

Department: Electrical Engineering

Group Name: Control Engineering

Acronym: ICON

Group Coordinator: Gil Martínez, Montserrat

ANEP Area(s): Electrical, Electronic and Automatic Engineering; Technology Transfer

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Department Report: 17/04/2015

| RESEARCH TEAM | Number of researchers: 6 | |
|----------------------------------|--------------------------|-----------------------|
| Researcher | Department | Professional category |
| Gil Martínez, Montserrat | Electrical Engineering | TP |
| Elvira Izurrategui, Carlos | Electrical Engineering | TCP |
| Miruri Sáenz, Juan Martín | Electrical Engineering | Collaborator |
| Nájera Canal, Silvano | Electrical Engineering | Interim Contract |
| Rico Azagra, Javier | Electrical Engineering | Interim Contract |
| Zorzano Martínez, Luis Francisco | Electrical Engineering | CEU |

| COLLABORATORS | Nº of collaborators: 3 | |
|--------------------------|------------------------|-----------------------|
| Collaborators | Department | Professional category |
| Del Campo Pedrosa, Rocío | Electrical Engineering | |
| Gallarta Sáenz, David | Electrical Engineering | |
| Villota Miranda, David | Electrical Engineering | |





Lines of research

Control at plant and process level in wastewater treatment plants.

Autonomous guidance and control of unmanned aircraft.

Intelligent vector control of electrical machines.

Automatic control systems: Design of controllers in the frequency domain; multi-loop control architectures; Robust QFT control. Electronic and control technology: intelligent sensors and virtual instrumentation; low-cost micro-processed systems (hardware and software).

Scientific and technological offer

Design, configuration and assembly of low-cost multi-rotor and fixed-wing aerial systems for photogrammetry and inspection.

Development of flight controllers (autopilots) depending on the application needs of the drone.

Unmanned vehicle positioning and guidance systems.

Design and control of wastewater treatment plants aimed at environmental, economic and social sustainability. Optimisation of treatment processes in WWTPs, reducing the consumption of reagents and improving energy efficiency.

Control of steam compression refrigeration systems.

Modelling, simulation and control applied to power generation systems and electrical machines.

Measurement, supervision and control systems for industrial and agrifood processes.

Automation and Industry Solutions 4.0. IOT (Internet of Things). Installation, configuration and administration of hardware resources dedicated to network infrastructure and servers.

Learning environments and knowledge management on the web using GNU-licensed tools.

National and international relations

Prof. Mario García-Sanz. EECS Department, Control and Energy Systems Center at Case Western Reserve University, Cleveland, Ohio, United States of America.

Prof. María Tomás-Rodríguez. School of Engineering and Mathematical Sciences, City University of London, London, United Kingdom.

Prof. Bengt Carlsson. Division of Systems and Control Department of Information Technology. Uppsala University. Uppsala. Sweden.

Relationships at the national level

Comité Español de Automática, CEA. Control Engineering Group.

Public University of Navarra. Department of Automation and Computing. Intelligent systems and energy group. Dr. J. Elso.

University of Seville. Department of Systems Engineering and Automation. Automation and Robotics Group. Dr. M. G. Ortega.

Centre for Scientific Studies and Research (CEIT) of Guipúzcoa. Department of Environmental Engineering. Dr. I.Irízar and Dr. E. Ayesa.

Autonomous University of Barcelona. Department of Telecommunications and Systems Engineering. Advanced control and automation group. Dr. R. Vilanova.

University Institute of Engineering Research of Aragon (I3A). Power electronics and microelectronics group (GEPM).

Polytechnic University of Catalonia. Dept. of Systems Engineering, Automation and Industrial Information Technology. Institute for the Organisation and Control of Industrial Systems. Dr. R. Costa, Dr. R. Griñó, Dr. E. Fossas.

University of Cantabria. TEISA Department. Systems and Automation Engineering Group. Dr. J.R. Llata, Dr. J.P. Oria.

