SEVENTH FRAMEWORK PROGRAMME

INTER TRUST

Interoperable Trust Assurance Infrastructure

Objective

Develop a dynamic and scalable framework to support trustworthy services and applications in heterogeneous networks and devices, based on the enforcement of interoperable and changing security policies

Addressing the needs of developers, integrators and operators

Rationale

- **Using dynamic security Service Level Agreements**: the software services and components will interoperate communicating and sharing data in a secure trusted manner dictated by negotiated, common security policies
- **Using advanced vulnerability detection techniques**: active and fuzz testing, to avoid security vulnerabilities introduced by the dynamic adaptation
- **Using privacy-preserving negotiation and delegation mechanisms**, even in the presence of scarce resources. Integrating legal, social and economic constrains

Innovation

- **New architecture** coping with **dynamic secure interoperability** by means of **Aspect-Oriented Programming** (AOP) techniques
- New paradigms for **modelling secure interoperability policies**
- **Combined techniques:** protection based on AOP, supervision based on monitoring and testing based on active and fuzz techniques
- **Tools** to insure secure interoperability **in all phases** of software development

Case Studies

Two completely different case studies with complex, high-demand critical services

- **Electronic voting,** to assure the required high level of trustworthiness for people voting from anywhere using a multiplicity of devices
- **Vehicle-to-Vehicle** and **Vehicle-to-Infrastructure** Communications, to address the security needs in today's complex mobility scenarios for Citizens, Agencies, Mobility Services Providers and Car Manufacturers

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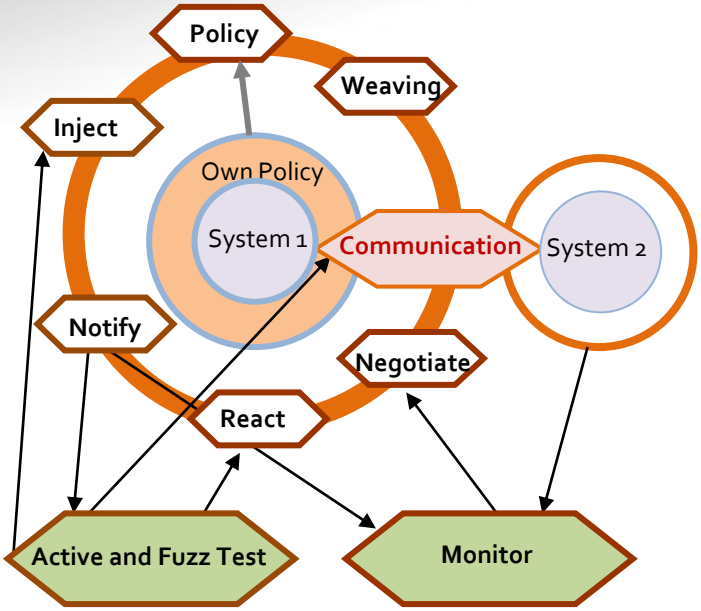
INTER-TRUST Framework



How it works

- **Modelling languages** to model security policies
- **Negotiation/communication module** defines a common security **policy**
- **Aspects Generation module** dynamically generates aspects
- **Security Policy interpreter** interprets the negotiated policy
- **Monitoring and testing modules** inject code for **active and fuzz testing**, generate traces (**Notify**) used by the **Monitoring** to generate warnings that will provoke the **Reaction** module
- **Reaction module** performs protection and mitigation strategies
- **Aspect Weaver module** weaves and un-weaves aspects

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