE ATTACK



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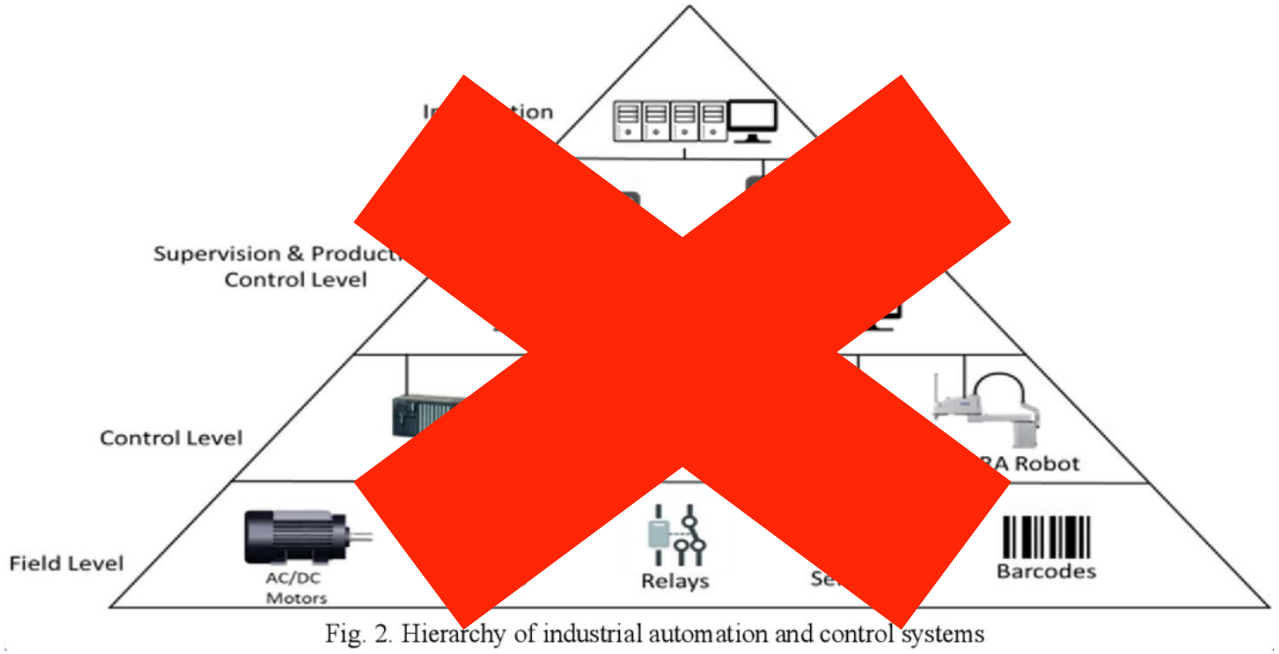
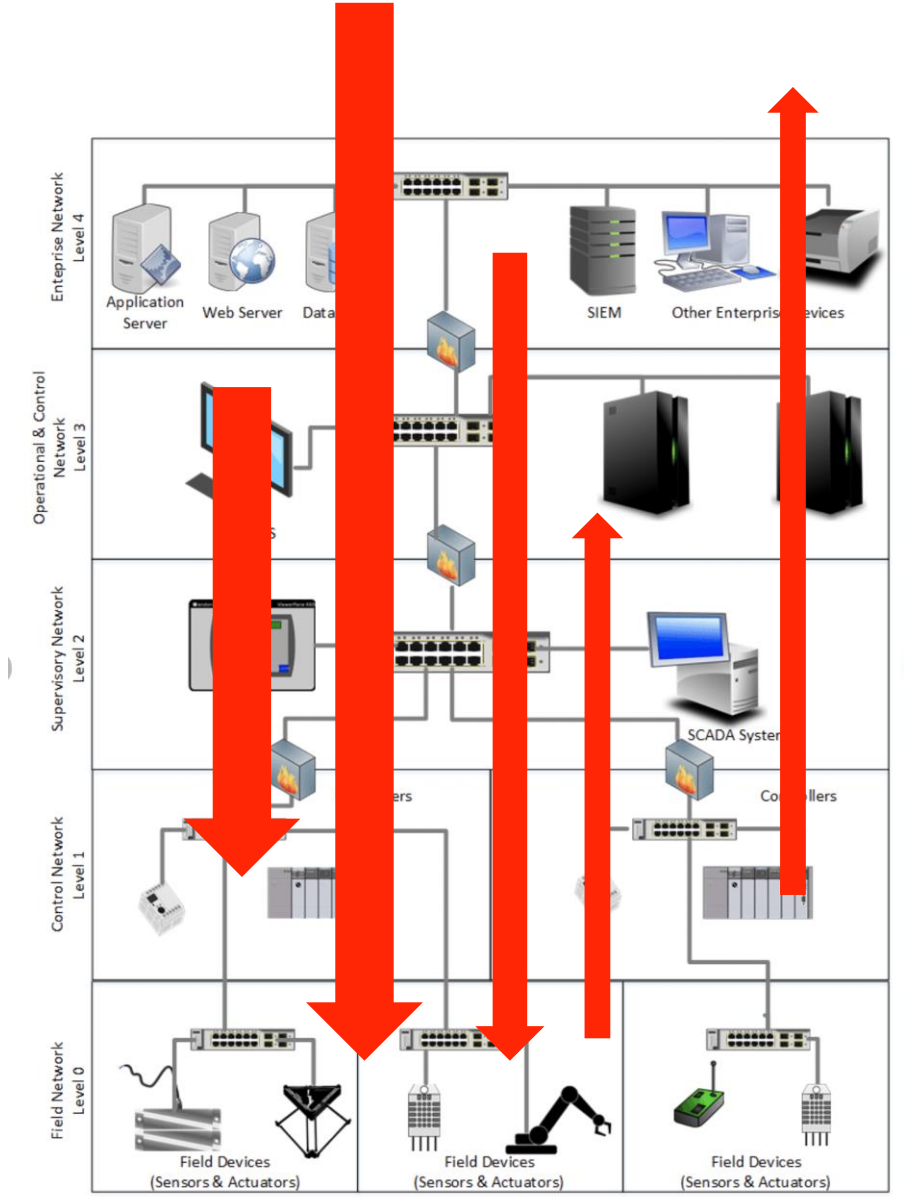


Fig. 2. Hierarchy of industrial automation and control systems



Risks related to connectivity

- REMOTE MAINTENANCE AND TRUSTED RELATIONSHIPS
- IT AND OT INTEGRATION
- NETWORK SECURITY GAPS, ABSENCE OF MONITORING
- ACCESS PRIVILEGE MISUSE

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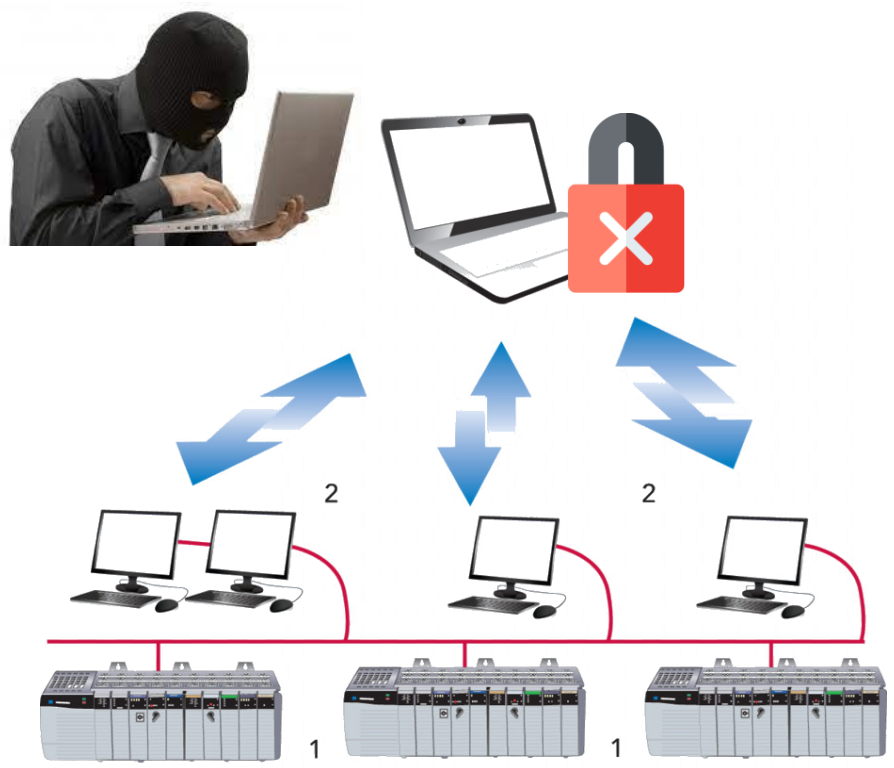
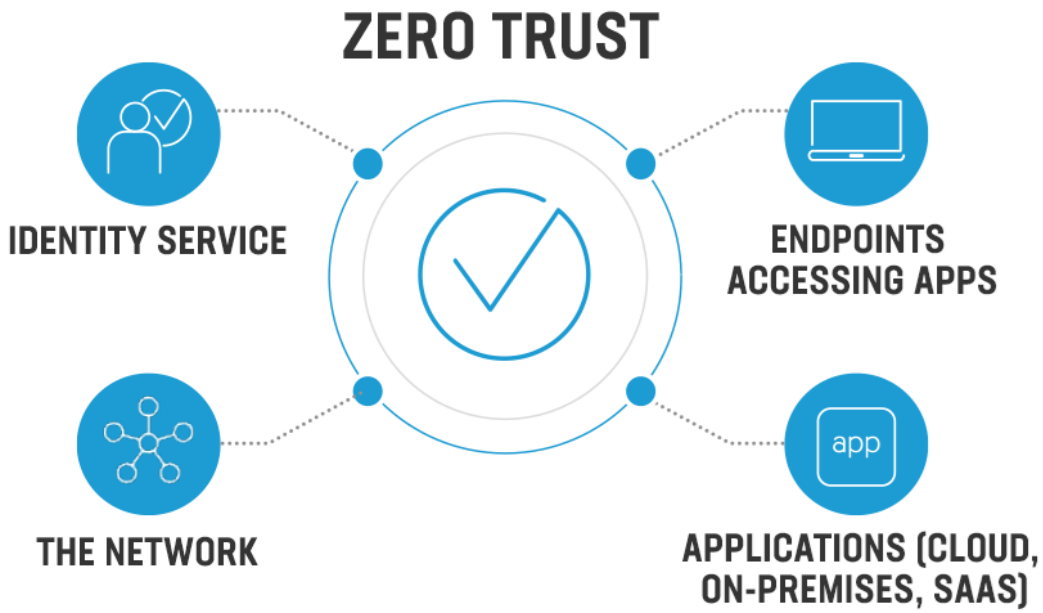
Why critical infrastructures need to look at network security

GROWING CONNECTIVITY

- Networks grow more complex
- Enterprises rely more on their networks and data to conduct business
- Difficult to manage
- Threat actors create new attack methods
- Security is everyone`s responsibility
- Every user is a potential vulnerability



From Purdue -> to zero trust



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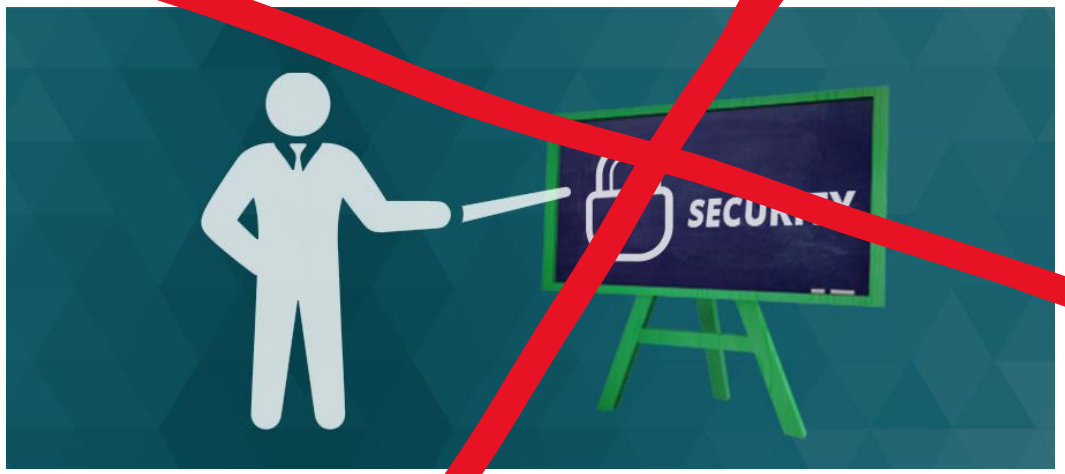

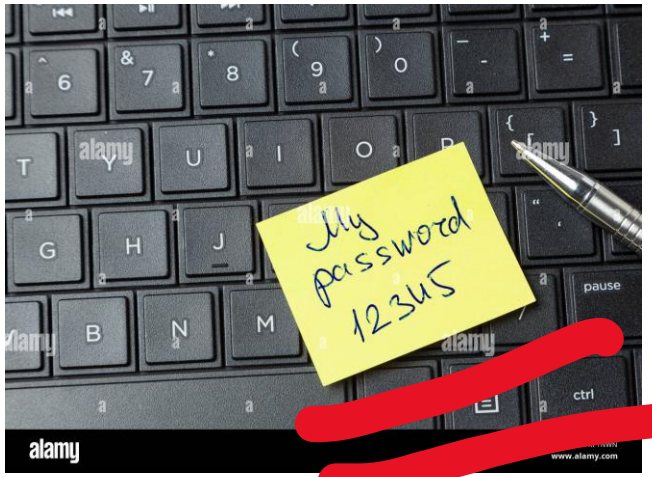

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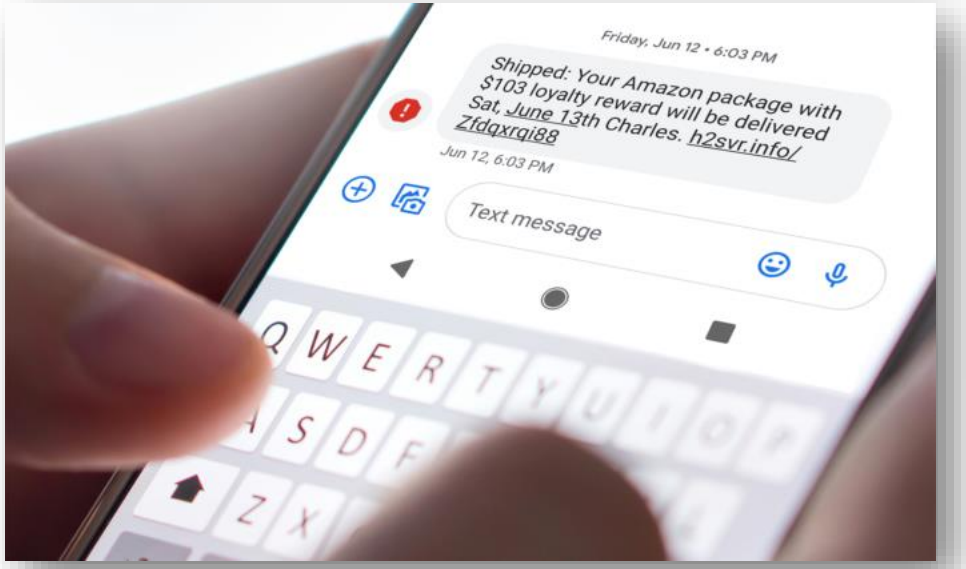

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What if I am breached?

- CHECK THE INSURANCE AND VERIFY THE INCIDENT RESPONSE PLAN
- KNOW WHO DOES WHAT AND MAKE SURE OPERATORS KNOW
- CEOS – PERSONAL RESPONSIBILITY (NIS2)
- CHECK THE CONTRACT WITH IT PARTNER, VENDOR
- BASIC RULE – NOTICE ANY ANOMALY AND REPORT ON TIME

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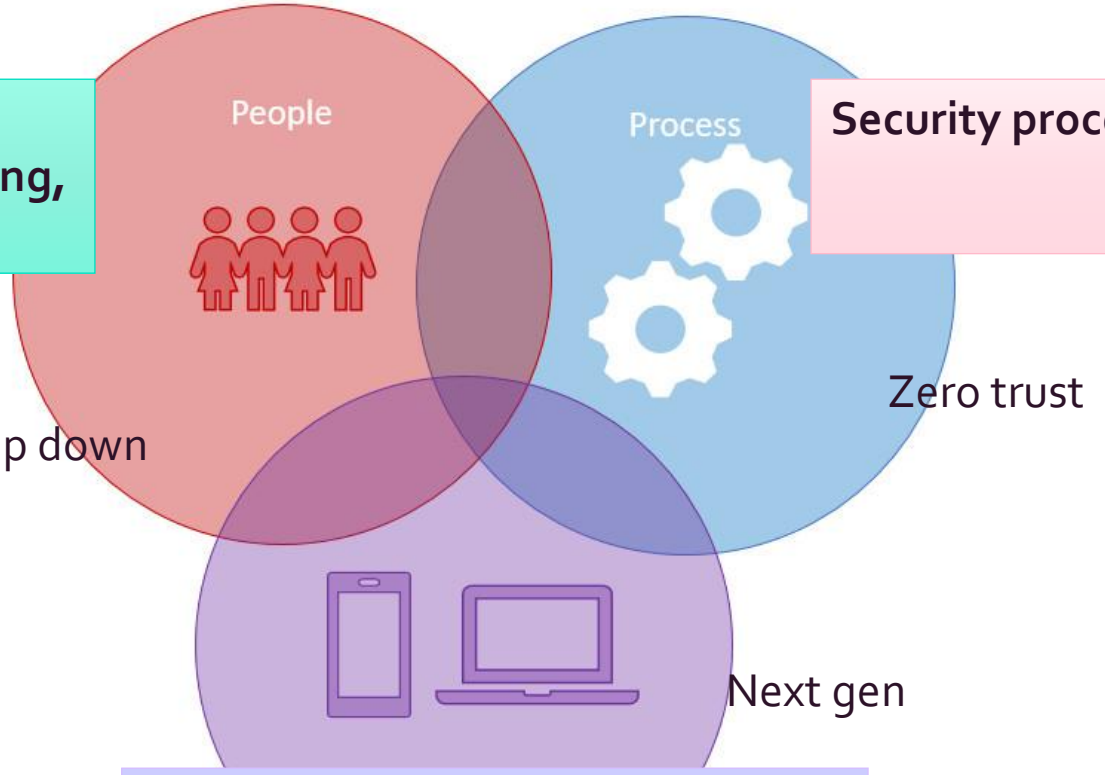
Cybersecurity culture to critical infrastructure

Positive cybersecurity culture, learning, dialogue



Security procedures/policies

Technological frameworks/solutions

Risks related to cybersecurity culture and awareness

- ABSENCE OF CYBERSECURITY TRAINING
- NOT PREPARED TO INCIDENT RESPONSE AND RECOVERY
- SOCIAL ENGINEERING - PHISHING & SPEAR PHISHING
- CREDENTIAL STEALING/REUSING , PASSWORD SHARING

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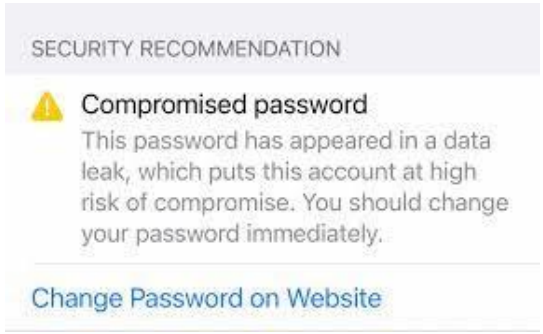
What is this about?



Risks related to data protection

- INSECURE DATA EXCHANGE AND STORAGE
- PRIVACY VIOLATION

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Main takeaways

- Major cybersecurity risks are related to connectivity, culture and data security.
- What are the challenges in your company ? -> answer our questionnaire
- How Sirris and Howest can help -> COOCK+ project
- Cybersecurity training for critical infrastructures (subsidized by VLAIO): January 2024.

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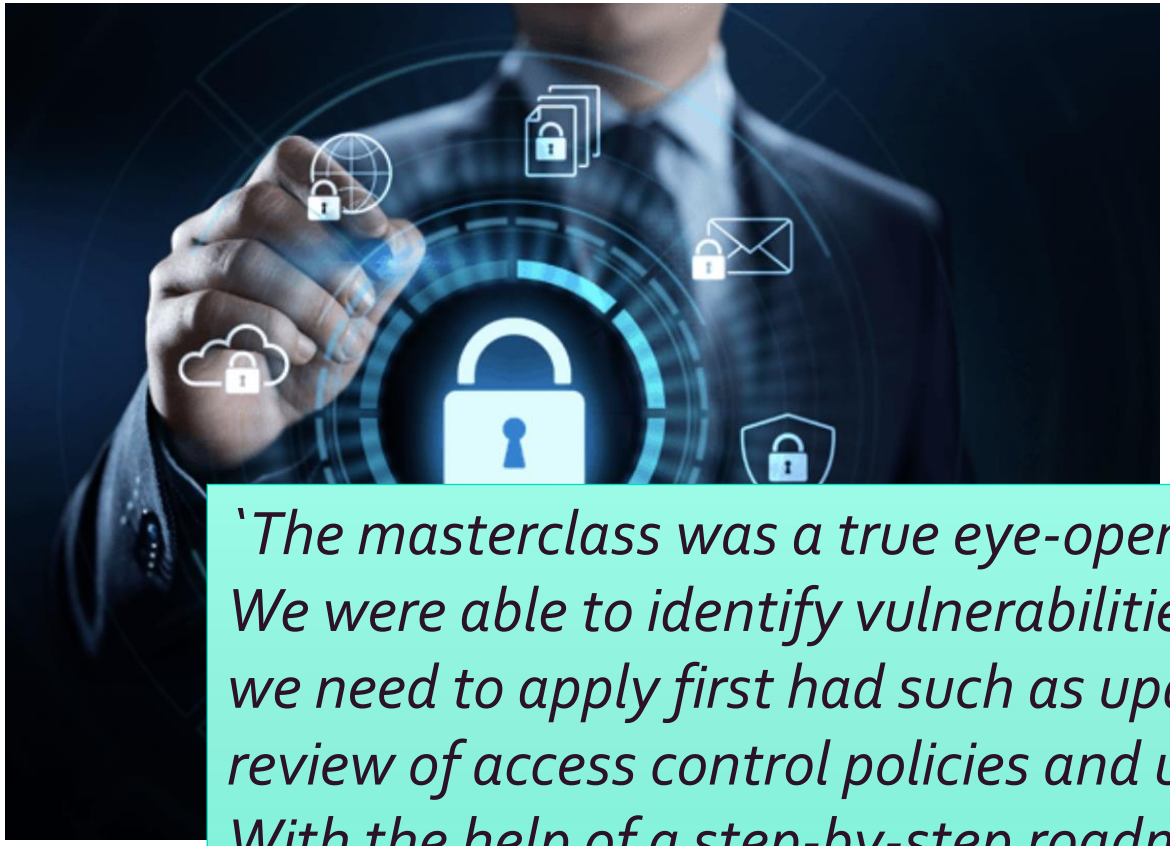
Bootcamp Cybersecurity – Energy sector, harsh environments, and utilities



- in-depth 8-week learning journey for the critical infrastructures
- 7 masterclass modules + live Q&A, lessons learned, homework discussions, expert advice, and micro-coaching.
- most critical topics, which are usually not covered by the standard cybersecurity measures and require special attention due to rapid digitalization.

`The masterclass was a true eye-opener for us.
We were able to identify vulnerabilities in our network and the actions we need to apply first had such as updates, network segmentation, review of access control policies and user accounts.
With the help of a step-by-step roadmap we will be able make our cybersecurity posture more resilient.`

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Your input

ANSWER 10 QUESTIONS TO KNOW YOUR NEEDS

Short link: https://su.vc/rnaxxkos

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