



Security By Design

The ultimate approach to IoT Cybersecurity

Mission

We help creators of
intelligent connected devices
to **design, implement** and **operate**
their systems with a
sustainable security level

Is security fundamental?

YES

The modern IoT, and IIoT devices **need** to be secure or at least secured:

- The market requires it
- Governments are starting to require it
- There are **robust international standards** that depict the implementation of security

WE CAN HELP

- Our team has strong skills on security
- We know the **security standards** and we can train your personnel to gain awareness and understanding of the topic
- We can provide a **secure product** that implements the security standards with state-of-the-art technology, entirely designed and developed by Security Pattern.

Who we are: the team



Matteo Giaconia
Senior System Engineer



Alberto Battistello
Senior Security Engineer



Lorenzo Nava
Security Engineer



Stefano Cristalli
Senior Security Engineer

- Engineer - M.Sc.
- Ph.D.
- Author of SHA-3
- Patents / Certs
- Master



Gabriele Quagliarella
Security Expert



Maria Chiara Molteni
Security Engineer



Marta Fornasier
Security Engineer



Fabiana Gaffurini
Administrative Manager

Who we are: the partners



Guido Bertoni
CEO



Filippo Melzani
CTO



Massimo Ratti
DevOps Manager



Manuel Crotti
Business developer

- Engineer - M.Sc.
- Ph.D.
- Author of SHA-3
- Patents / Certs
- Master

Security Pattern's reference markets

- IIoT

- Industrial automation
- Utilities
- Automotive
- Medical
- ...



- IoT

- Smart building
- Home automation



- Misc.

- Consulting
- FW development
- Government/Defense



Security By Design

the approach

Security By Design: the approach

Architecture Lifecycle as seen from the IoT perspective:

- Development cycle ranging from a few months up to some years
- Service life of the product of some years up to 10+ years

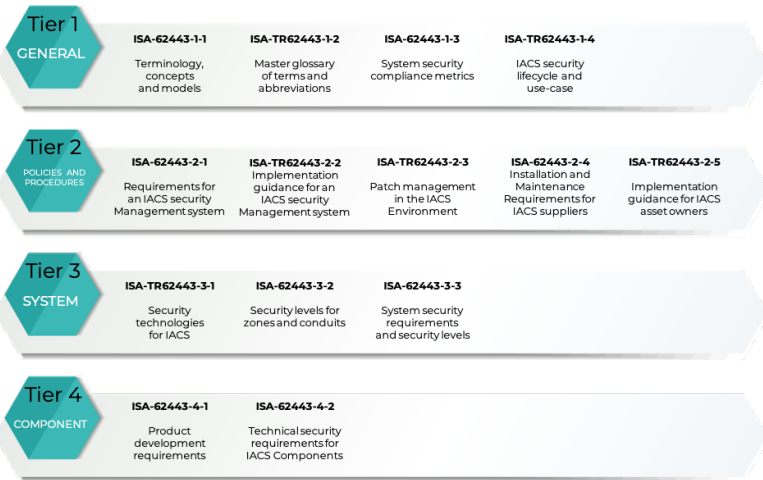
Architecture Security as seen from the IoT perspective

- Security needs to be ensured over the entire life of the device
- We firmly believe that this is possible only by means of a **Security-by-design** approach

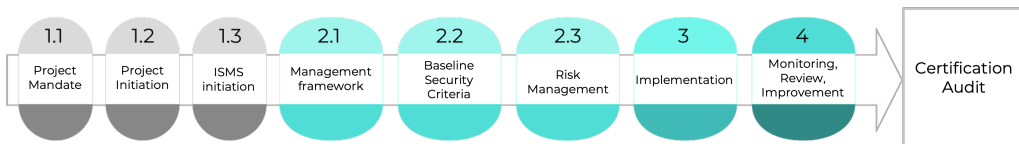


Security By Design: the foundations

The standard: **ISA/IEC 62443 - IACS**



The standard: **ISO 27001 - Cloud**

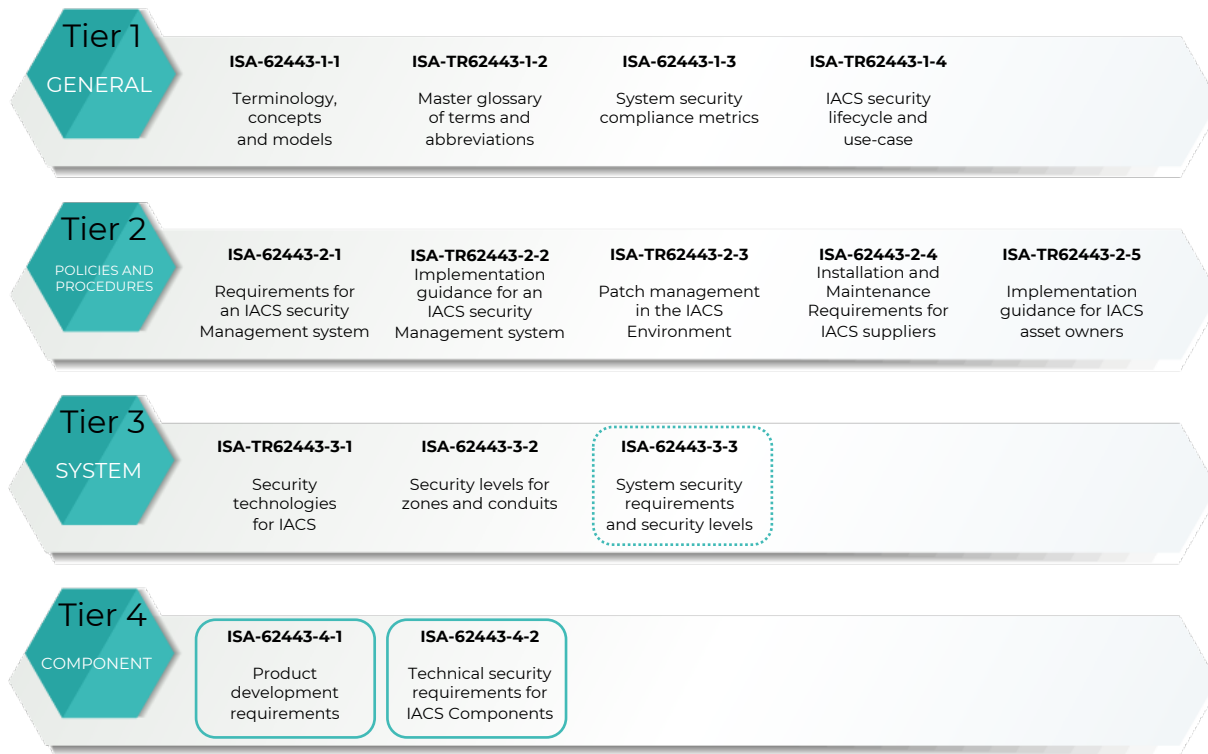


The product: **IoT Secure Suite®**



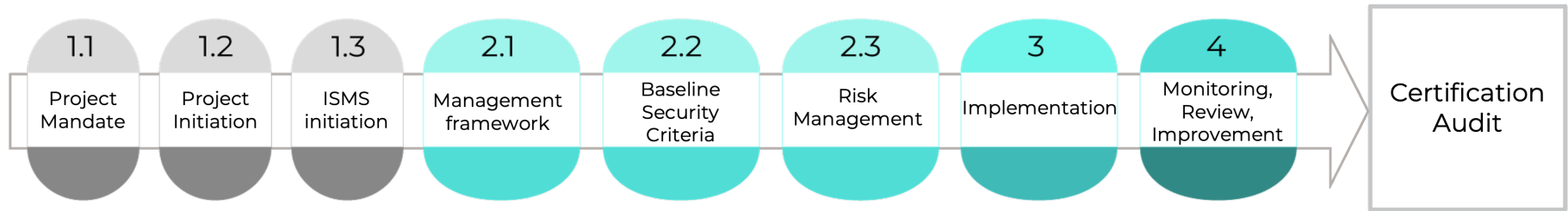
The standard: ISA/IEC 62443

- Reference security standard for IACS
- Industrial IoT devices are covered in Tier 4
- Our offer:
 - **Course with qualified trainers**
 - **GAP analysis**
 - **Consulting and development for certification path**



The standard: ISO 27001 - Cloud

- Cloud services and infrastructure are a typical use case for ISO 27001 implementation and compliance checking



- We provide a series of specific services relative to this domain.
Examples:
 - Vulnerability assessment
 - Penetration testing
 - Expert review of infrastructure and configuration (containers, orchestrators, cloud platform) and application code (cloud services, web applications)

The product: IoT Secure Suite®



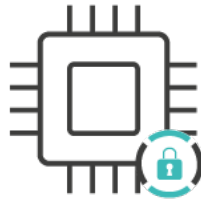
The Key Ingredients



PKI with
dedicated
CA



Smart key
provisioning
process



Secure
key storage
architecture



Secure
FOTA

The results: IoT Secure Suite®



We take into account all the components of the system



Client
protection

Channel
protection

Data
protection

Cloud
protection

Security requirements vs. achievements

REQUIREMENTS

- Ensure that legitimate IoT devices cannot be manipulated by unauthorized parties
- Prevent the use of infrastructure by unauthorized devices and/or users

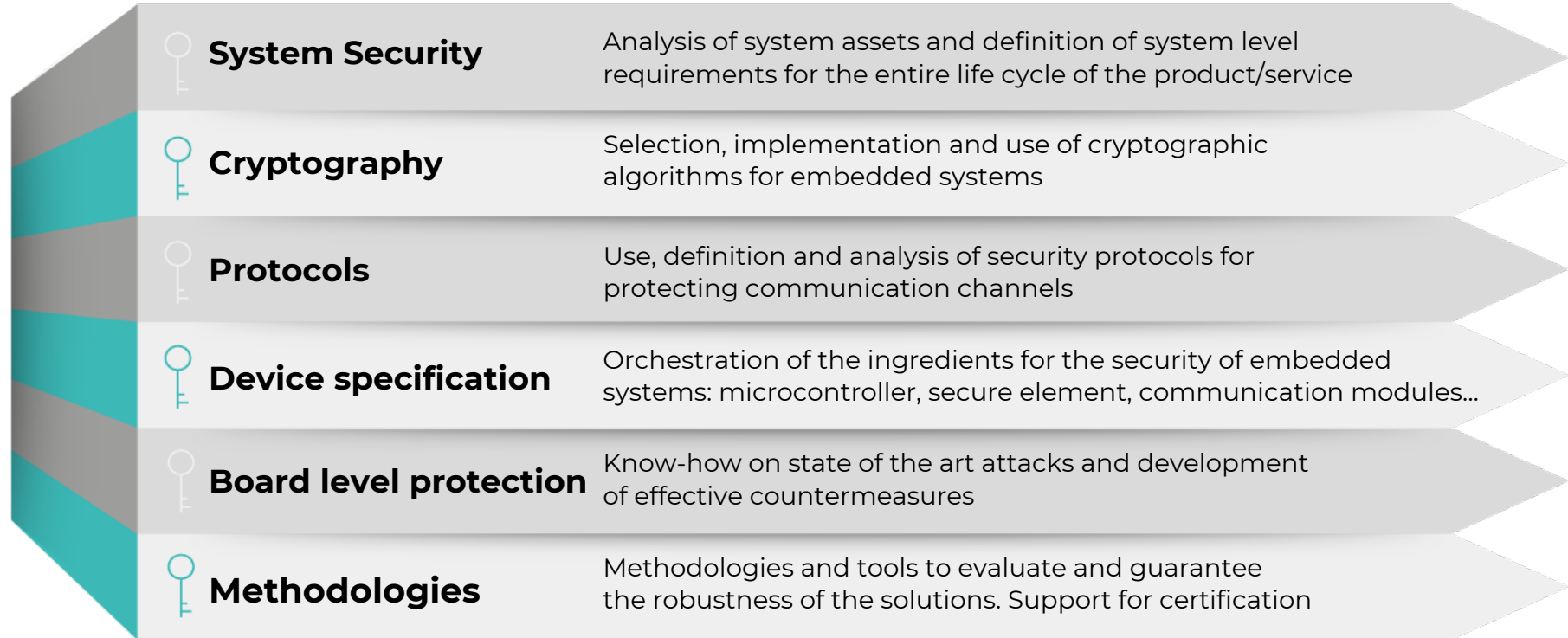


ACHIEVEMENTS

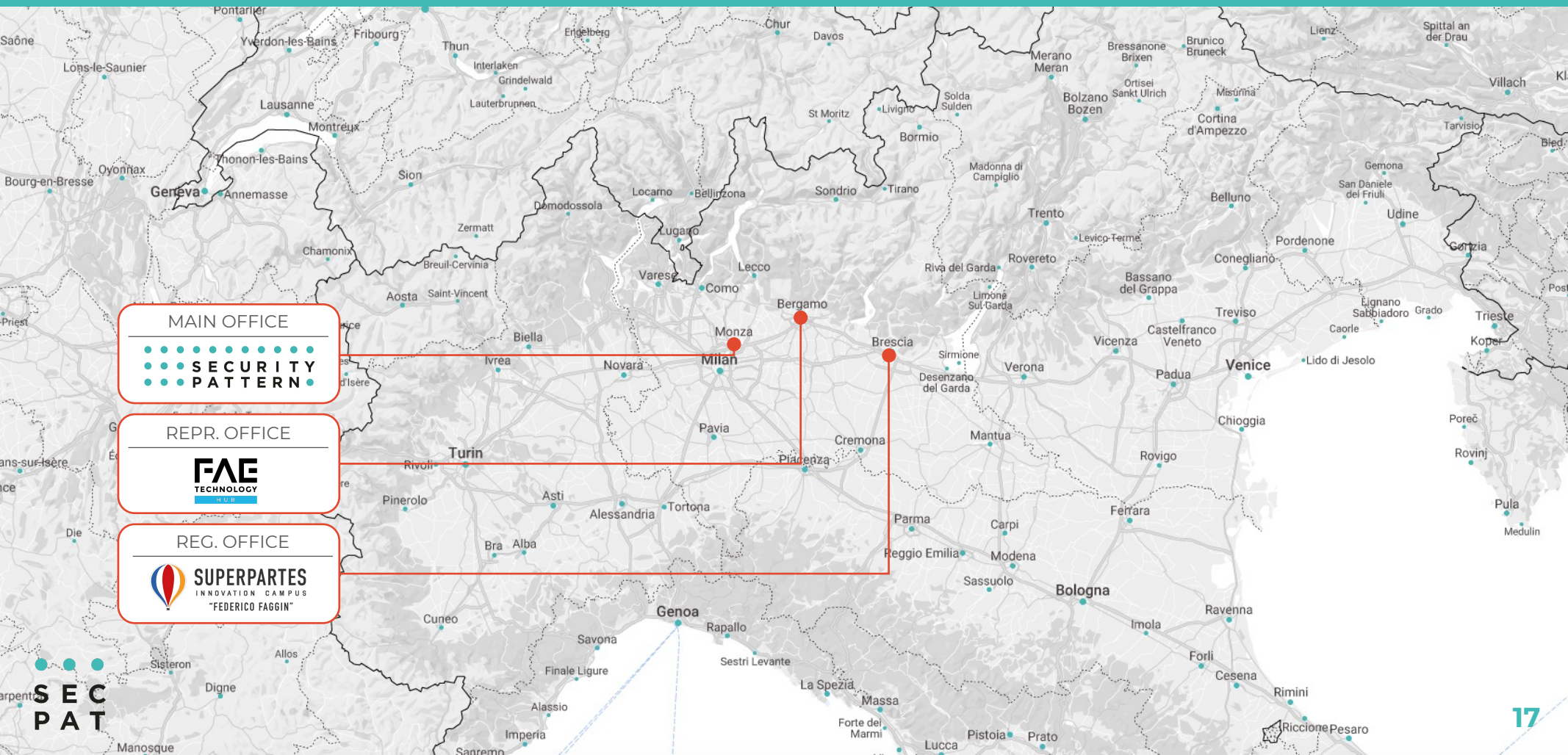
- ✓ Prevented the use of infrastructure by unauthorized devices and/or users
- ✓ Ensured that legitimate IoT devices cannot be manipulated by unauthorized parties
- + **Prevented the spread of unauthorized firmware upgrades**
- + **Prevented the theft of data and Intellectual Property**
- + **Secured communication for the entire infrastructure**

What else?

Key competencies



Where we are



MAIN OFFICE



REPR. OFFICE



REG. OFFICE



SEC
PAT



Thank you!
hello@securitypattern.com