

Safety, Security, and Information Security

An Integrated Approach for Enhancing Integrative Security

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Background

Security - whether protection against accidents (safety), sabotage (security), or cyberattacks (information security) - must be ensured at all times, especially in critical infrastructures. Safety and (information) security share the common goal of protecting people, the environment, and facilities. Their measures must be developed and implemented in an integrated manner so that safety does not compromise security and vice versa. In corporate environments, coordinated implementation is crucial to avoid goal conflicts and ensure overall protection across all organizational processes.

Project Partners

Nuclear Powerplant



Power Grid



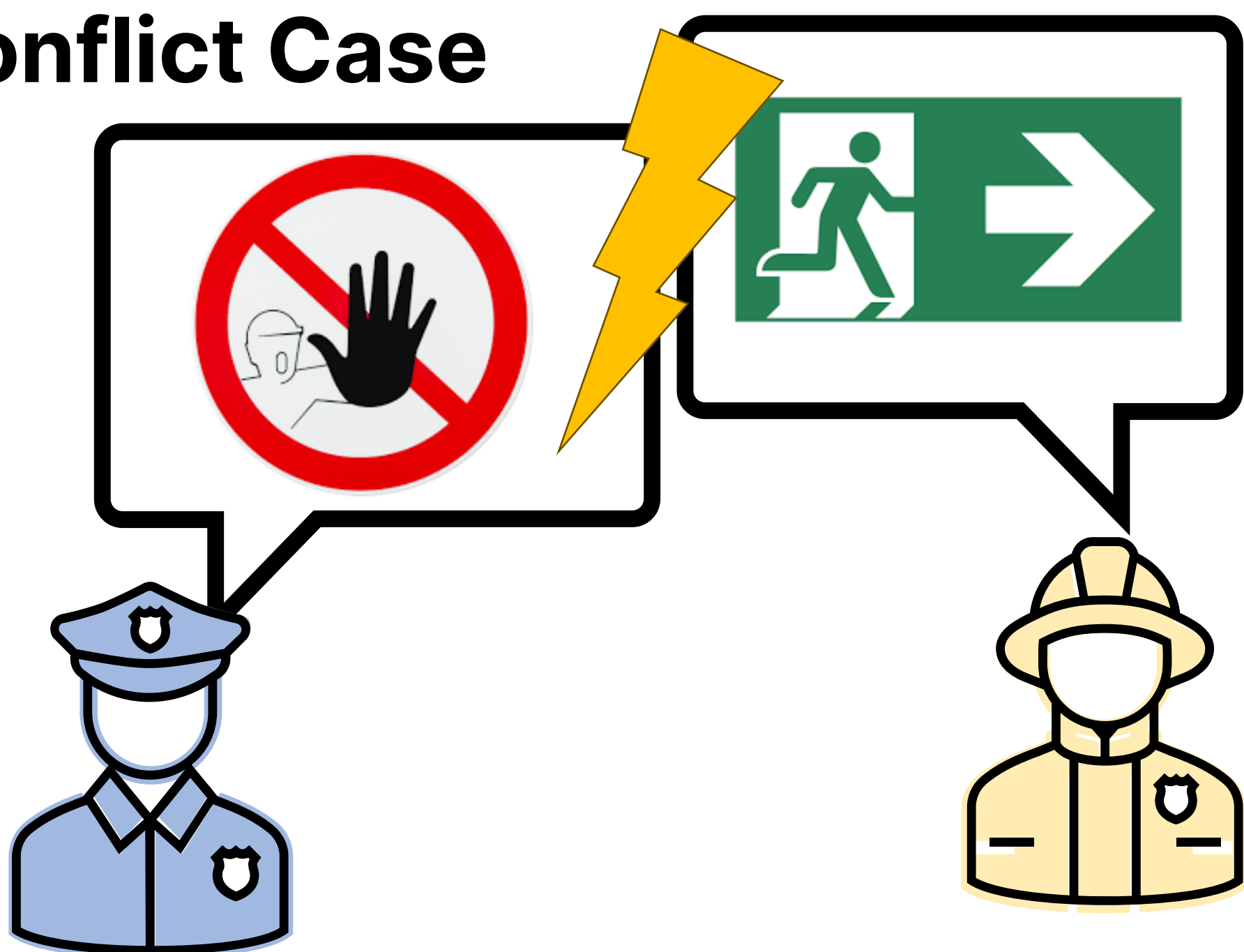
Hospital



Railway



Conflict Case



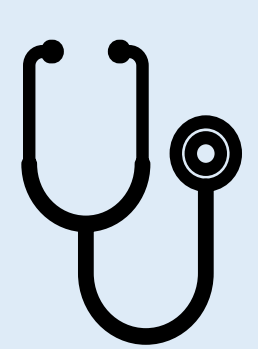
Security officer:
Access to security-critical areas by unauthorized persons must be prevented

Fire safety inspector:
In the event of a fire, all doors must open for the rapid evacuation of people.

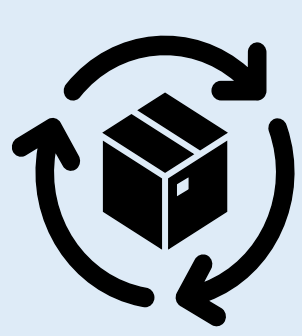
Types of Interrelations

- **Impairments:** Gaps in IT security endanger safety. During ransomware attacks patient mortality rates in hospitals increase by 20-35% (Neprash et al., 2022).
- **Synergies:** Restricted access to sterile areas serves both patient safety and security. The same applies to the controlled zone in nuclear power plants.
- **Conflicts:** Open access to Information about accidents and safety weaknesses can strengthen safety but threaten security by showing bad actors' new ways to attack a system.

Project Goals

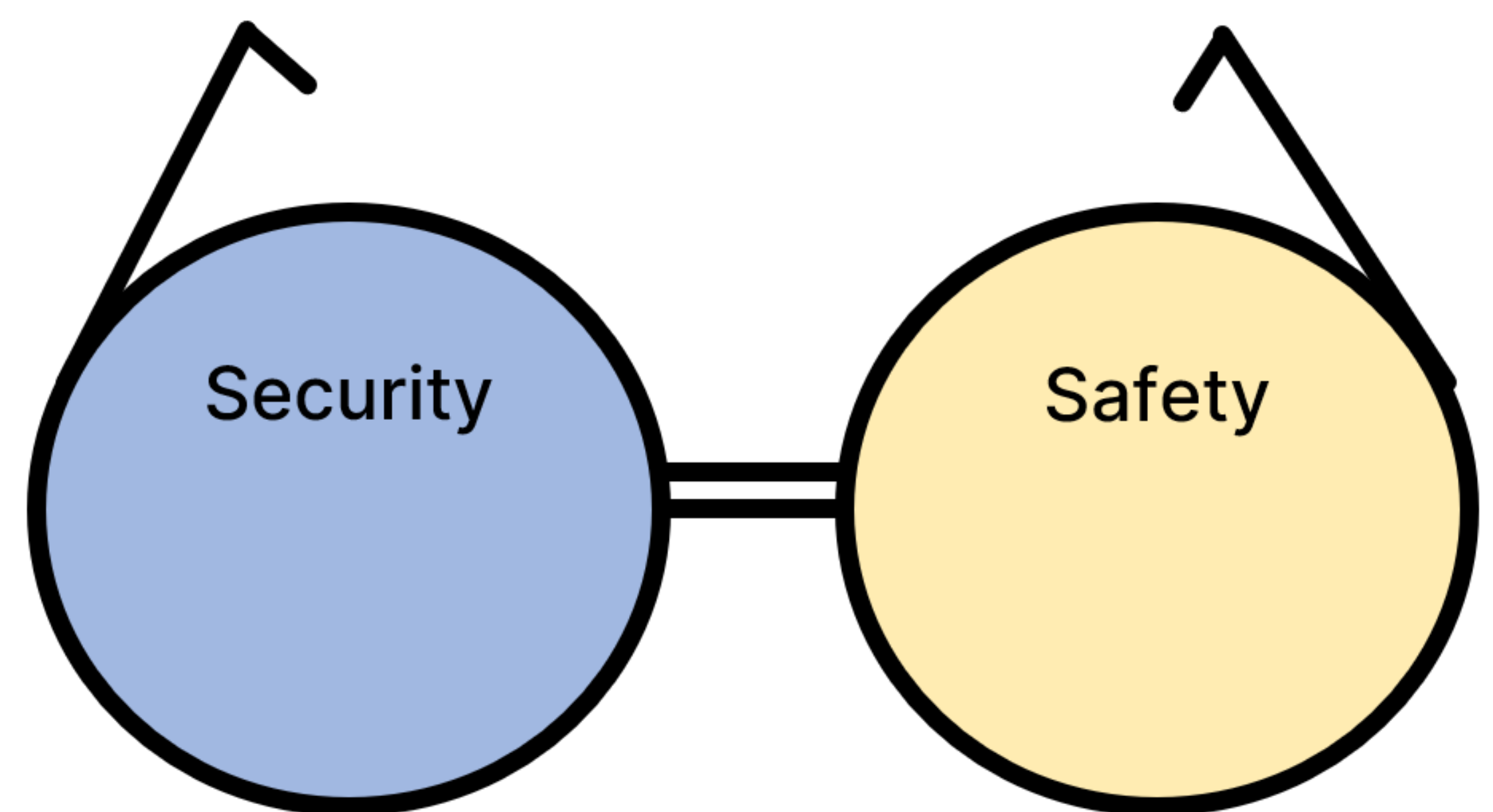


Development of tools for the identification of potential interrelations between the three domains



Procedural implementation of a systematic examination of measures regarding risks of potential interrelations

Approach



Integrated Security- and Safety-Approach

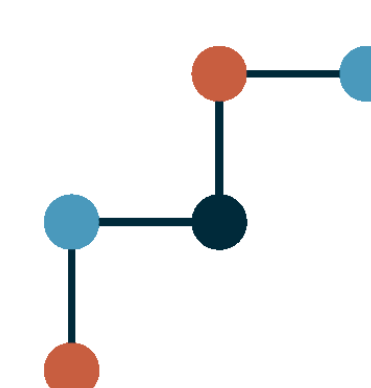
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Literature:

Neprash HT, McGlave CC, Cross DA, et al. Trends in Ransomware Attacks on US Hospitals, Clinics, and Other Health Care Delivery Organizations, 2016-2021. JAMA Health Forum. 2022;3(12):e224873. doi:10.1001/jamahealthforum.2022.4873

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