EXPRESSION OF INTEREST FOR A HORIZON 2020 PROJECT

Title of the targeted call for proposals and Topic of interest:

Horizon 2020 Green Deal Call
Topic: LC-GD-2-2-2020

Contact details

Country	FRANCE
Name of the organisation	Aix-Marseille University (AMU)
Laboratory	Laboratory of Information and Systems
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Short description of AMU:

Aix-Marseille University (AMU) was created in 2012, resulting from the merger of the University of Provence, the University of the Mediterranean and Paul Cézanne University. It has more than 78,000 students including 10,000 international students, 7,680 faculty and staff members, 12 doctoral schools and nearly 3,300 PhD students. AMU is the coordinator of the Erasmus + European University Alliance "CIVIS". AMU has been involved in more than 100 FP7 projects and until now 102 H2020 projects.

Laboratory involved:

The Laboratory of Information and Systems (LIS CNRS 7020) premises are located on the university campus of Saint-Jérôme and Luminy in Marseille and on the campus of the University of Toulon. It comprises more than 375 members: 190 tenure researchers and professors, about 125 doctoral students and 40 post-docs and 20 technical staff. LIS has a strong disciplinary identity, structured within four departments, and focused on the fundamental and applied activities in the fields of computer science, automation, signal and image. Among the four departments, the research activities in department of System Analysis and Automatic Control (Pole ACS) concern the fundamental theories and applications of system modeling, diagnosis, prognosis, and control. Especially, a series of energy systems, such as fuel cell systems, hybrid electric vehicles, micro-grids, have been focused on by this department during last years.

Areas of potential contribution:

The LIS lab has been working on modeling, control and management of renewable energy systems. Especially, the activities related to hydrogen fuel cell systems and electrolysers have become important parts of LIS. For LC-GD-2-2-2020 in area 2, the potential contributions could be:

1. Modeling of high power scale electrolysers, considering practical operating conditions and various applications.
2. Energy management of renewables and electrolysers hybrid systems.
3. Demand side management.
4. System reliability enhancement via fault diagnosis and fault tolerance control.

Involved persons:

Zhongliang Li: received the bachelor's and master's degrees in electrical engineering from Tsinghua University, Beijing, China, in 2009 and 2011, respectively. He received the PhD degree in automation from Aix-Marseille University in September 2014. From 2014 to 2016, he was a Postdoctoral Research Associate with labs FEMTO-ST (UMR CNRS 6174) and FCLAB (CNRS 3539), Belfort, France. Since 2016, he has been an Associate Professor of Aix-Marseille University with LIS (UMR CNRS 7020) lab. His research interests include data-driven modelling, control, diagnosis and prognosis with applications to fuel cell systems, hybrid renewable systems, electric vehicles, and other energy systems.

Rachid Outbib: received his PhD degree in applied mathematics in 1994 and his HDR in Automatics control in 1998, respectively from University of Metz and University of Amiens (France). He was a full professor at the University of Technology at Belfort (France), from 2003 to 2006. Since 2007 he is a full professor at the University of Aix-Marseille. He is the head of the ACS (Analysis and Control of Systems) research pole of LIS laboratory. His main research interests concern non-linear systems methods with applications to fluid power, automotive and energetic systems.