Motivation

Can everyday technology help us protect our homes? Make our streets safer and our cities more secure?

- Typical home could contain more than 500 smart devices by 2022
- Collaborative security enables users to exploit everyday technology to protect assets from harm
- Dynamically select and compose multiple heterogeneous components to meet security requirements

Framework

Find capabilities $C$ and mediator $M$ to satisfy the requirements $R$ in environment $E$ $C, M, E \vdash R$

1. **Security controls** specify the mechanisms to enforce security requirements
2. **Capabilities** model what the components can do and how they can do it
3. **Mediators** enable heterogeneous components to interoperate

Implementation and Results

Implementing the optimal security controls given the capabilities available in the operating environment.

- **Prototype**: FICS (Features-driven Mediation for Collaborative Security) http://sead1.open.ac.uk/fics/
- **Experimentation**: validated with a collaborative robots case study, larger-scale cases in the future
- **Publication**: Requirements-driven mediation for collaborative security, SEAMS 2014

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