

Research group: Joint Research Unit (CATEC-AICIA)
Head of group: Prof. Dr.-Ing. Anibal Ollero

Contact Information

Postal address: Parque Tecnológico y Aeronáutico de Andalucía
C/ Wilbur y Orville Wright 17-19-21
41309 La Rinconada, Sevilla
Spain

Street address: Parque Tecnológico y Aeronáutico de Andalucía
C/ Wilbur y Orville Wright 17-19-21 41309, La Rinconada, Sevilla, Spain

Tel.: +34 954179 002

Fax.: +34 954115 193

Email: aollero@catec.aero

URL: <http://www.catec.aero>

Abstract:

The Joint Research Unit CATEC-AICIA was created following the agreement of the Andalusian Foundation for Aerospace Development (FADA) and the Association for Research and Industrial Development of Andalusia (AICIA) signed June 2008. CATECAICIA combines the strong research capacity and expertise in European projects of AICIA with the very good facilities, management, technology development and industrial expertise of CATEC (more information at www.catec.aero). This Joint Research Unit has an active participation in projects related to unmanned systems.

Detailed research information:

The Andalusian Foundation for Aerospace Development (FADA) is a non-profit organization that takes care of the management and development of the Centre for Advanced Aerospace Technologies (CATEC). FADA-CATEC has 3.000 m² for laboratories and workshops, and 1.500 m² for offices and is also operating a facility for UAV experimentation. The main goal of CATEC are: to support industry in research and development activities in coordination with universities and other research centres, development of own projects and results exploitation, development of networking projects with other research centres at national and international level and Management of novel technologies (protection and industrialization). CATEC attends the R&D and innovation demand of about 150 industrial companies and has obtained a grant of 21 Million Euros for R&D infrastructure and equipment. The Avionics and UAVs CATEC Units are involved in aerial unmanned systems. The former is devoted to the development of embedded and on-board hardware and software that supports high criticality levels, as well as new functionalities in: navigation and control systems sense & avoid technologies, multivehicle coordination, and communication methods. The UAV unit has fleet of heterogeneous UAVs including: 6 fixed wing UAVs and 6 autonomous helicopters with different characteristics and payloads and an indoor tested with 10 quadrotors for multi-vehicle indoor experimentation.



AICIA is a public interest non-profit Association linked to the University of Seville with 43 industrial companies as associates. Its objectives are to boost, guide and promote industrial research and the technology transfer. The GRVC group has 45 researchers and engineers with strong expertise on autonomous and robotics systems, cooperative perception and distributed systems including sensor networks. The group participated in 45 projects in the last 5 years, and has a long tradition in the Framework Programmes including 4 projects of the FP4 (DEDICS, INFLAME, FAMIMO, ROSPIR), 3 of the FP5 (SPREAD, EUFIRELAB, COMETS), 3 of the FP6 (AWARE, URUS, EMBEDDED WISENTS) and one NoE of FP7 (CONET). The group was the Scientific and Technical Coordinator of the COMETS IST

project on Real-time coordination and control of multiple heterogeneous unmanned aerial vehicles (UAV), the first project in Europe demonstrating experimentally the cooperation of multiple UAVs and its application to forest fires. In Embedded Wisents the group coordinated the Work package on Road mapping and led the research studies From June 2006 until August 31, 2009 the group has been the coordinator of the consortium of the successful AWARE IST project that has designed, developed and validated in field experiments a platform providing the middleware and the functionalities required for the cooperation of UAVs with ground sensor-actuator wireless networks, including joint load transportation by means of three coupled helicopters, surveillance, fire detection and localisation, fire monitoring, fire extinguishing, and firemen tracking.. In the URUS (Ubiquitous Networking Robotics in Urban Settings) project, the objective is to develop a network of robots, intelligent sensors, devices and communications in order to improve life quality in urban areas. The group is also the Associated Coordinator of CONET FP7 NoE. Other recent projects have been the Spanish AEROSSENS, on the integration of aerial fixed wing UAVs and Unmanned Ground Vehicles with WSNs, CROMAT on the cooperation of aerial and ground robots HERO and ROMEO, PROTECSENS on fire fighters protection based on WSNs with mobile nodes, ATLANTIDA on air traffic management with demonstrations by using UAVs, SADCON on the application of UAVs and WSNs to environment protection, and SIRE on network robot systems. The researchers of the GRVC group are authors of 120 publications in the last 5 years, including 6 books.



Ground robots: HERO and ROMEO