
- Bachelor-/Masterarbeit - Security Metrics for Cross-Domain Financial Critical Infrastructures

Background

Financial Institutions (FIs) are the main non-military market for computer security products. They are well interconnected with other critical infrastructures (telco, power grid etc.) and face more and more **new threats and challenges**. FIs are aware of this fact and usually develop their own solution. However, a cooperative defence has been proven to be more successful than isolated solutions. Accordingly, the trend is to perceive **IT-security as a cooperation issue between FIs** and not as a competition field. FIs are looking for a **secure/dependable large-scale monitoring infrastructure** to share security relevant information among them (cf. www.comifin.eu). A widely accepted principle is that an activity can't be managed if it can't be measured. **Measuring** and controlling IT security through **metrics** is a less explored research field. Such metrics are a prerequisite for understanding, improving and validating/certifying the security of this monitoring infrastructure. The existing **security metrics** mainly involve (1) qualitative indicators that require subjective evaluation, (2) are tailored to specific goals and application domains. Therefore, research efforts are needed to remedy these deficiencies.

Tasks

- Investigate the categories of existing security metrics as well as the existing methods used to develop security metrics for their suitability to the financial infrastructure.
- Analyse security implications (different risk profile in different domains, composite risk...) of connectivity across domains (FIs, Telco, Power Grid) on the applicability of the existing security metrics.
- Adapt existing metrics and if necessary define new ones.
- Evaluate the resulted metrics regarding the application in a cross-domain financial critical infrastructure taking into consideration its specificities (scalability, anonymized data, minimal information...)

Prerequisite

- Motivation to work within an international project in the interface between the financial and the IT sector.
- Knowledge in IT security.

Start

- Immediately

Contact

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