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INDUSTRIAL OT SECURITY NELL'ERA 4.0

Evoluzione degli attacchi informatici contro gli impianti industriali.

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HOW DO IT AND OT CYBER SECURITY DIFFER

(PRACTICAL WAY)

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OPERATION TECHNOLOGY (OT)	*vs*	INFORMATION TECHNOLOGY (IT)
OT is hardware and software that detects or causes a change through the direct monitoring and control of industrial equipment, assets, processes, and events.		IT covers the entire spectrum of technologies for information processing, including software, hardware, communications technologies, and related services.
Specific equipment designed to operate in hostile environments *(vibrations, water, hot, cold…)*		General purpose equipment (PCs, workstations)
Operating Systems and software designed for a precise purpose (simple features)		General purpose Operating Systems and software *(Windows, Android, IE, Chrome, MS Outlook)*
Leverages on legacy technologies and protocols, due to their long lifetime		Lifetime of few years (PCs can be substituted, software upgraded…)
An attack on OT could led to injury or loss of life, asset damage, or environmental impact.		An attack on IT could led to data theft

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OT | MACRO EVOLUZIONE TECNOLOGICA

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From anni ‘70….		fino al presente.
Dedicated systems and protocols	→	Usage of TCP/IP and open-source OS
Completely Isolated Networks	→	Interconnected Networks

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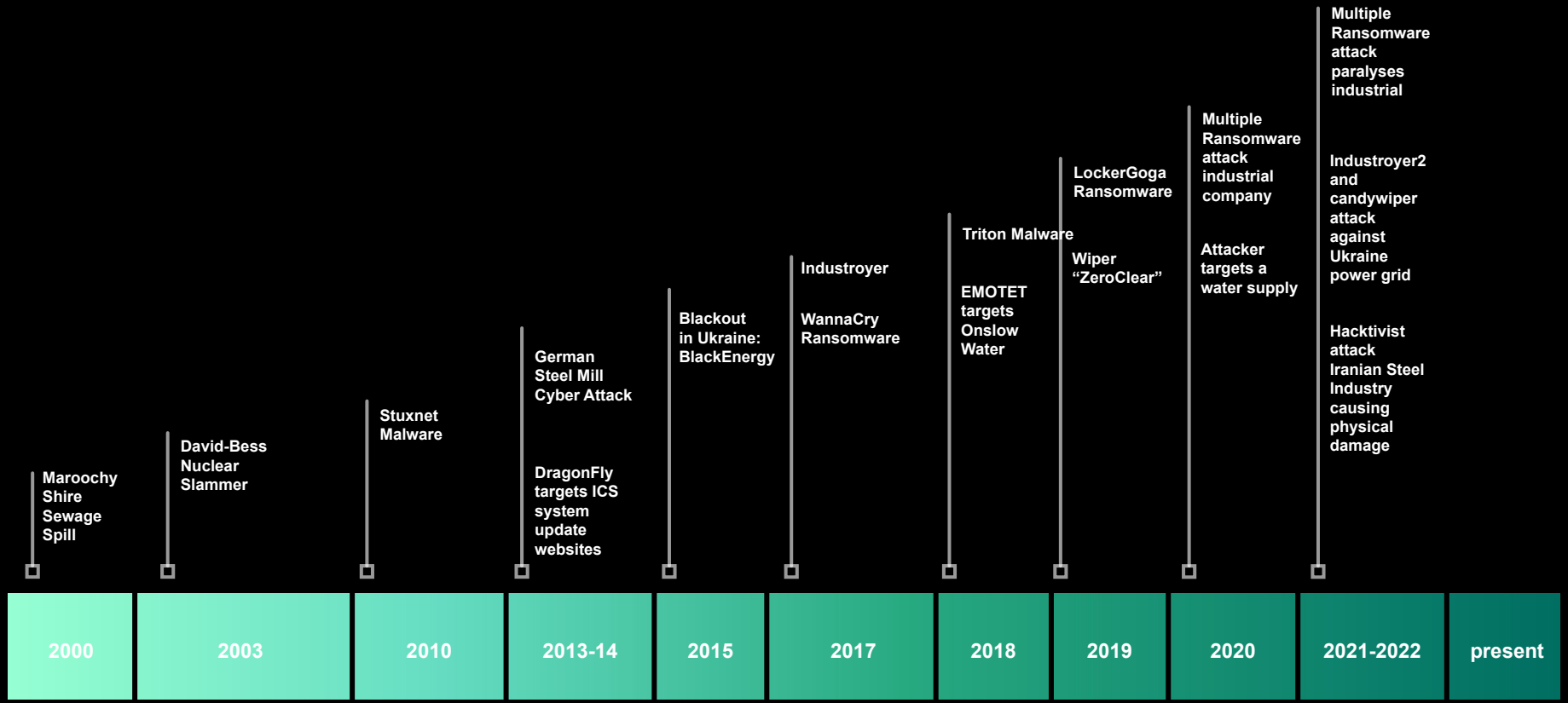

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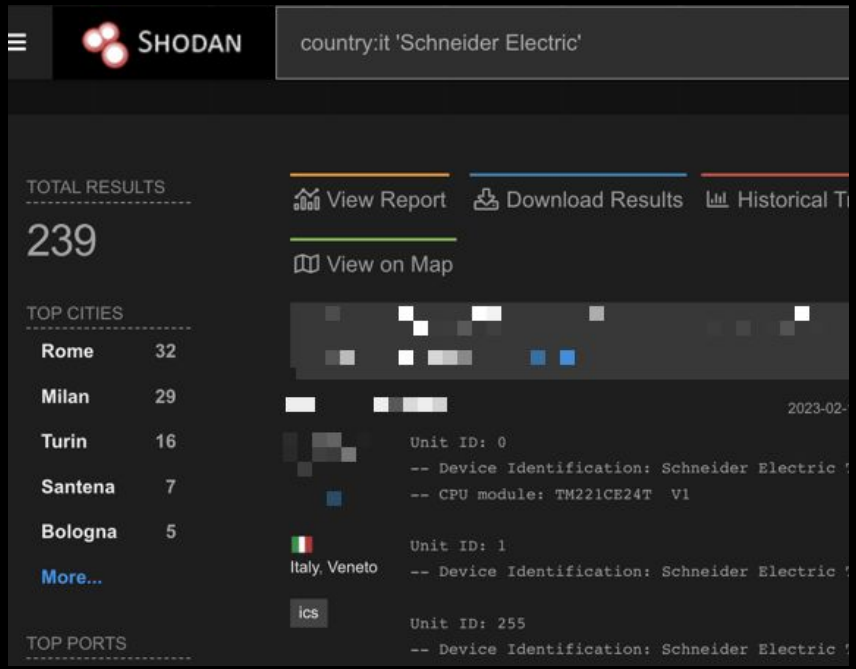
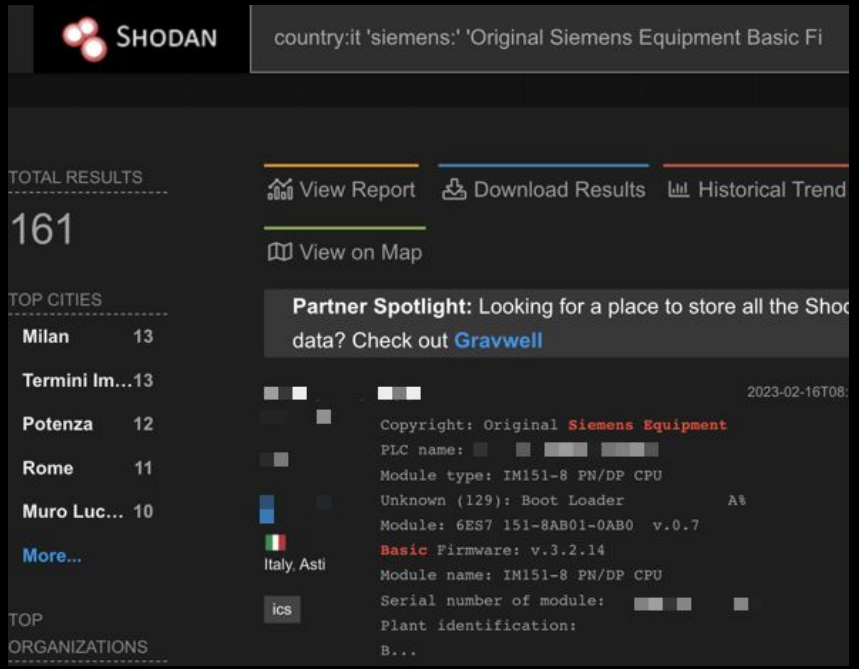
PLC OSINT

Sample OSINT PLC on Shodan portal





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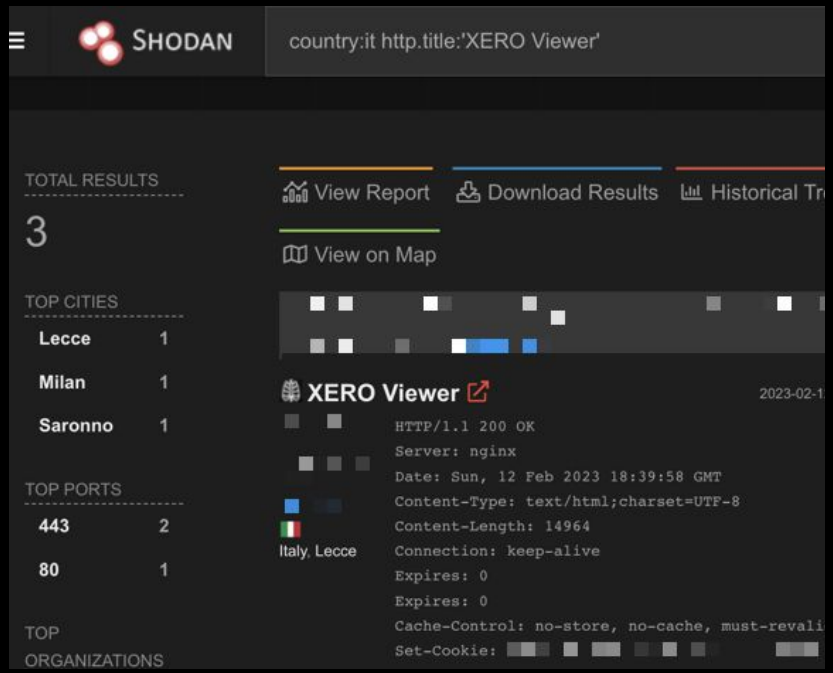
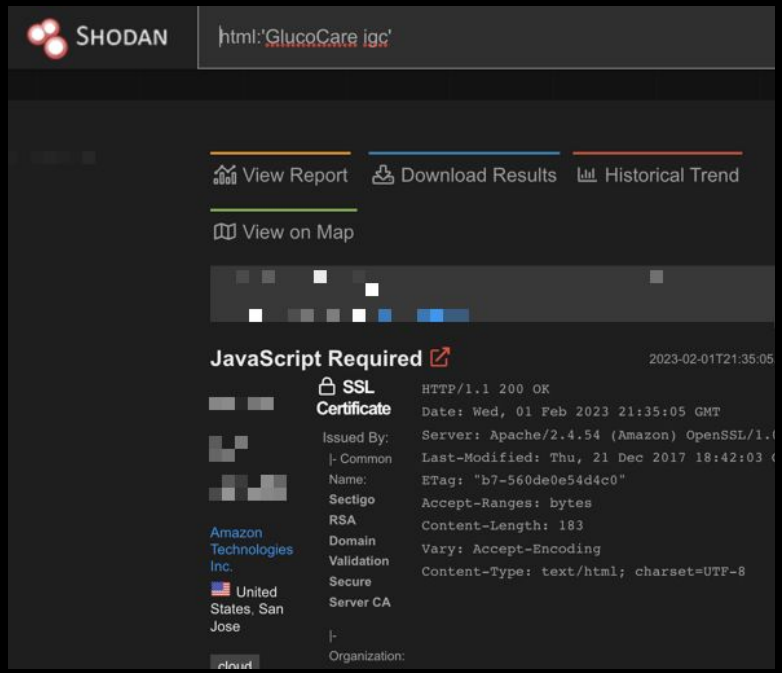
Medical Devices Exposed

Sample OSINT medical devices on Shodan portal





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Countermeasure pilar(s)

PREVENTION

- **People awareness**
- Vulnerability management
- Assessment programs
- End point protection solutions
- Network segregation

DETECTION

- End point protection solutions
- Intrusion Detection Systems
- SIEM infrastructures

RECOVERY

- Containment procedures
- Backup and recovery solutions and procedures

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www.sicuranext.com

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