industrial internet CONSORTIUM

IIC World Tour - Turin:
Security Working Group Briefing

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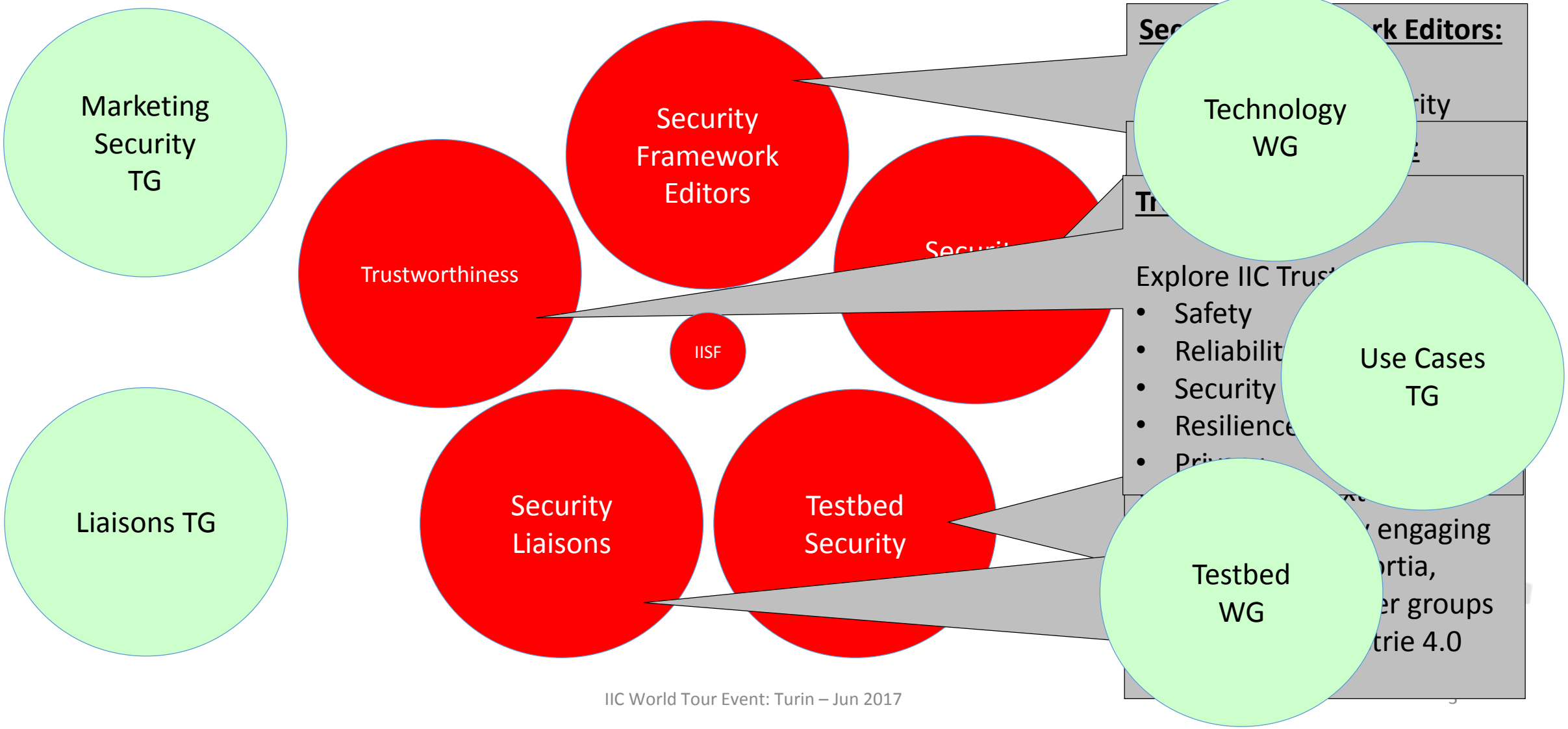
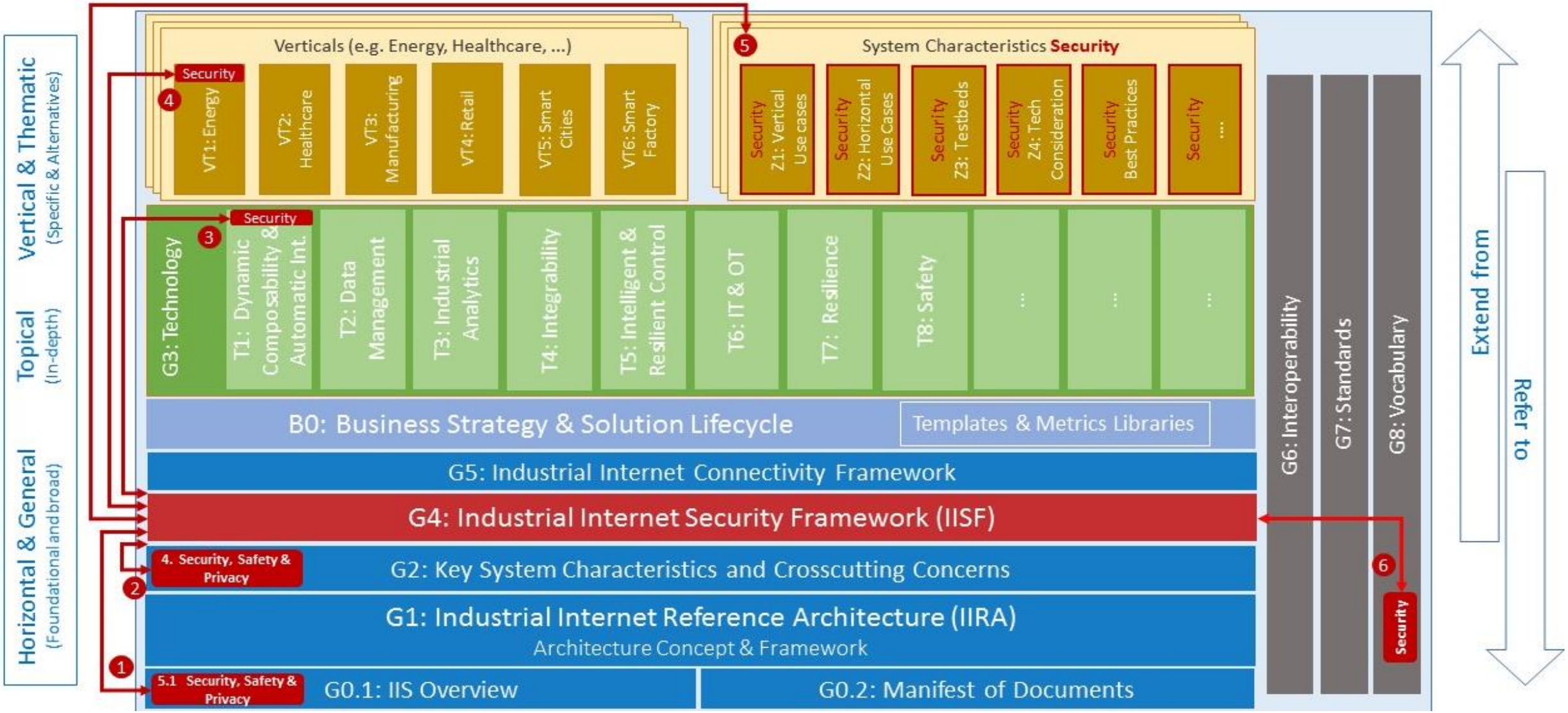
Security Working Group Charter

Group Mission	**The purpose of the Security Working Group, is to address the trustworthiness of the IIoT ecosystem, driving the vision on safety, reliability, resilience, security, and privacy.**
Scope	The domain is broken down into subcategories to address individual aspects relevant to IIoT: • maintain the document library for IIoT, specifically evolving framework documents and creating support documents • guide practical implementation by working with IIC Testbeds, providing public-facing technology demonstrations, and provide thought leadership for the industry • identify gaps and construct requirements to engage with external consortia, standards bodies, and industry groups • apply the breadth of industry understanding through maturity models, use cases, case studies, norms and best practices This promotes IIoT business adoption of trustworthy technology, interoperability, best practices and models

Security Working Group Organization



The IIC Library of Knowledge + Security



IIC Security Framework Publication

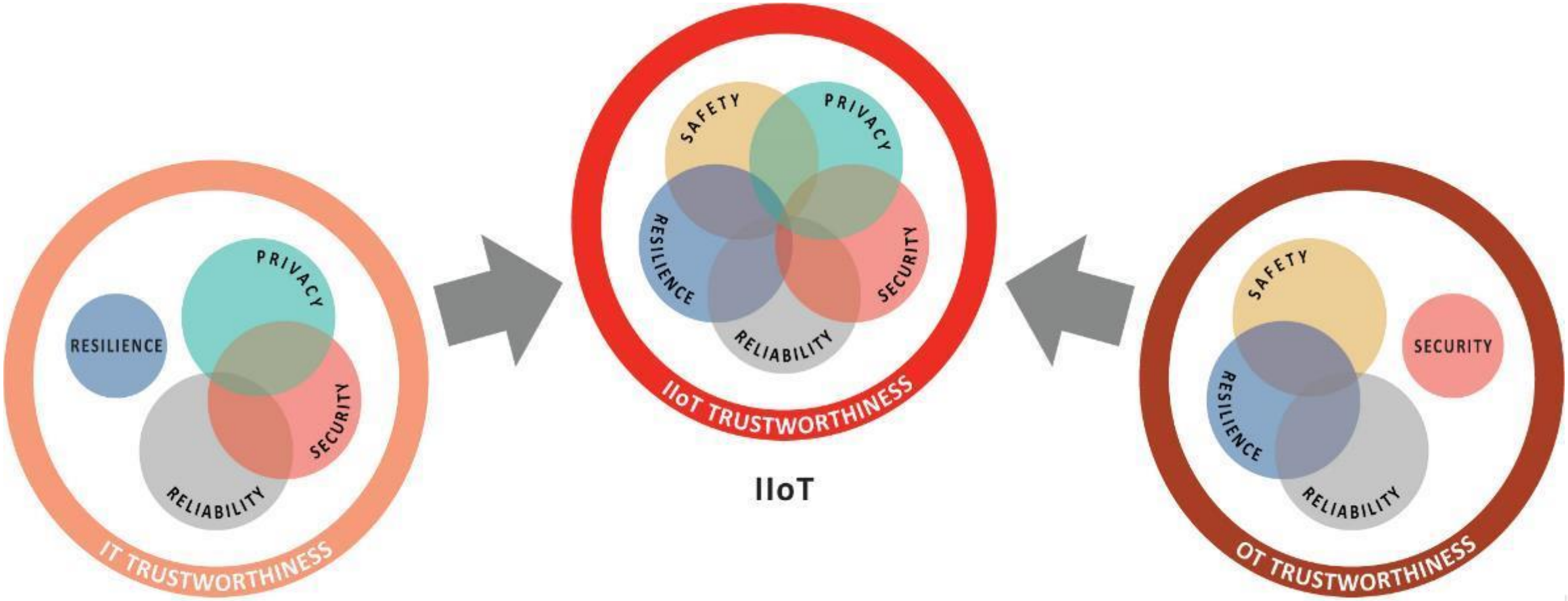
The IIC has published the Industrial Internet Security Framework (IISF)

- 174 pages
- 12 chapters
- 7 Annexes
- 18 pages of reference lists
- 177 individual references
- 142 individual acronyms
- 37 figures
- 7 tables

- All references hyperlinked (Description & Download)
- Fully Indexed
- Table of contents
- Table of figures
- All hi-res (EPS) vector graphics
- 800+ comments over the lifetime of the document
- 15 version updates in one day (mid-July)

http://www.iiconsortium.org/IISF.htm

IIoT Trustworthiness: OT/IT Convergence

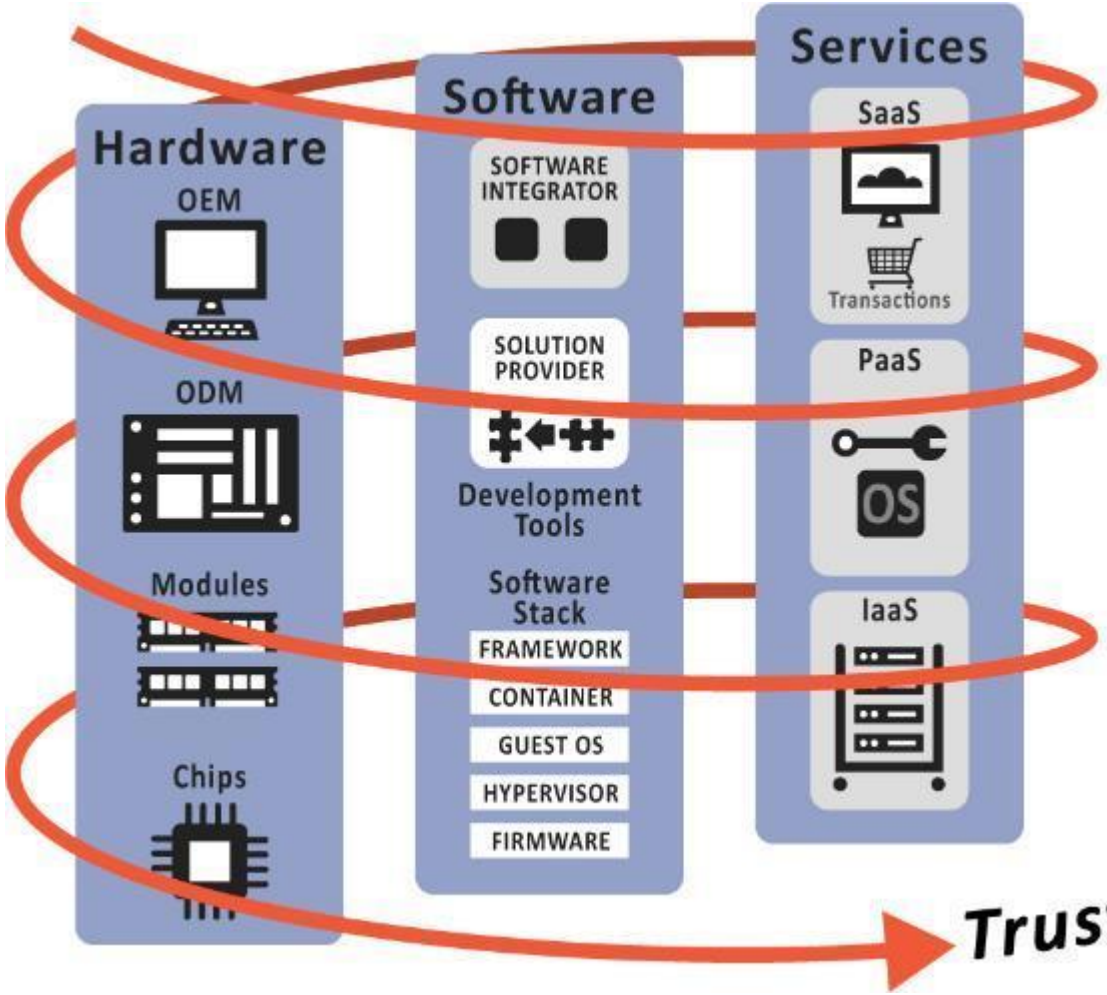


Trustworthiness: Basis for Industry Adoption of IIoT

- Industrial Business Benefits from IIoT Trustworthiness
- Leverage Trustworthiness to Manage Risk:
  - increase likelihood of correct business decisions
- Permeation of Trust:

  Assure Trust across the entire Industrial System
  - Component Builders
  - System Builders
  - Operational Users

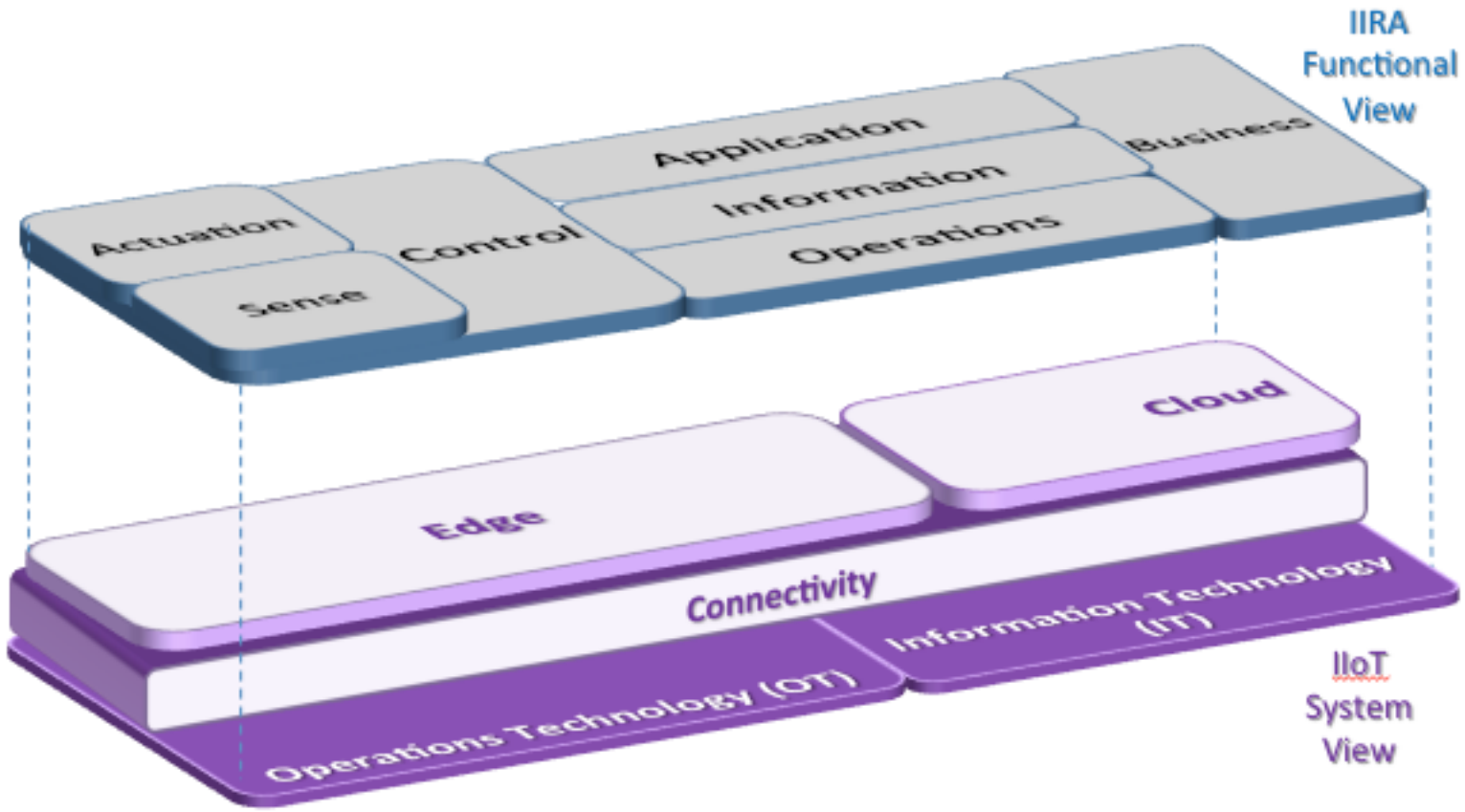
Assurance of the Permeation of Trust



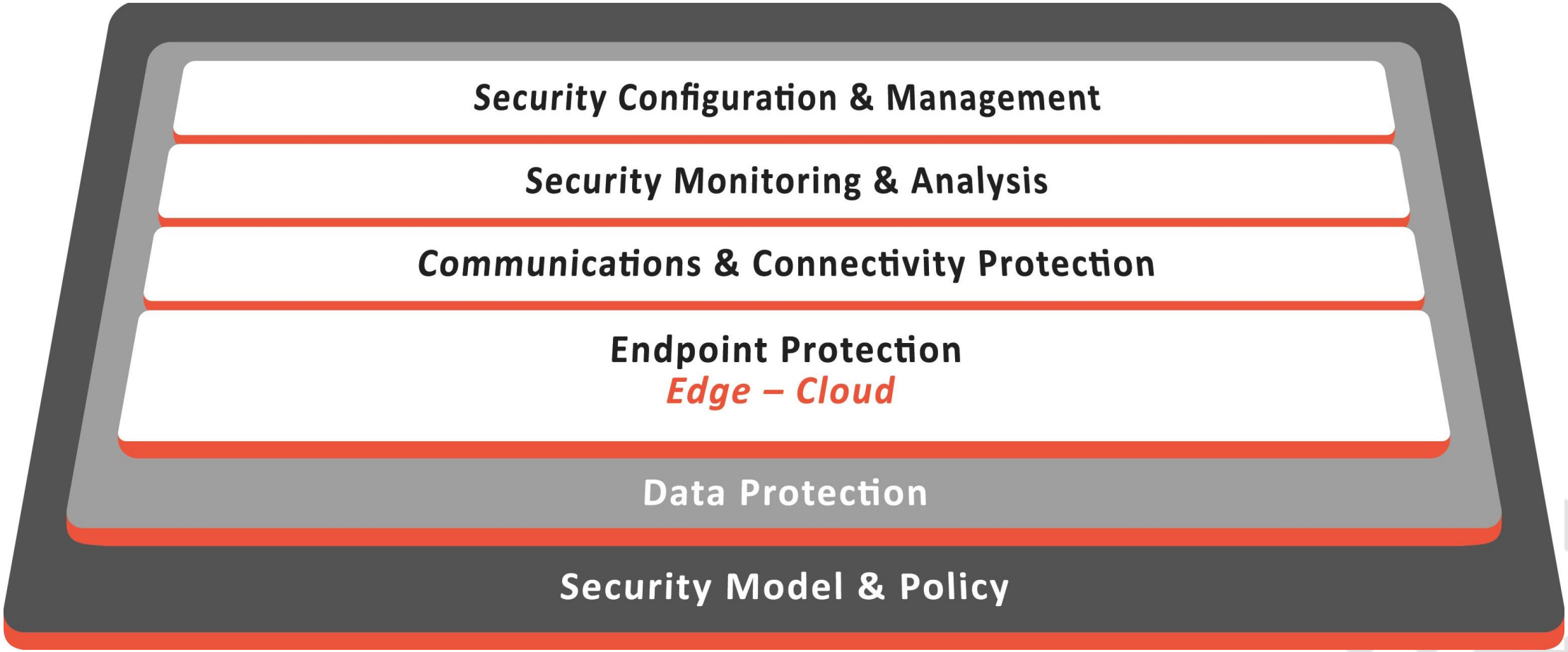
Permeation of Trust

trust in all of the system elements, how these elements are integrated and how they interact with each other.

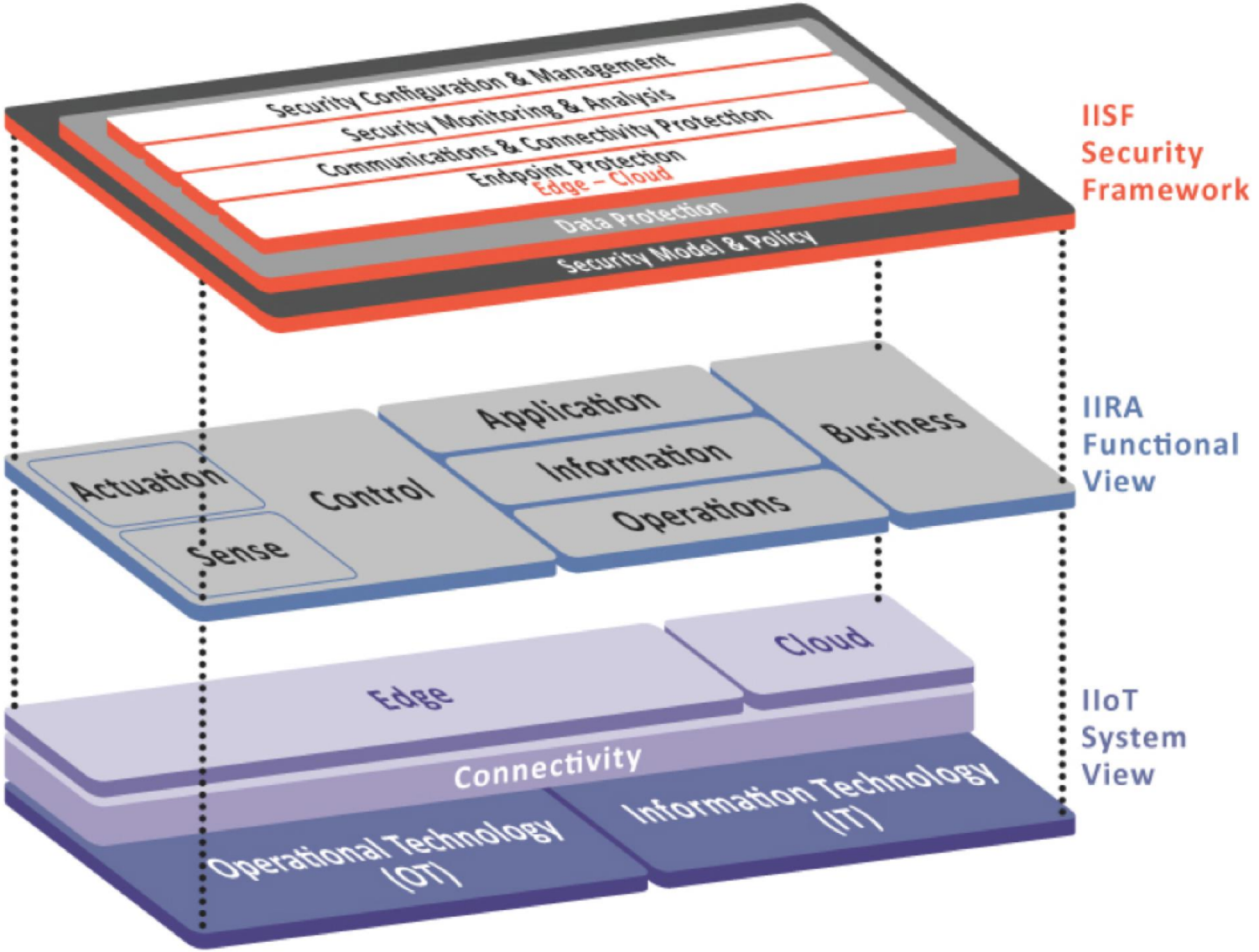
Perception of IIoT



IIoT Security Building Blocks and Techniques



IIoT Security Application



Industrial Internet Security Framework Summary

- Addresses Industrial Internet security issues
- Delivers the adoption model to apply IIoT security techniques
- Unifies Industrial characteristics in terms of trustworthiness
    - Security to enable: safety, reliability, resilience and privacy
- Provides system-wide, top-to-bottom assurance of Trustworthiness
- Applies techniques spanning: endpoints, communications, monitoring, and management
- Tracks future security trends to bring into Industrial Internet when mature

International Collaboration

IIoT Though Leadership

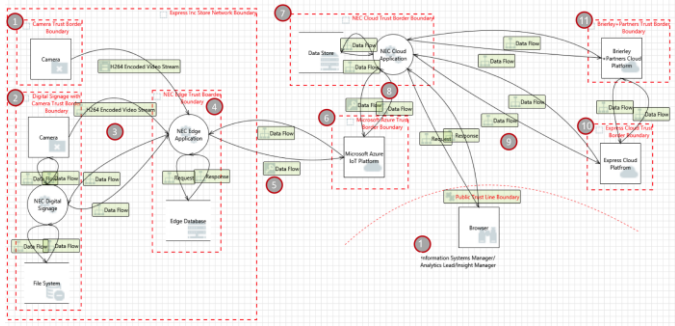
- Industrial Internet Consortium
- Industrie 4.0
- National Institute of Standards and Technology (NIST)

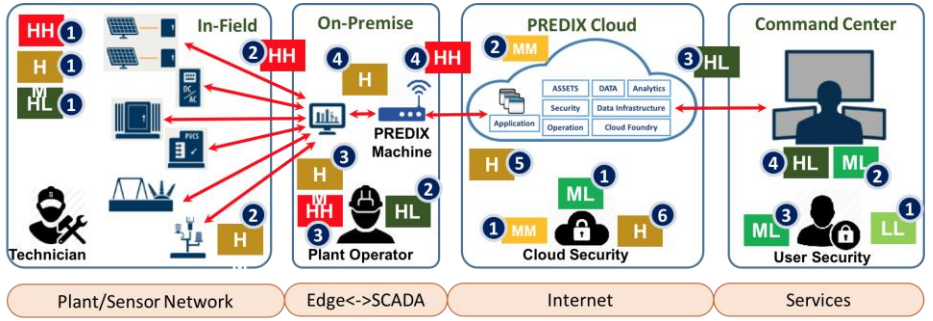
IIC Testbed Security Profile

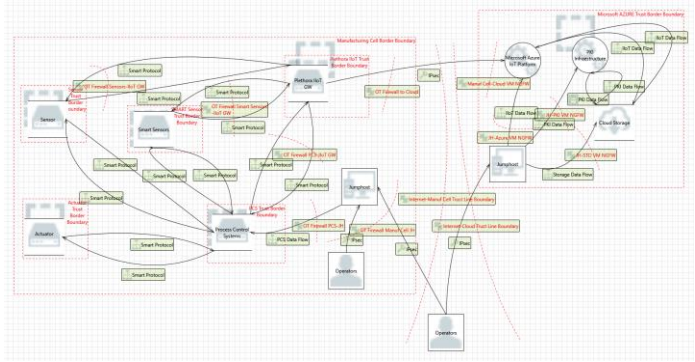
- Retail Video Analytics
  - First testbed evaluated
  - STRIDE for threat assessment
  - Privacy issues

- Digital Solar Panel Testbed
  - Focus on reliability and safety
  - IoT Gateway

- Smart factory Machine Learning
  - Focus on reliability and safety
  - Threat Model using STRIDE
  - IoT gateway
  - Honeypots







Security Maturity Model

Hierarchical structure

3 Business functions

- 3 Domains for each Business function

- - 2 Security Practices for each Domain

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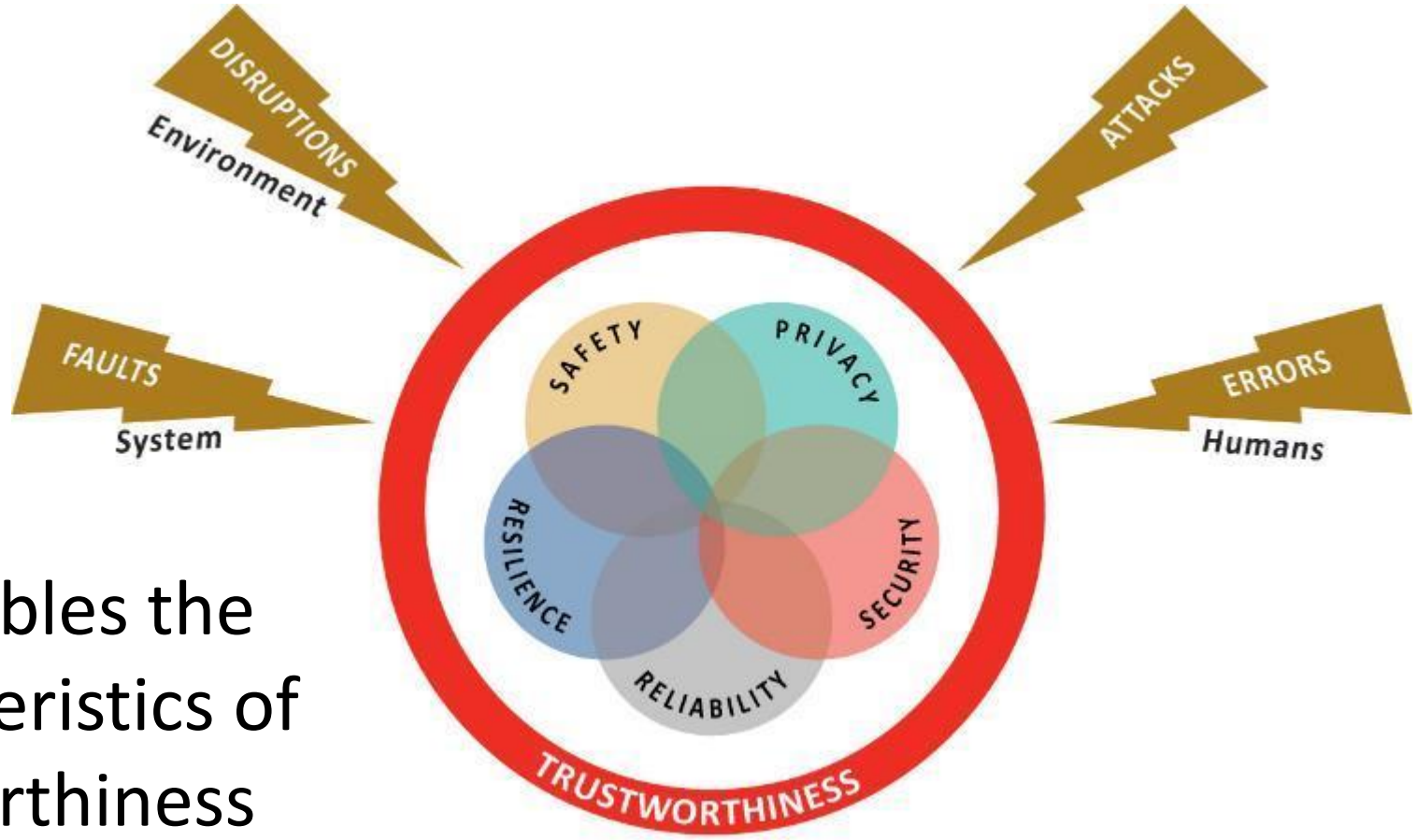
18 Practices in total provided with a description

Endpoint Security Document

Lay out a set of recommended best practices for endpoint security in industrial applications

- Security levels to address different levels of security needed
- Provide for each level, a list of recommendations
- Establish a series of items that can be verified by a third party

Whitepaper on IIoT Trustworthiness



Security enables the other characteristics of IIoT Trustworthiness

THANK YOU

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