



Lehrstuhl für Sicherheit in der Informatik
Prof. Dr. Claudia Eckert



Announcement: Student job/internship in cooperation with Fraunhofer AISEC, Garching

Development of a Semantic Threat Modeling and Analysis Framework

Motivation and Task Description

Analysis of threats and security risks in complex systems is a time consuming, error prone task. To support this task, tools to model systems and to analyze these models are needed. It is necessary to take into account all available information, avoid bugs, and cope with inconsistencies. Promising approaches for this are semantic modeling and knowledge-based analysis.

During this work, the following steps are to be performed:

- Model Use-Cases in a Smart Grid Architecture Model (SGAM) inspired, and a security ontology
- Formulate axioms, properties and queries to assess the models by identifying vulnerabilities, attack vectors, and mitigation strategies
- Develop tools to automate these steps and improve them using linked data

Requirements

- Good practical JAVA programming skills
- Familiarity with Semantic Web and Linked Data
- Interest in IT Security and Formal Logic
- Experience with SPARQL, PROLOG, RDF, and Python is beneficial

Contact

Please apply to all contacts listed below.

Make sure to include your CV and a current grade report in your email.

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