

**ANIE**  
AUTOMAZIONE



# **Cyber Security**

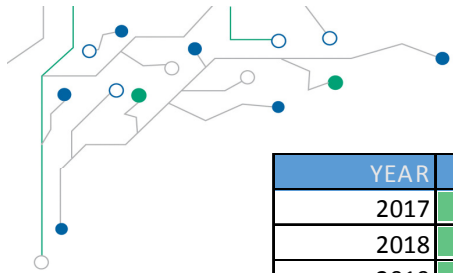
*V1\_pdf version*

***Massimiliano Spano***

*Domain Expert Mechatronics&Drives*

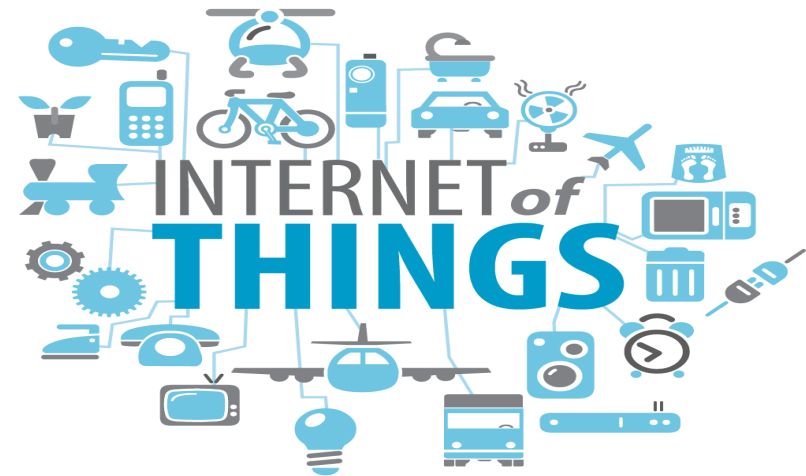


**Rockwell  
Automation**

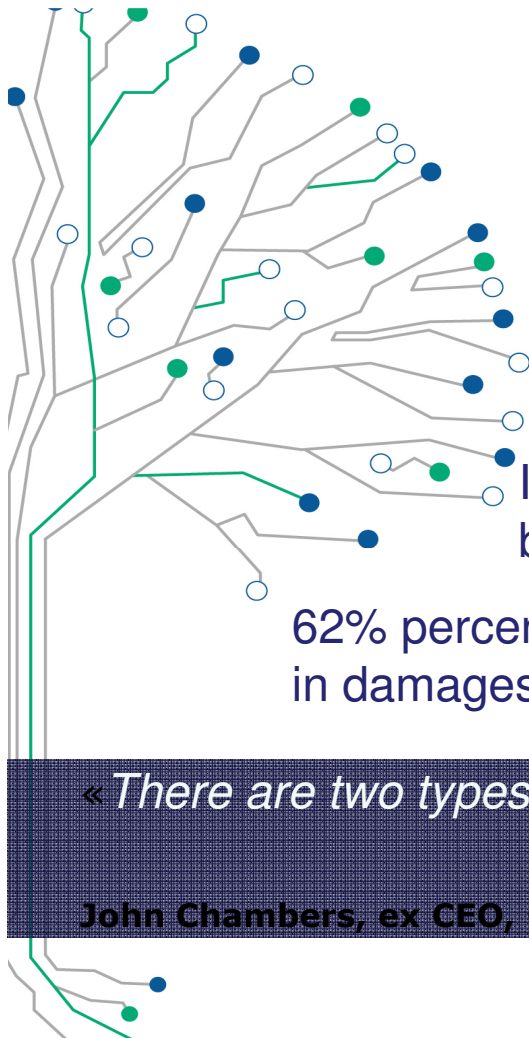


YEAR	MARKET SIZE IN BILLION USD
2017	109
2018	164
2019	212
2020	248
2021	418
2022	594
2023	800
2024	1079
2025	1612

YEAR	MALWARE IN MILLIONS
2013	165,81
2014	308,96
2015	452,93
2016	580,41
2017	702,06
2018	812,67



**The transition from closed networks to the Internet is accelerating, raising a growing security alert.**



92% of the Italian companies have to admit they received a cyber attack during the last year.

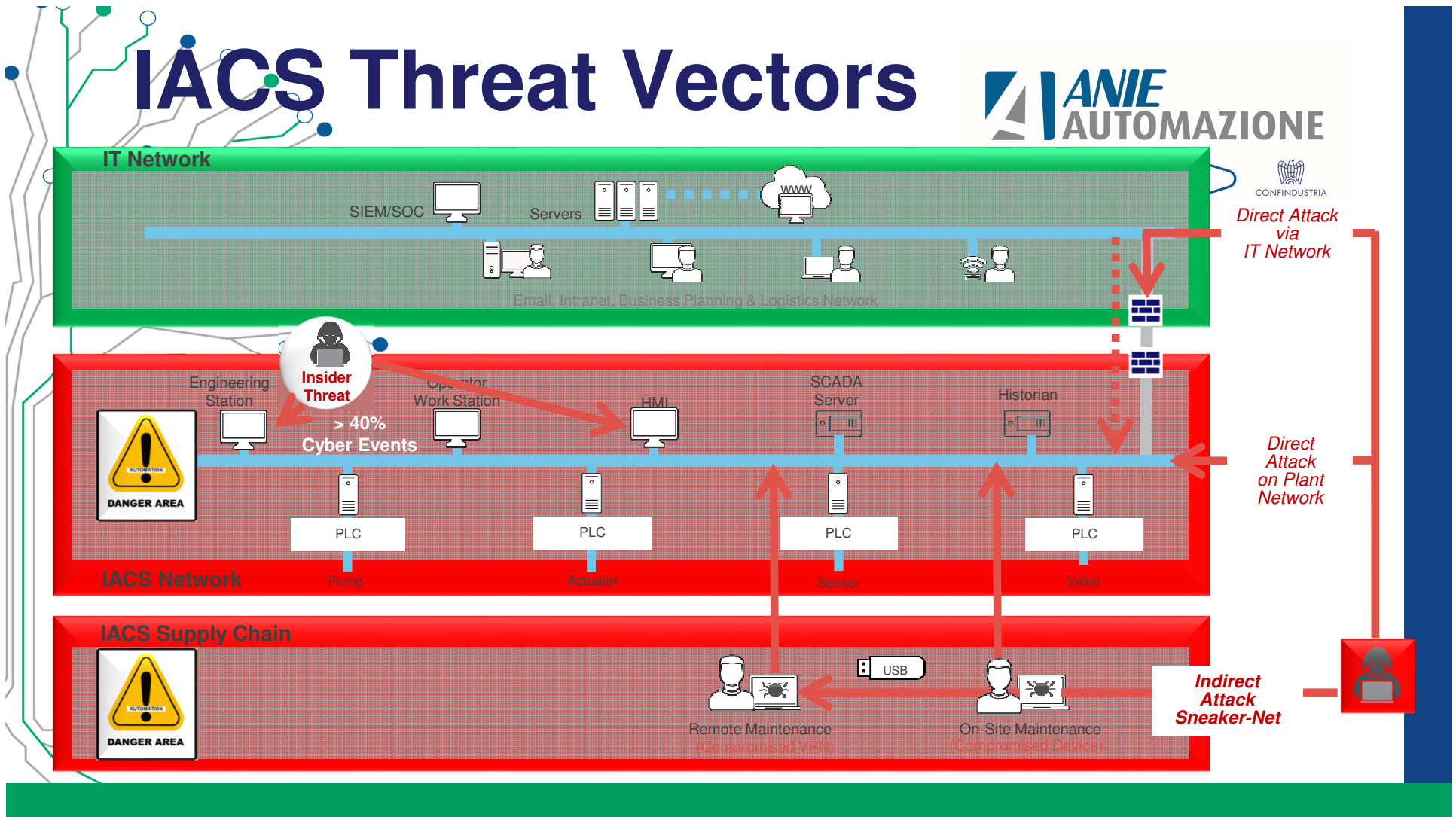
It is estimated that Italy suffered damages in 2017 of 10 billion euros as a result of cybercriminal activities

62% percent of the attacks in Italy resulted in damages of more than 80,000 euros.

*« There are two types of companies: those who have been hacked, and those who don't yet know they have been hacked. »*

**John Chambers, ex CEO, Cisco**

# IACS Threat Vectors



*Direct Attack via IT Network*

*Direct Attack on Plant Network*

*Indirect Attack Sneaker-Net*

IT Network

SIEM/SOC

Servers

Email, Intranet, Business Planning & Logistics Network

**Insider Threat**

Engineering Station

Operator Work Station

HMI

SCADA Server

Historian

> 40% Cyber Events

DANGER AREA

PLC

PLC

PLC

PLC

IACS Network

Pump

Actuator

Sensor

Valve

IACS Supply Chain

DANGER AREA

Remote Maintenance  
(Compromised VPN)

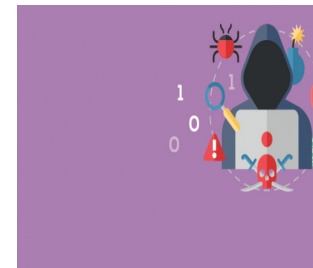
On-Site Maintenance  
(Compromised Device)

USB



# What is Cybersecurity?

**Does everybody have a Personal Computer Right?  
Especially in the Companies Right?**



**Do you wanna see how easily gain access to sensistive information?**





Many peoples and Companies have known this for years...

You never do this...Than...The Issue is Fixed?

Absolutly not... You have to think about how the Hackers «Evolve» in their trade craft...

Here a simple example...

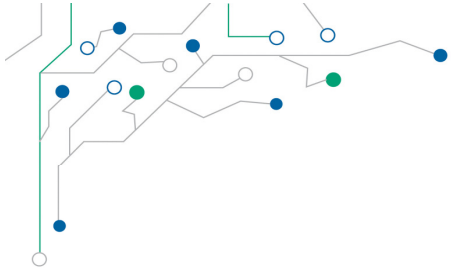


Employ or Manager needs a new smartphone



The Hacker known this needed by a dedicated work he's doing from days

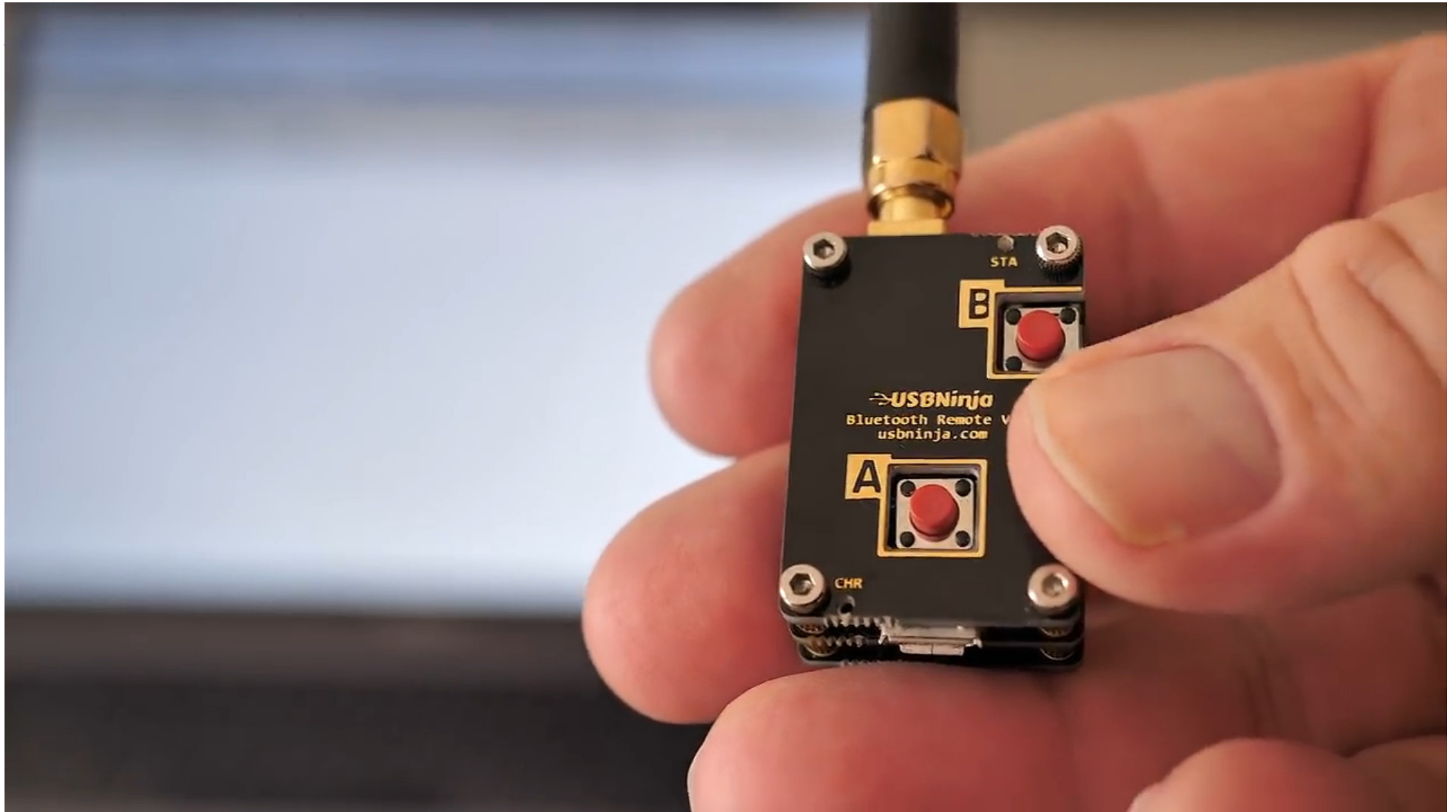
&...He prepare a special package, for them.. with the new Phone...

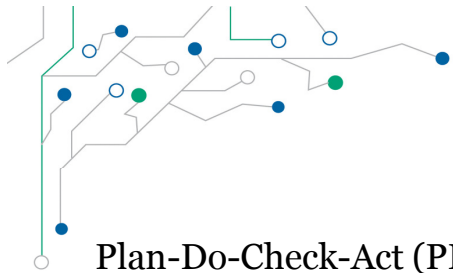


Plugged in for a normal smartphone recharge...







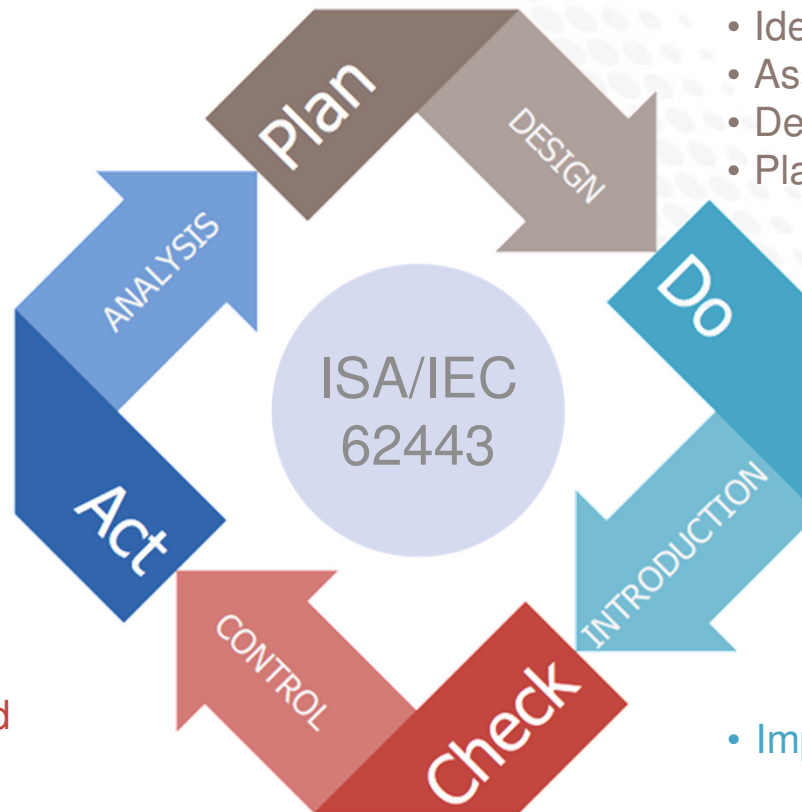


Plan-Do-Check-Act (PDCA)

- Continuous improvement

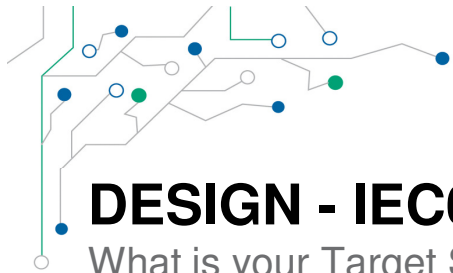
- Monitoring and testing
- Audit

# Methodology



- Identify risk
- Assessing risks
- Derive measurements
- Plan your deployment

- Implementing measures



## DESIGN - IEC62443 3-3 Where Are You Today?

What is your Target Security Level?



Protect Against **Intentional Unauthorized Access Using Sophisticated Means with Extend Resources**, IACS specific Skills & High Motivation – **Nation-state**  
Security Level 4



Protect Against Intentional Unauthorized Access Using **Sophisticated Skills** with Moderate Resources, IACS specific skills & Moderate Motivation – **Cyber Terrorism**  
Security Level 3



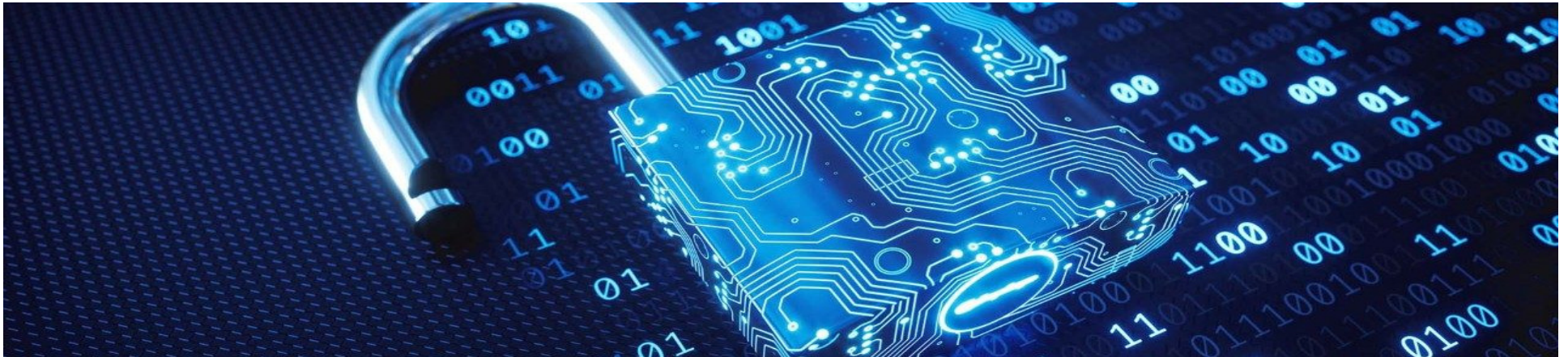
Protect Against Intentional Unauthorized Access Using **Simple Means** with Low Resources, Generic Skills, & Low Motivation – **Cyber Crime, Hackers**  
Security Level 2



Protect Against **Casual or Incidental** Unauthorized Access – **Employee Error**  
Security Level 1

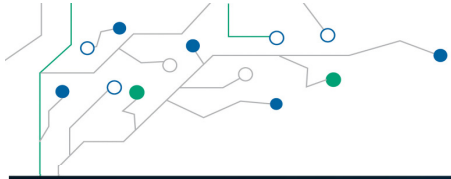


## Cybersecurity standards for IACS



Cybersecurity standards provide:

- Common **language** and **terminology** in the industrial sector
- A standardized **methodology**
- Guidance on how to answer questions like:
  - What is my **current** risk?
  - What would be a **more acceptable** level of risk for my company?
  - How can I get to this **more acceptable** level?



The Cyber Security  
**THANK YOU**  
it affects all of US



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