RESEARCH CASE STUDY

MODELLING FOR SOCIO-TECHNICAL SECURITY (MASS)

PETRAS

THE PETRAS NATIONAL CENTRE OF EXCELLENCE FOR IoT SYSTEMS CYBERSECURITY

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Integrating technical and social aspects into security design of critical national infrastructure

Critical National Infrastructure (CNI) systems need cybersecurity, physical security and personnel security. Networks of diverse technologies involve people interacting with the technology to enable a process, and working together as a single system structured to achieve operational objectives.

Integrating the internet and the Internet of Things (IoT) with CNI systems enables greater capabilities for remote, autonomous sensing. Integration supports smarter control, monitoring, predictive maintenance, safety, and security management, but this convergence brings new security risks that demand serious attention.

An integrated social and technical approach to security development is necessary.

We explore:

- the enabling factors and barriers to adopting socio-technical security modelling
- how people understand socio-technical security risks, and the lengths to which they go to address them and support security risk management
- the evaluation and validation of security development tools and operational security tools

We work with critical infrastructure partners to support the security reasoning behind the integration of the internet and Internet of Things with their critical infrastructure systems and services.

Outputs from the project should provide a better understanding of the realistic usefulness of socio-technical security modelling and simulation, as well as approaches towards secure-by-design decision drivers towards adoption. The project will highlight current limitations and produce policy recommendations to support improved security in IoT-based critical national infrastructure.

Find out more

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- https://petras-iot.org/project/modelling-for-socio-technical-security-mass

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