

## Secure IT systems for operation and monitoring of critical infrastructures

Relying on service continuity for societal functions starts by understanding the complex socio-technical systems that must operate to e.g. deliver electricity, water, heat and other critical services to society. An important ingredient of such systems is the control system and its dependence on the information and communication technology (ICT).

RICS will contribute to improved security through better understanding of vulnerabilities and risks in such systems of systems. Through understanding the interdependencies between the ICT and the provided societal service we achieve resistance against attacks and failure of the service.

### Overview

RICS will increase the competence in the area of ICT security for critical infrastructures through research and education related to this domain. The research is carried out within three interdependent areas:

- Data analysis and emulation
- Risk and vulnerability analysis using attack modelling
- Real-time detection of adverse events and anomalies

### Data analysis and emulation

In order to understand the threats to service continuity we will capture/create realistic system behavior and network data. The data will be used to evaluate methods created in the project, and for repeatable playing of scenarios recognized by the active stakeholders.

### Risk assessment and attack modelling

Prevention of adverse events and attacks begins with a focus on the assets that are essential for the operation of the systems. RICS will develop methods to identify vulnerabilities and to measure risks. Attack models and scenarios will be used for verification of new security mechanisms and dialog with the stakeholders.

### Adverse event detection

Effective protection of today's complex systems requires real-time monitoring for early warning about adverse events and their mitigation. RICS will develop anomaly detection methods for operation in critical infrastructures. New methods are also needed for the transition from today's systems to future smart grids and networks.



More information: [www.rics.se](http://www.rics.se)

### Project title:

Research Centre on Resilient  
Information and Control Systems

### Project period

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### Partner Organisations

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