



Security Engineering for lifelong Evolvable Systems (SecureChange)

Project Number 231101

Coordinator & Organisation:

Prof. Fabio Massacci
Universita Degli Studi Di Trento - DISI
Trento – Italy

Project Home page:

<http://www.securechange.eu/>

Project Abstract

There is growing demand to continuously evolve systems to meet changing business needs, new regulations and policies, novel technologies and computing infrastructures.

Unfortunately, the pace of required change affects our ability to ascertain and maintain the quality of a system. Our objective is thus to develop techniques and tools that ensure "lifelong" compliance to security, privacy and dependability requirements for a long-running evolving software system. This is challenging because these requirements are not necessarily preserved by system evolution.

The project will develop processes and tools that support design techniques for evolution, testing, verification, re-configuration and local analysis of evolving software. Our focus is on mobile devices and homes, which offer both great research challenges and long-term business opportunities.

Concrete achievements will include:

- Architectural blueprint and integrated security process for lifelong adaptable systems
- Methodology for evolutionary requirements with tools for incremental requirements models evaluation and transformation
- Security modelling notation for adaptive security with formally founded automated security analysis tools.
- IT security risk assessment with tool-support for lifelong adaptable systems
- Techniques and tools to verify adaptive security while loading on-device
- Model-based testing approach for evolution

The results are continuously validated jointly with key industry players.