Expression of Interest

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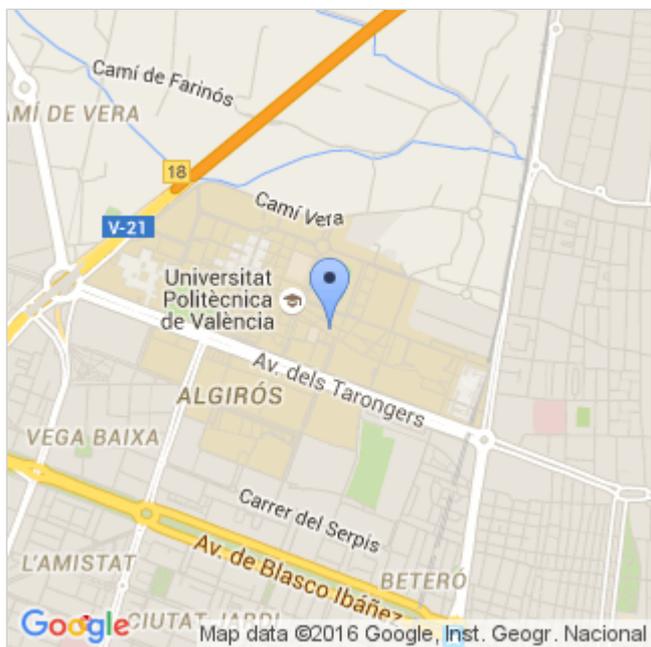
UNIVERSITAT POLITÈCNICA DE VALÈNCIA

Contact Person/Scientist in Charge

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Universitat Politècnica de València (UPV)

Department / Institute / Centre

- **Name:** Research Center on Software Production Methods (ProS) - Universitat Politécnica de València
- **Address:** Campus de Vera; Camino de Vera, s/n; Valencia (46022)
- **Province:** Valencia

Research Area

- Information Science and Engineering (ENG)

Brief description of the institution:

Universitat Politècnica de València (UPV) is the single Spanish Technical University that features in the main University world rankings. It is within the top 5 Spanish Universities with the highest revenue from both public research and knowledge transfer activities, and a national leader in patent license income and start up creation. Constituted in 1971, it comprises nearly 30.000 students, over 2500 academics, and 17 university research centres of excellence.

UPV has a relevant experience in the participation in international research programmes, with over 100 FP7 projects and 40 H2020 projects in the period 2014-2015. UPV researchers are also actively involved all H2020 life program stages, from workprogramme drafting discussions, to project coordination. It is also taking part in several major partnering initiatives (JTIs, PPPs, KICs…).

Brief description of the Centre/Research Group (including URL if applicable):

Universitat Politècnica de València (UPV) www.upv.es is the single Spanish Technical University that features in the main University world rankings. It is within the top 5 Spanish Universities with the highest revenue from both public research and knowledge transfer activities, and a national leader in patent license income and start up creation.

PROS Research Centre www.pros.upv.es (Research Centre on Software Production Methods), is a Research Institute from the UPV created in 2008 by lecturers and researchers with more than 25 years of research experience. At PROS Centre more than 50 researchers work in the study and creation of new processes, methods and strategies in order to support the software production process from a rigorous, reliable and industrial-oriented perspective.

The PROS research areas are: Software Testing and Quality, Model-driven development (MDD) and automatic code generation, Human-computer Interaction, Method Engineering, Organizational Modelling and Requirements Engineering, , Ambient Intelligence and Genomic Information Systems.

PROS major equipment for research experimentation include:

-Computation cluster for automatic software testing

-Cyber-physical Laboratory: Smart Devices to develop and prototype Smart Cities/Buildings

-Autonomic Laboratory: Smart Devices to develop and prototype highly dynamic scenarios, including Autonomous Vehicles (drones)

-Genomic databases server

Project description:

Design of Self-adaptive systems involving the human

The main objective of this project is to provide solutions within the scope of the Software Engineering field (methods, techniques and tools) to allow the systematic design and development of software systems with autonomous computation capabilities involving human beings. It will provide solutions that allow software engineers to face more efficiently and effective the activities that arise during the construction of such systems, focusing on reaching the following specific objectives: 1) Involving human beings within the "control loop" of these systems so they can participate taking adaptation decisions, maximizing the system autonomy and avoiding intrusive and annoying systems. 2) Designing a generic, but also personalized and configurable, adaptation framework inspired in the "control theory" that implements the necessary

mechanisms to endow the system with autonomous computing capabilities and to support and monitor the interaction with human beings. 3) Defining a method for the development of these systems involving human beings and systematizing as much as possible the software production process.

The intended results of this project consist of methods, tools, and techniques to improve the design and development of autonomous systems where human beings participates in the different stages of the development process. The results will be validated by means of prototypes developed within the scope of the Smart Buildings and Autonomous Vehicles areas, and will be applied in real scenarios such as Valencia Ciudad Inteligente (VLCi).

Applications

Curriculum vitae and motivation (before end of june)