

ISE (ITS SECURITY) Project: Introduction

ISE Seminar @ ETSI Security Week
16th JUNE 2017



Projet porté par

Campus Paris Saclay
FONDATION DE COOPERATION SCIENTIFIQUE

Labellisation principale

SYSTEMATIC
PARIS REGION SYSTEMS & ICT CLUSTER

Labellisations secondaires

advancity
Ville & Mobilité Durables

AS^{Tech}
Paris Region

mov'eo
PARIS DE MOUVEMENT

Soutien de collectivités territoriales

île de France

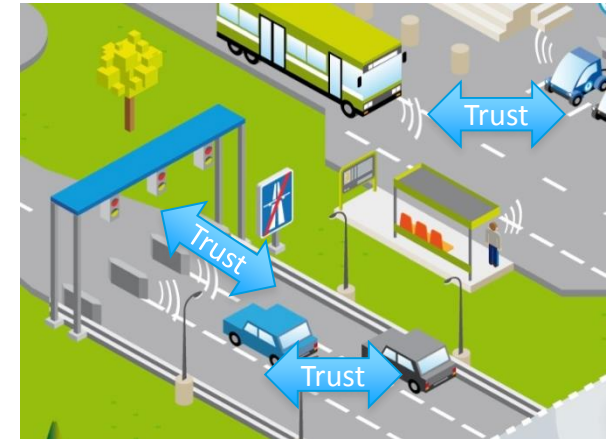
Essonne
LE CONSEIL GÉNÉRAL

CAPS

Cooperative safety and mobility applications depend upon data from other vehicles and the infrastructure

Context

- ◆ Vehicles Broadcast/Geocast information to neighbors
 - ◆ vehicle dynamics info (position, speed, heading ...)
 - ◆ perception of dynamic environment for active safety and future autonomous cars
- ◆ Security and privacy are paramount in cooperative ITS (G5)



Challenges

- ◆ Build security infrastructure (PKI)
 - ◆ Ensure scalability
 - ◆ Validation in large scale scenario
- ◆ Methods and process for security assurance/evaluation



PSA PEUGEOT CITROËN



Financial support:

TRIALOG



Valeo

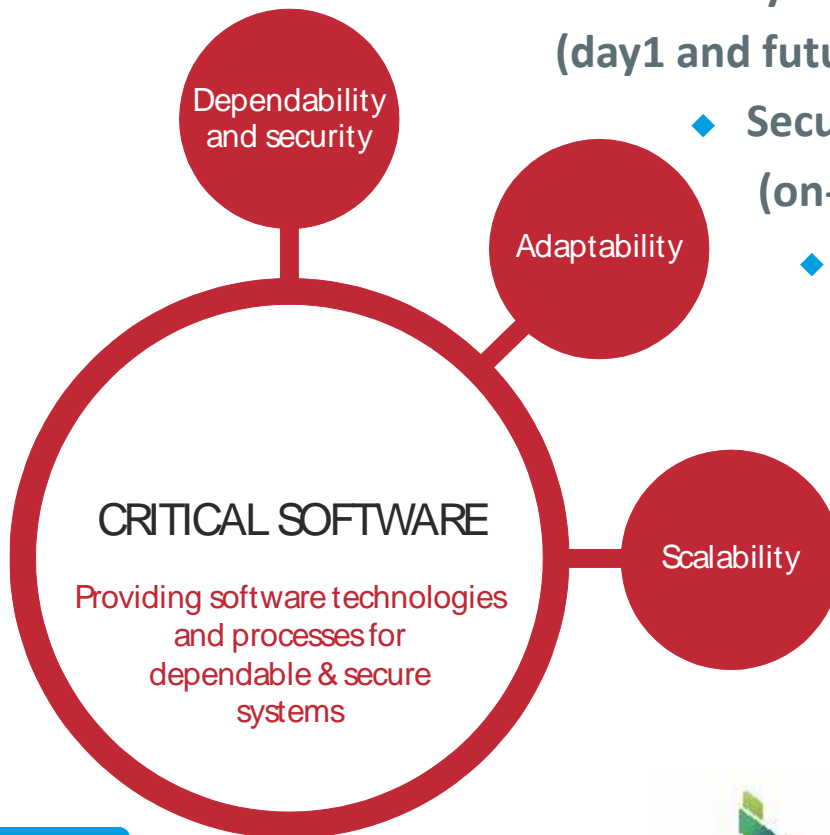
Academic support:



Cooperative safety and mobility applications depend upon data from other vehicles and the infrastructure

ISE Objectives

- ◆ ITS security requirements analysis and risk management (day1 and future applications)
- ◆ Security architecture design and development (on-board and off-board)
 - ◆ PKI design & development (performances, scalability)
 - ◆ Definition of the security system evaluation process & framework
 - ◆ Validation platform for security tests (penetration tests)



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TRIALOG



Financial support:

Academic support:



- ◆ **Challenge 1: mastering the overall security architecture of ITS cooperative system**
 - ◆ High scalability
 - ◆ Interoperability
 - ◆ Evolutivity and overall compatibility of ITS cooperative system
- ◆ **Challenge 2: a cooperative systems security assessment process**
 - ◆ A modular and flexible approach to support new ITS developments and security updates over the time
- ◆ **Challenge 3: a platform for integration and security assessment & test**

Comité projet

Pgm
Autonomous
Transport /
Project
ISE

**T1: Analyse des applications
ITS, analyse de risques et
solutions de sécurité E2E**

**T2: Système de confiance pour
les ITS (PKI V2X)**

**T3: Processus de certification
des systèmes de sécurité V2X**

**T4: Implémentation,
intégration et validation**

**Consolidation
archi
ELA
(tâche 4 SN)**

**Harmonisation,
déploiement**
National:
SCOOP@F
Europe:
Corridor, H2020,
C2C-CC ...

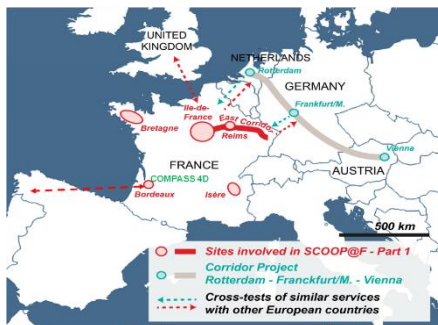


Contribution to the European
Telecommunications Standards Institute

Contribution to the Internet
Engineering Task Force (TLS
specification)



ELA



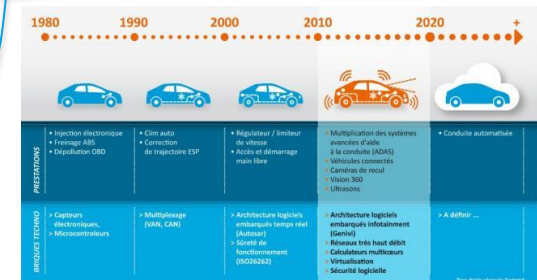
SCOOP@F

Contribution to the security
system deployment (PKI)

Complementarity:

ELA --> In-Vehicle Security Solutions

ISE --> Intra-Vehicle Security Solutions



◆ Value Creation

- ◆ PKI ISE used in ETSI Plugtests 2016
 - ◆ Demonstration of interoperability of secure V2X messages on ITS-G5
- ◆ Transfer to SCOOP@F
 - ◆ Deployment of Validation PKI, Production PKI
- ◆ Implementation of operational PKI since SEPT-2016 in SCOOP@F
 - ◆ Partners **IDnomic - PSA – RENAULT**
 - ◆ using OEM-dedicated Enrolment Authority and PKI services
- ◆ Implementation of security module compliant to ETSI standards
 - ◆ SME partner – **Trialog**
- ◆ Competences reinforced
 - ◆ **VALEO** Tier1 expertise, OBU supplier in SCOOP
 - ◆ **OPPIDA** Adaptation of standard process for ITSEC evaluation to the embedded automobile field



◆ Innovation

- ◆ 2 innovation awards: Amazon, Microsoft
- ◆ Events and congress
 - ◆ ITS World Congress Bordeaux 2015
 - ◆ ITS Europe Strasbourg 2017
 - ◆ Future@SystemX
- ◆ Many publications in conferences and more to come !
 - ◆ CySep 2014, NMTS 2015, SmartVehicles 2016, VNC 2016, VTC 2017
- ◆ Contribution to ETSI and to EU C-ITS Platform
 - ◆ Contributions sur la gestion des certificats C-ITS et les protocoles PKI
 - ◆ WI on pseudonym change management (TR 103 415)
- ◆ Participation to Car2Car WG SEC and to CAMP (US OEMs) at Misbehavior Detection workshop

Microsoft rewards ISE project with access to its “Azure” Cloud platform



Event



SystemX
INSTITUT DE RECHERCHE
TECHNOLOGIQUE
ISE project
Stand S10



Session TS32 Architecture and Security

22 June 2017 - 09:00 - 10:30

An Overview of Security Ongoing Work in
Cooperative ITS

Conferences internationales

- ◆ Publications to be submitted:
 - ◆ ISE security evaluation process (eRTS 2018)
 - ◆ Simulation of pseudonym changement management , PKI Dynamic sizing (to be confirmed)

Thank you for your attention Questions ?

contact@irt-systemx.fr

<http://www.irt-systemx.fr>

Paul Labrogere

Brigitte Lonc



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