



euRathlon/ARCAS Workshop and Summer School 2014

with the support of the Spanish Society for Research and Development in Robotics



Date: 15- 18 June, 2014

Venue: Center for Advanced Aerospace Technologies_(CATEC), Parque Tecnológico Aerópolis, Calle Wilbur y Orville Wright, Seville, Spain.



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the European Union



FP7 Challenge 2 -
Cognitive Systems
and Robotics

Agenda

Sunday, 15th June 2014

- 8.15 **Bus Departing from the Hotel of the Participants**
- 8.30 **Bus Departing from the Hotel of the Invited Speakers and Project Partners**
- 8.50 **Registration of Participants at Workshop and Summer School Venue**
- 09.00 – 9.15 **Opening**
Welcome by the Workshop and Summer School Organizers
- 9.15 – 10.15 **Invited Speaker**
Aerial robotics
Prof. Dr. Aníbal Ollero
University of Seville and FADA-CATEC
- 10:15 – 11:00 **Aerial Manipulation Demonstration**
- 11:00 – 11:30 *Coffee break*
- 11:30 – 12:00 **Presentation of the Summer School Challenge**
Building the teams and introduction to the robotics infrastructure
- 12:00 – 13:00 **Hands on experience**
Practical session: UAV and UGV navigation
- 13:00 – 14:30 *Lunch*
- 14.30 – 16.30 **Hands on experience**
Practical session: UAV and UGV navigation
- 16:30 – 18:00 **Workshop presentations (first session)**
- 18:00 *Bus back to Seville*

Monday, 16th June 2014

- 8.15 **Bus Departing from the Hotel of the Participants**
- 8.30 **Bus Departing from the Hotel of the Invited Speakers and Project Partners**
- 09.00 – 11:00 **Hands on experience**
Practical session: UAV aerial detection and UGV planning
- 11.00 – 11.30 *Coffee break*
- 11.30 – 13.00 **Hands on experience**
Practical session: UAV aerial detection and UGV planning
- 13:00 – 14:30 *Lunch*
- 14:30 – 15:30 **Invited Speaker**
Dr. Thomas B. Curtin
Institute for Adaptive Systems, Arlington (USA)
- 15:30 – 17:00 **Workshop presentations (last session)**
- 17:00 – 17:45 **Multi-vehicle Demonstration**
- 18:00 *Bus back to Seville*
- 20:00 – 21:00 **Visit to Seville downtown**

Tuesday, 17th June 2014

- 8.15 **Bus Departing from the Hotel of the Participants**
- 8.30 **Bus Departing from the Hotel of the Invited Speakers and Project Partners**
- 09.00 – 11:00 **Hands on experience**
Practical session (Challenge preparation: UGV guidance to multiple targets aided by the UAV aerial overview)
- 11.00 – 11.30 *Coffee break*
- 11.30 – 13.00 **Hands on experience**
Practical session (Challenge preparation: UGV guidance to multiple targets aided by the UAV aerial overview)
- 13:00 – 14:30 *Lunch*
- 14:30 – 15:30 **Invited Speaker**
Underwater robotics
Prof. Dr. Marc Carreras
University of Girona and Underwater Robotics Research Center (CIRS)
- 15:30 – 16:15 **Presentation of euRathlon 2015 competition**
Prof. Dr. Alan Winfield
University of the West of England
- 16.30 – 18:00 **Preparation of Challenge Demonstrations**
- 18:00 *Bus back to Seville*

Wednesday, 18th June 2014

- 8.15 **Bus Departing from the Hotel of the Invited Speakers and Project Partners**
- 8.30 **Bus Departing from the Hotel of the Participants**
- 09.30 – 10:30 **Scoring criteria for euRathlon competition of underwater robots**
Prof. Dr. Yvan Petillot
Heriot-Watt University
- Presentation of the demonstration of underwater robots**
Prof. Dr. Marc Carreras et al
University of Girona and Underwater Robotics Research Center (CIRS)
- 10.30 – 11:30 **Demonstration**
Live demonstration of underwater robots
Prof. Dr. Marc Carreras et al
University of Girona and Underwater Robotics Research Center (CIRS)
- 11.30 – 12.00 *Back to CATEC*
- 12.00 – 13.00 **Preparation of Challenge Demonstrations**
- 13.00 – 14.30 *Lunch*
- 14:30 – 17:30 **Challenge Demonstrations and Poster Session**
- 17:30 – 18:00 **Workshop and Summer School Closing**
- 18:00 *Bus back to Seville*
- 20:00 – 22:00 **Banquet**
The venue will be announced during the workshop

Sunday, 15th June 2014 16:30-18:10

16:30-16:40	A. Santamaria-Navarro (Universitat Politècnica de Catalunya) - Hierarchical Task Control for Aerial Inspection
16:40-16:50	J. M. Díaz-Báñez, E. Caraballo, I. Maza, A. Ollero (University of Seville) - On high-quality communication in cooperative MUAV's systems.
16:50-17:00	A. Catena, C.M. Melita, G. Muscato (Università degli studi di Catania) – UAS for Volcanoes: the VOLCAN project.
17:00-17:10	M. Schwarzbach, M. Laiacker (DLR) - Aerial Docking and Water Sampling using a Helicopter UAV.
17:10-17:20	G. Micconi, J. Aleotti, S. Caselli (University of Parma) - PSO-Based Automatic Object Registration for Interactive Augmented Reality.
17:20-17:30	P. Koch, S. Lacroix (CNRS-LAAS) - Managing environment models in multi-robot teams.
17:30-17:40	E. García-Fidalgo, A. Ortiz (University of the Balearic Islands) - Indexing Invariant Features for Topological Mapping and Localization.
17:40-17:50	A. González-Sieira (University of Santiago de Compostela) - An Adaptive Multi-resolution State Lattice Approach for Motion Planning with Uncertainty.
17:50-18:00	G. Juliana, A. Villalba, H. Ramos (Polytechnic University of Madrid) - Development of a multi-purpose, modular, low cost robotic arm for education and unmanned platforms.
18:00-18:10	A. Muñoz, G. Velasco (FuVe, Future Vehicles and Entrepreneurs) - Paper from Future Vehicle and Entrepreneurs Association.

Monday, 16th June 2014 15:30-17:00

15:30-15:40	N. Tsiogkas, D. M. Lane (Heriot Watt University) - Multi-robot semantic task
15:40-15:50	R. Nagel, C. Bird (University of the West of England) - Low-Cost Vehicle Collaboration and Underwater Manipulation on an Inspection Class AUV.
15:50-16:00	E. Fernández-Perdomo, P. López, A. Martínez, D. Morales, D. Nieto, J. Pérez, D. Torres, A. Sarrionandia de León, L. Sánchez, J. Cabrera - Layered Software Architecture for AUV.
16:00-16:10	G. W. Frost, D. M. Lane (Heriot Watt University) - Evaluation of Q-learning for Search and Inspect Missions Using Underwater Vehicles
16:10-16:20	V. Pitkänen, A. Tikanmäki, J. Röning (University of Oulu) - Force Controller for Modular Wheeled Robots Using Spatial Vector Algebra
16:20-16:30	J. Maurer, G. Steinbauer (Graz University of Technology) - Risk-Aware Exploration.
16:30-16:40	V. Plaza, A. Mandow, A. García-Cerezo (University of Málaga) – Local Semantic Map based on 3D data for navigability
16:40-16:50	J. Cayero, J. Cugueró, B. Morcego (Universitat Politècnica de Catalunya) - Backstepping with virtual filtered command: Application to a 2D autonomous Vehicle
16:50-17:00	M. Kauppinen, J. Röning (University of Oulu) - Temperature Dependent Neural Network Estimation of a Li-Ion Battery State-of-Charge