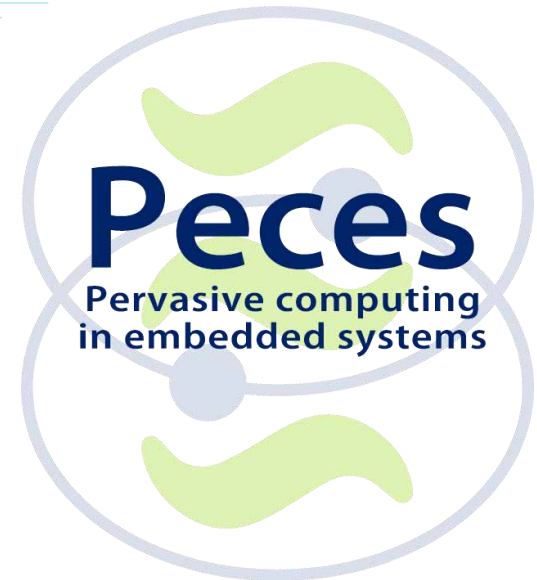




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Patricia Rodríguez
ETRA I+D



Overview

- **EMMA from an application point of view**
- **PECES from an application point of view**

The EMMA Project

- Embedded Middleware in Mobility Applications
- FP6 project ended beginning of 2009

Pervasive computing in embedded systems



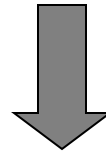
Peces

The PECES Project

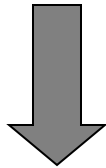
- Pervasive Computing in Embedded Systems
- FP7 project will end in December of 2011

THE CONTEXT

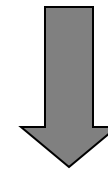
Existing infrastructure will need to be operated up to its design margins, maintaining and even improving its safety levels



Co-operative Transport Systems are the most promising solution



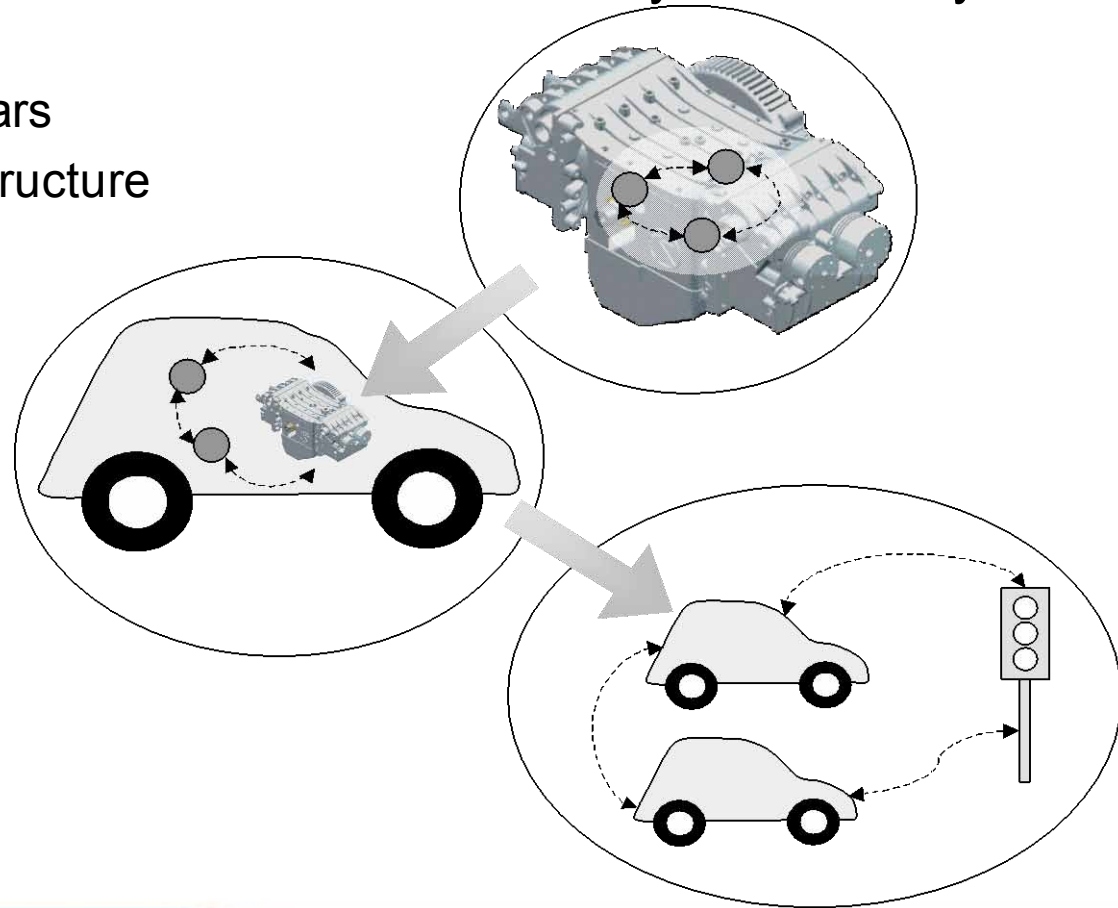
Smarter systems demand smarter sensors



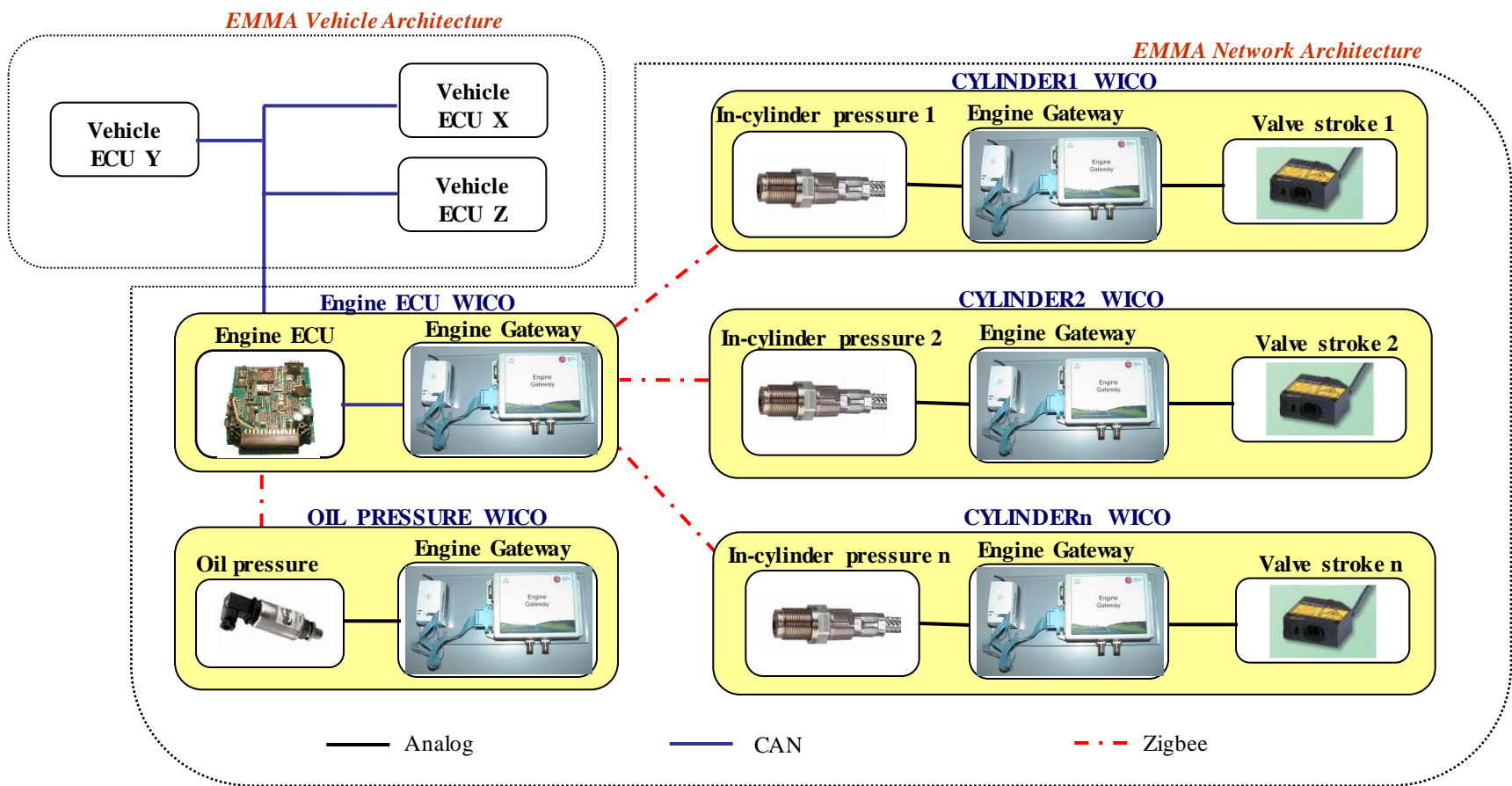
Cooperative systems require cooperative sensors

HIERARCHICAL APPROACH

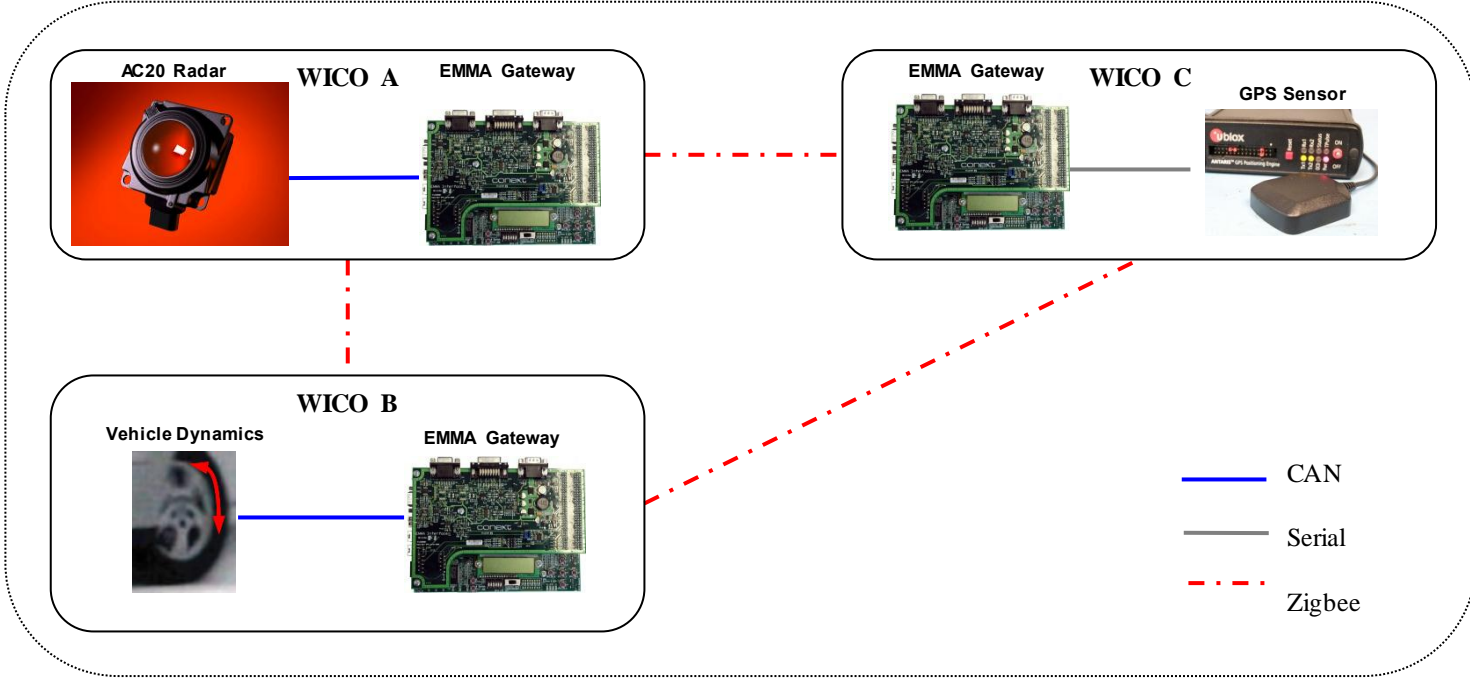
- Many sensors and actuators in today's cars
- ITS have to be cooperative in order to increase safety and security standards
 - Cooperation between cars
 - Cooperation with infrastructure



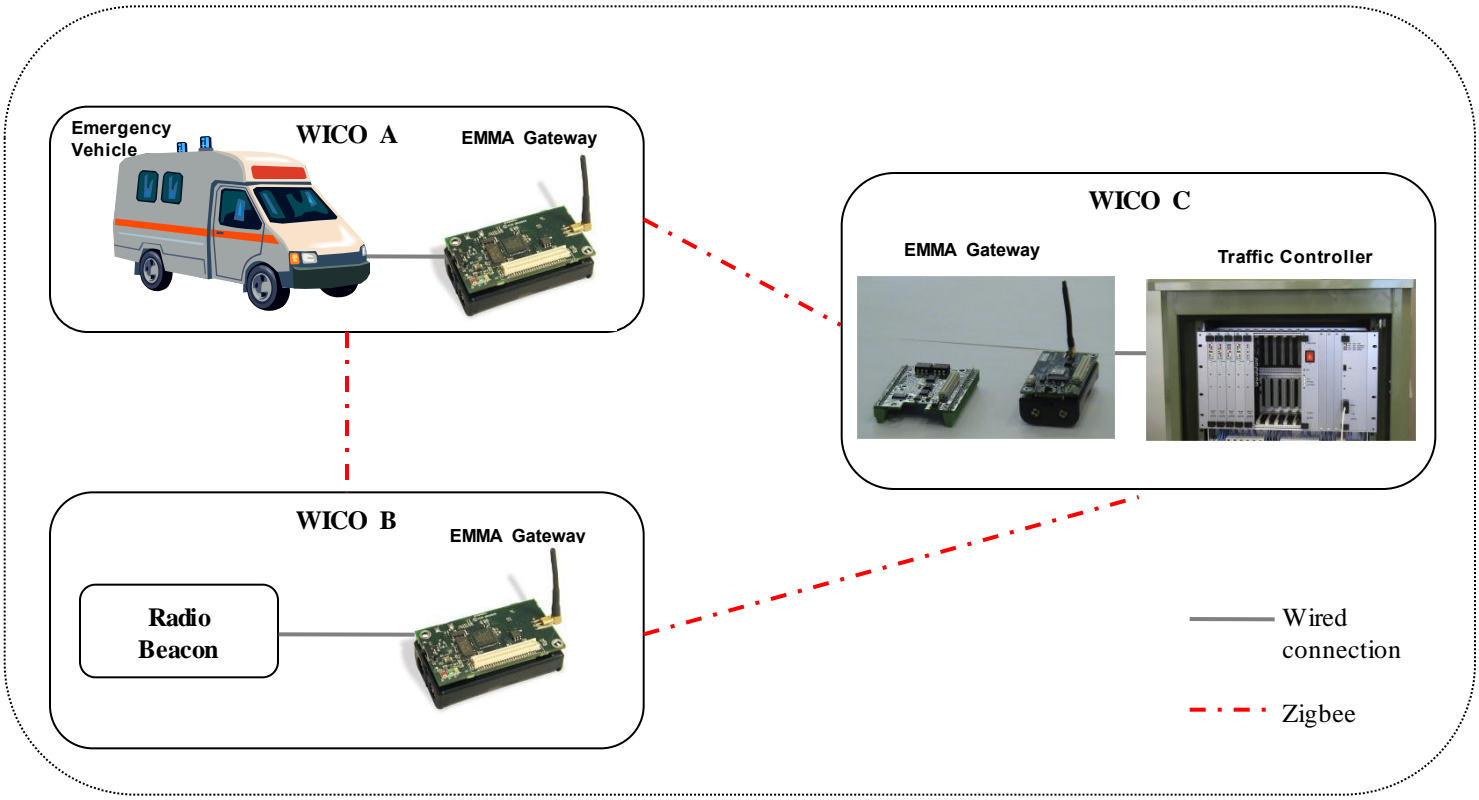
Engine WICOs – Network Architecture



Vehicle WICOs – Network Architecture

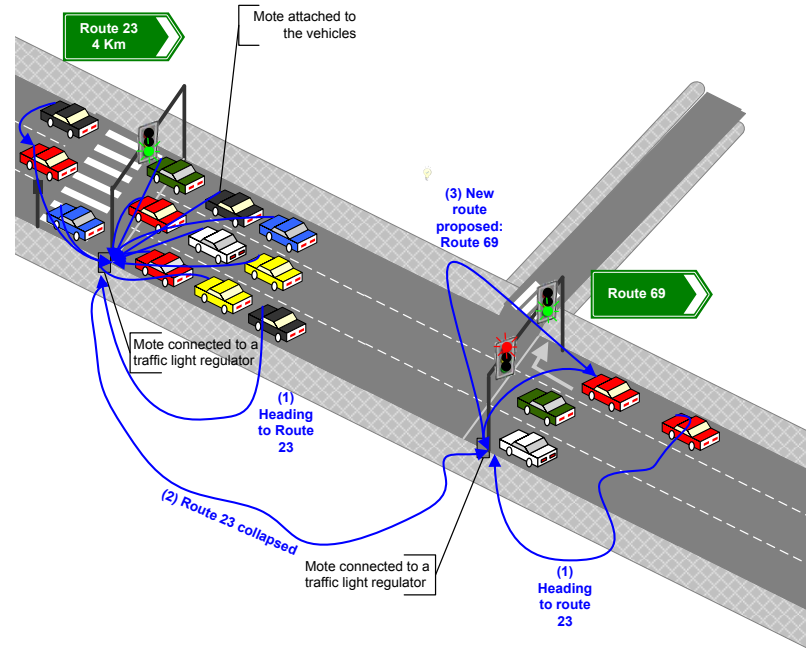
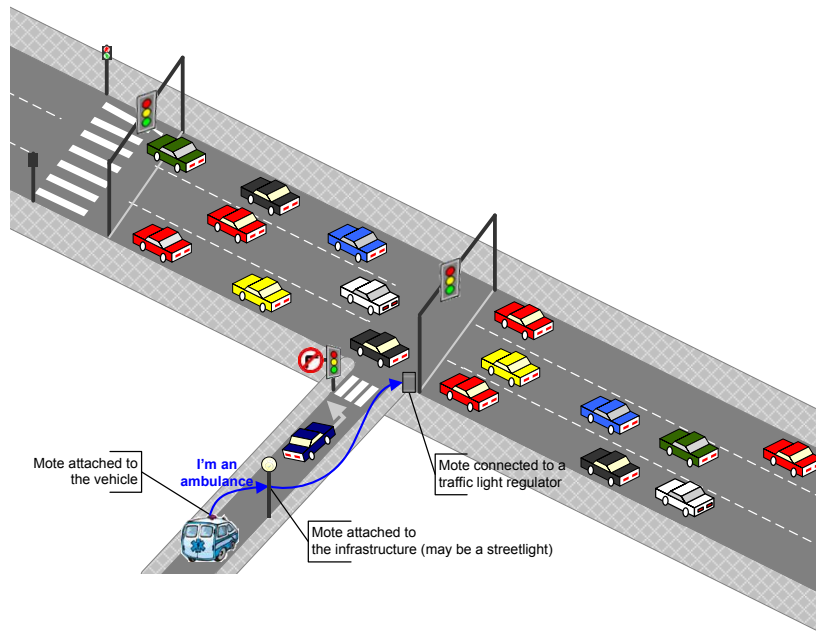


Infrastructure WICOs – Network Architecture



Validation of the infrastructure WICOs

- To give priority to emergency vehicles
- Traffic control applications





Motivation (I)

Dramatic growth of the amount of information available through computer systems and increasing need to access **relevant** information anywhere at any time



PROBLEM: current systems aim at providing transparent access to **all** available information



PROBLEM: users are accessing information on-the-move



Pervasive Computing aims at solving these problems by providing seamless and distraction-free support for user tasks with devices that are invisibly embedded into the environment

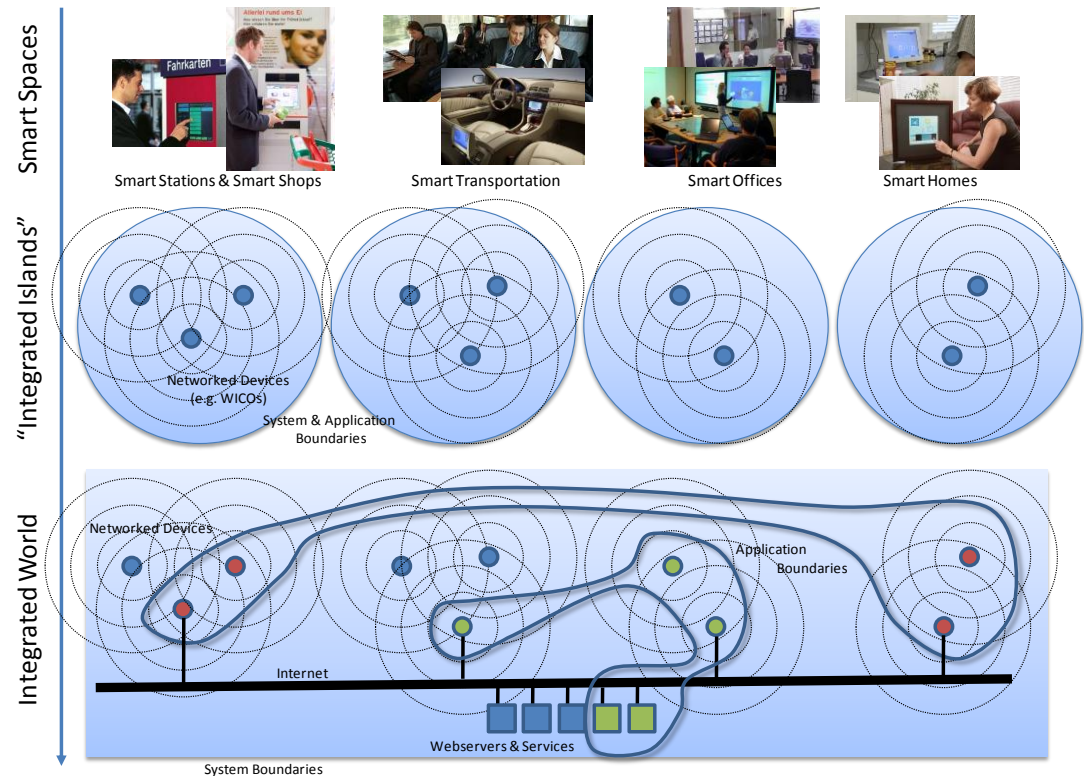


Motivation (II)

EMMA focused on local smart spaces, limited by the communication range – zigbee- and which did not consider security issues.

PECES will not only focus on a single smart space, but on one system that exposes a single and unifying image to its human users:

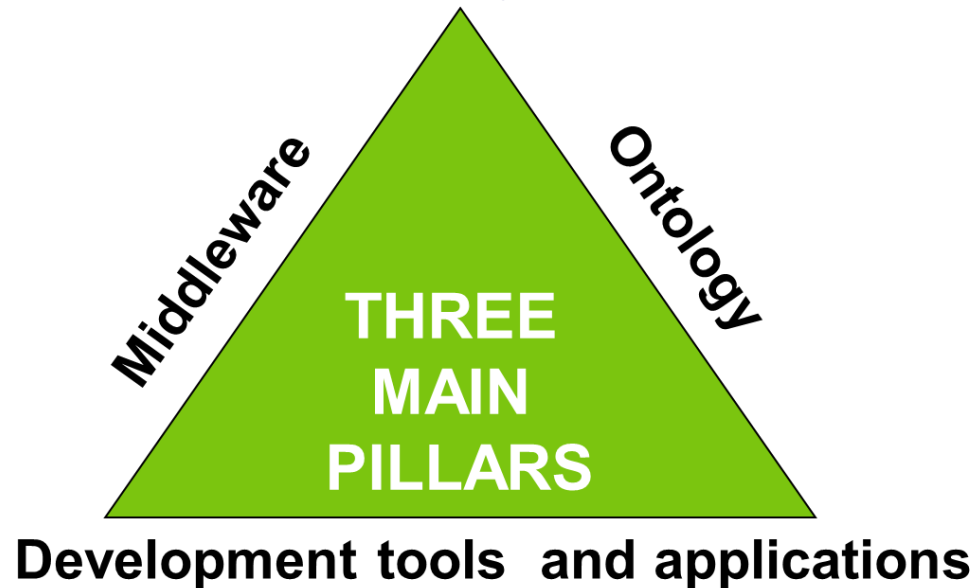
- There is cooperation among different smart spaces – being them collocated or remote-.
- The cooperation is secured.





Our goal

PECES will develop an innovative comprehensive software layer that enables the seamless cooperation of embedded devices across various smart spaces on a global scale in a context-dependent, secure and trustworthy manner.





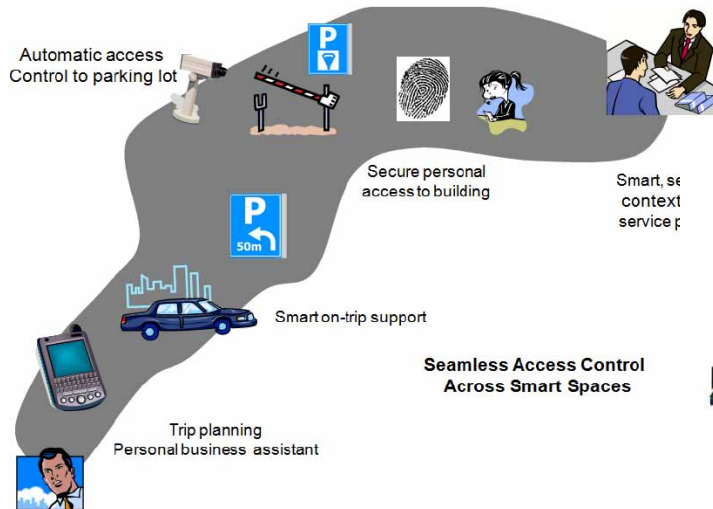
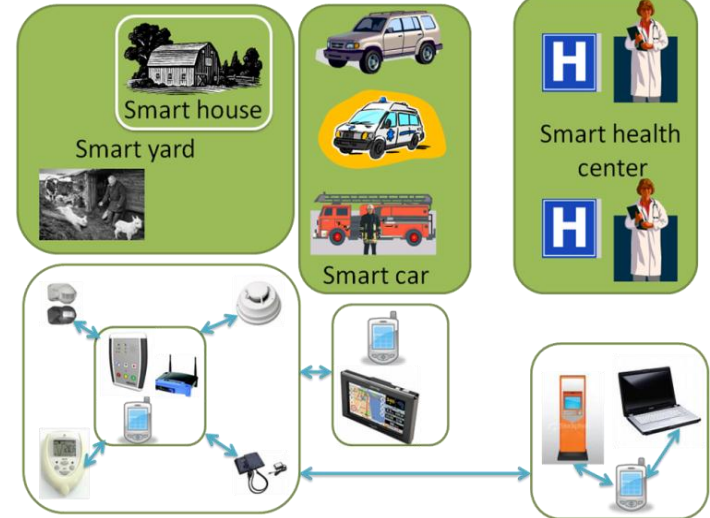
Applications

Development tools and Applications

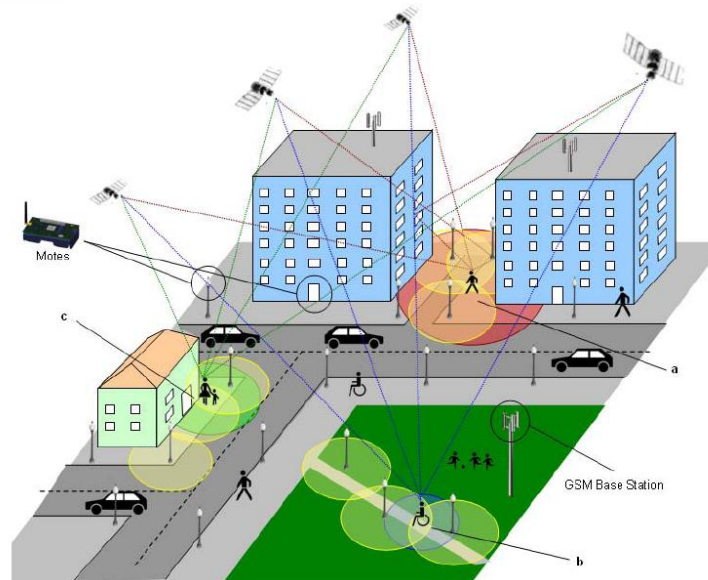
Smart Access Services

E-health Nursing Care Services

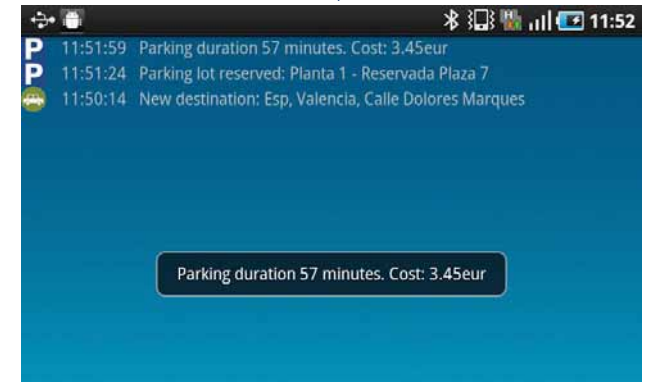
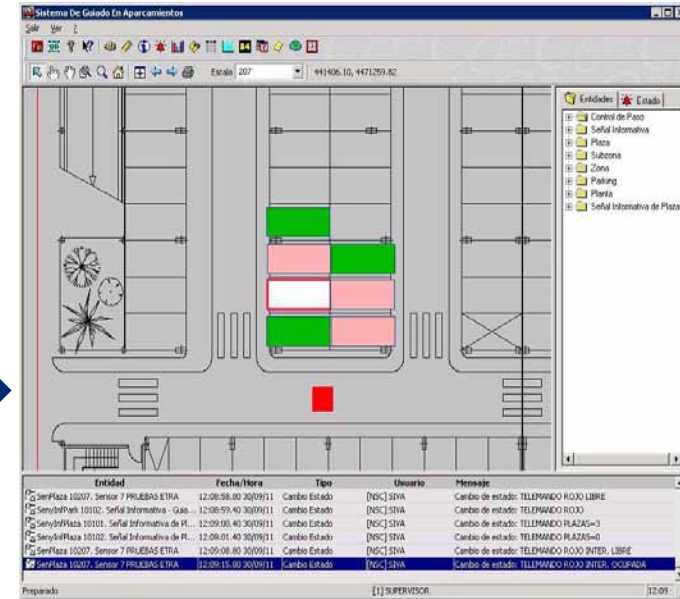
Trade Show Guide System



Seamless Access Control Across Smart Spaces



Smart Access Control



eHealth Nurse Care Service

Pervasive computing in embedded systems



Peces



Trade Show Guide Service

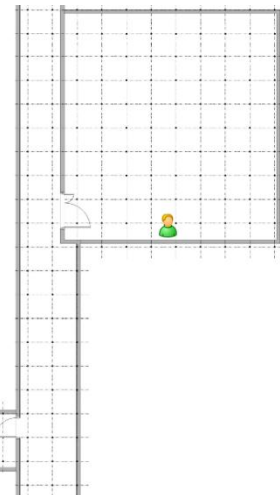
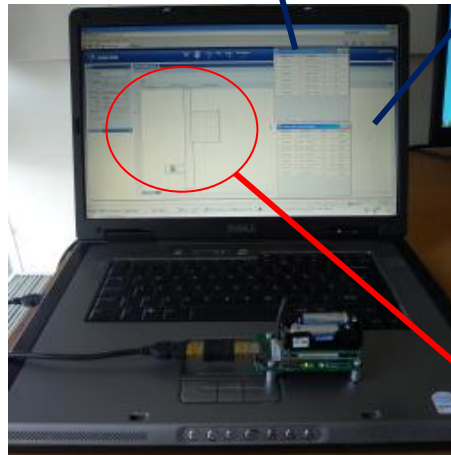
Pervasive computing in embedded systems



Peces

Booth ID	Location	Mic
Booth8	(1347, 800)	461
Booth7	(950, 800)	464
Booth2	(685, 2015)	488
Booth3	(685, 2400)	464
Booth1	(180, 2200)	489
Booth4	(950, 1550)	899
Booth5	(1347, 1550)	463

Visitors	Device ID	Location
Visitor2	7d82fbd7da3b15f3f7a4f75ac1a5fc521aa5666	(196, 2303)
Visitor1	cbf4eac1d9f133c0ddcac4e0dbedbc39ed3f4804	(1084, 1373)





Any Question?

3rd PECES Project Workshop on Pervasive Computing and Cooperative Environments in a Global Context

22nd November 2011 Hotel Mercure, Lisbon, Portugal

The 3rd PECES project workshop will be take place in the Mercure Hotel, Lisbon, Portugal on 22nd November 2011 as part of 5th International Conference on Mobile Ubiquitous Computing, Systems, Services and Technologies (UBICOMM2011) Conference. The PECES project is committed to develop an innovative software layer that enables the seamless cooperation of embedded devices across various smart spaces on a global scale in a context-dependent, secure and trustworthy manner.

Agenda

- 10:30 – 11:00 **Welcome and Introduction to PECES** (P. Rodriguez, ETRA R+D, Spain)
- 11:00 – 11:45 **Smart Space Application Building Blocks** (M. Handte, University of Duisburg-Essen, Germany)
- 11:45 – 12:15 **Tools for Development of Co-operative Smart Spaces** (K. Selvarajah, Newcastle University, UK)
- 13:45 - 14:45 **TUTORIAL: How to create a smart space using PECES development tools** (A. Zambrano, ETRA R+D, Spain)
- 14:45 – 15:30 **PECES Application Demonstrations** (A. Zambrano, ETRA R+D, Spain)
- 15:45 – 16:10 **The CONET Project** (P. Marron, University of Duisburg-Essen, Germany)
- 16:10 – 16:35 **The PLANET Project** (P. Marron, University of Duisburg-Essen, Germany)
- 16:35 – 17:00 **The AGILE Project** (P. Rodriguez, ETRA R+D, Spain)
- 17:00 – 17.25 **Passive vs Active Measurement: the role of smart sensors** (Z. Rak, FrontEndArt, Hungary)

Registration: Please visit <http://www.iaria.org/conferences2011/ProgramUBICOMM11.html>

PECES Project Information: Please visit <http://www.ict-peces.eu>

● **Thank you!**

● **For more information:**

- www.ict-peces.eu
- prodriguez.etra-id@grupoetra.com

