

Security: impact on connected systems

(a new roadmap item for TNO-ESI)

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KEY QUESTIONS

1. What does it take to come to security-by-design?
2. How do I become aware of system security issues?
3. How can I survive without being a security expert?

Wikipedia: security is a huge area

Security

The degree of resistance to, or protection from, harm. It applies to any vulnerable or valuable asset, such as a person, dwelling, community, item, nation, or organization

Categorizing security [\[edit \]](#)

There is an immense literature on the analysis and categorization of security. Part of the reason for this is that, in most security systems, the "weakest link in the chain" is the most important. The situation is asymmetric since the 'defender' must cover all points of attack while the attacker need only identify a single weak point upon which to concentrate.

IT realm

- Communications security
- Computer security
- Internet security
- Application security
- Data security
- Information security
- Network security
- Endpoint security

Physical realm

- Airport security
- Corporate security
- Food security
- Home security
- Infrastructure security
- Physical security
- Port security/Supply chain security
- Transportation security

Political

- National security
- Public security
- Homeland security
- Internal security
- International security
- Human security

Monetary

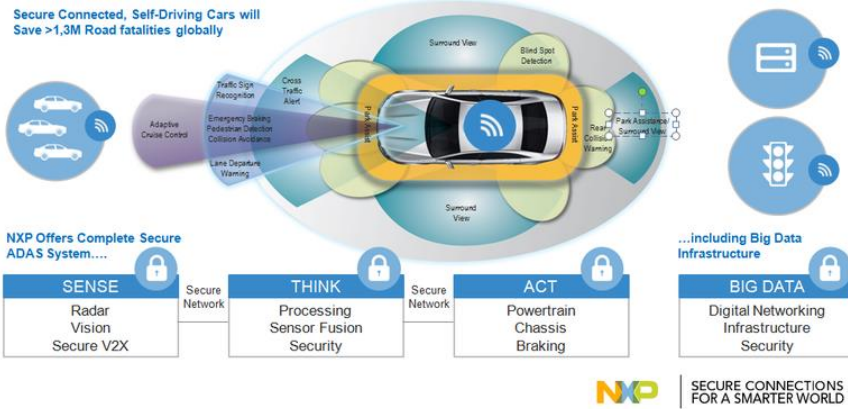
- Economic security/financial security
- Social security

- Operations security is a complement to other "traditional" security measures that evaluates the organization from an adversarial perspective.^[3]

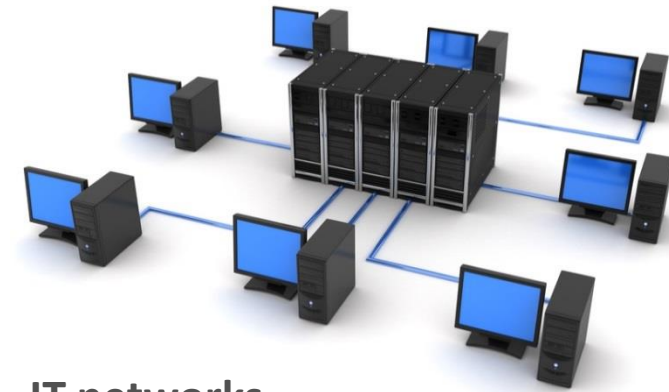
Connected systems



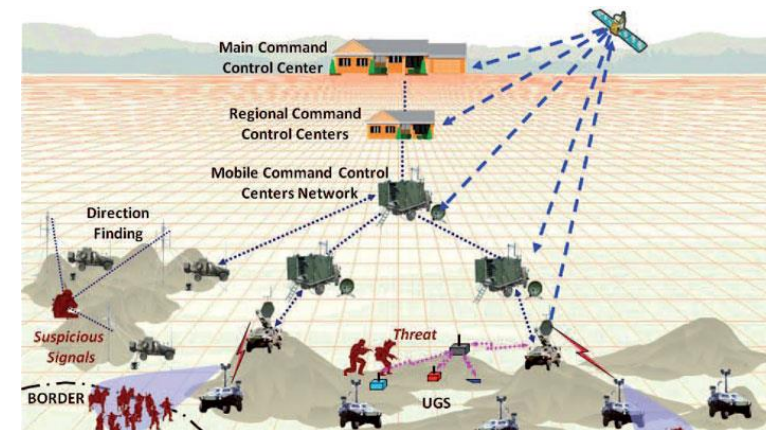
The Internet



Platform centric system-of-systems

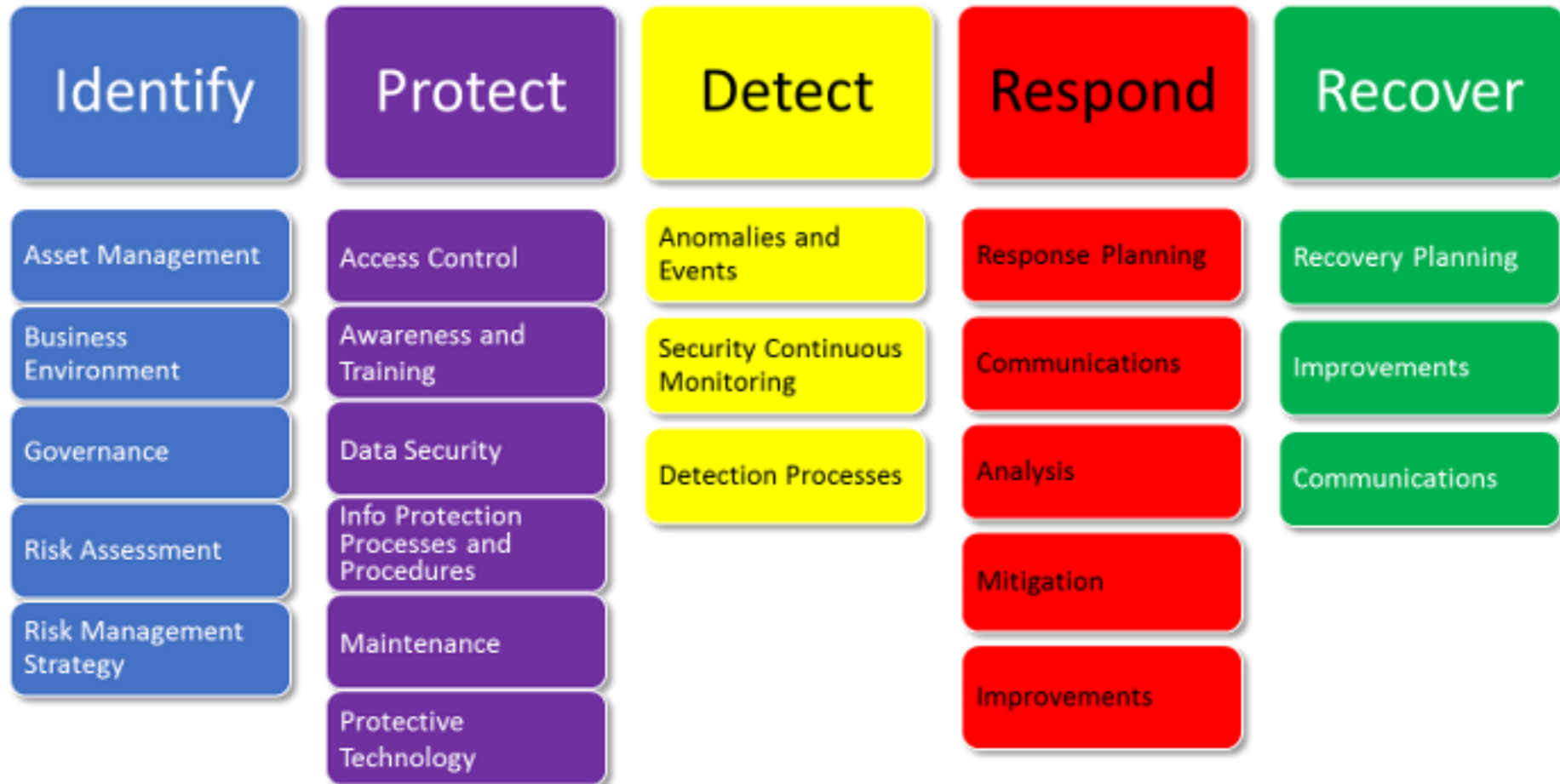


IT networks



Netcentric system-of-systems

NIST Cyber Security Framework



3 HTSM Security roadmap items (to be updated)

Embedded systems

1. Sensor networks for situational awareness

HW / Physical
RT constraints

Cyber physical systems

2. Vital infrastructure protection

SW defined systems (often) running on embedded platforms (and often with mechanical components)



Operational security

Software systems

3. Cyber

Digital
ICT
Enough resources

Security: impact on connected systems

CONTRIBUTORS

Timo van Roermund (NXP) - Security for self-driving cars

Thomas Quillinan (Thales) - Secure Information Sharing

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