

Membership of scientific and technical bodies

In order to give support to the various R&D activities, the members of the IOC belong to the following scientific societies:

- ADINGOR
- American Production and Inventory Control Society (APICS)
- ASME
- Association of Computing Technicians (ATI)
- Spanish Robotics Association (AER)
- Catalan Artificial Intelligence Association (ACIA)
- Collectives of Studies and Research in Control and Automation (CERCA)
- Spanish Automation Committee (CEA-IFAC)
- Coordinating Committee on Manufacturing and Instrumentation of IFAC
- European Mathematical Society
- Institute for Operational Research and Management Science (INFORMS)
- Institute of Electrical and Electronic Engineers (IEEE)
- Institute of Industrial Engineers
- International Federation of Automatic Control
- International Association of Science and Technology for Development
- International Federation of Automatic Control (IFAC)
- International Linear Algebra Society (ILAS)
- Operational Research Society
- Production and Operations Management Society (POMS)
- Statistics and Operational Research Society
- Catalan Mathematics Society
- Society for Industrial and Applied Mathematics (SIAM)
- The Society for Computer Simulation Int. (SCS)

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APPLIED RESEARCH

RANGE OF SERVICES
 APPLIED RESEARCH



**Institute of Industrial and Control
 Engineering (IOC)**



TECHNICAL UNIVERSITY OF CATALONIA

The Institute of Industrial and Control Engineering (IOC) performs activities of research, innovation and technology transfer in the fields of Robotics, Control and Industrial Logistics.

Within these spheres, the IOC participates in national and European Research and Development (R&D) programmes, and promotional programmes of technological innovation in companies.

R&D Programmes

The R&D programmes in which the IOC participates are clearly oriented to the generation and application of the new technologies and management tools in companies, for which the participation or collaboration of the latter is fundamental.

These programmes of R&D and technology transfer are usually subsidised by public bodies such as the European Union, the Ministry of Education and Science and the Government of Catalonia and their dependent bodies.

In many of these projects, the participation as a partner of a university institution such as the IOC is a desirable (and sometimes necessary) condition for applying for public subsidies. Moreover, the IOC has great interest in participating actively in R&D projects within its fields of knowledge, and in recent years it has participated in numerous programmes, both national and international.

Resources for research and development

The IOC has highly-qualified research personnel for the execution of R&D tasks in the three recognised research lines in which it participates:

Name
Control
Industrial Engineering and Logistics
Robotics

In addition, it has the following research facilities:

- Library
- Computing Centre
- Robotics Laboratory
- Electronics Laboratory

Participation in projects of applied research

The following list corresponds to various research projects, both national and international, executed by the IOC or in which IOC personnel have participated:

- 2006-2007. **MATEO**. Matching technologies and opportunities. European Commission E-00917.
- 2005-2008. **Teleoperación asistida y supervisión de tareas robotizadas a través de Internet2**. CICYT DPI2005-00112.
- 2005-2007. **Diseño y equilibrado de líneas de montaje en entornos realistas**. CICYT (DPI2004-03472).
- 2005-2007. **Planificación del trabajo y de la producción con tiempo de trabajo flexible**. CICYT (DPI2004-05797).
- 2005-2006. **Tackling stereotypes: maximising the potential of women in SET (Science, Engineering and Technology)**. Projecte europeu 5è programa d'actuació estratègica per la igualtat d'oportunitats entre homes i dones.
- 2004-2007. **Diseño y control del sistema de acondicionamiento de energía eléctrica para pilas de combustible**. CICYT (DPI2004-06871-C02-02).



- 2004-2007. **Métodos y algoritmos para la prensión de objetos mediante robots: manipulación diestra y aplicaciones industriales**. CICYT (DPI2004-03104).
- 2002-2006. **SICONOS**. Modeling, simulation and control of nonsmooth dynamical systems. European Commission IST-2001-37122.
- 2002-2005. **Geometric Network Modeling and control of complex physical systems**. Comunitat Econòmica Europea.
- 2002. **ISOS**. Las diferencias salariales entre hombres y mujeres y la valoración de los puestos de trabajo. Instituto de la Mujer.
- 2001-2004. **Manipulación diestra semiautónoma y teleoperada para robótica industrial y de servicios**. CICYT (DPI2001-2202).
- 2001-2004. **Organización del tiempo de trabajo, con jornada anualizada, en la industria y en los servicios**. CICYT (DP12001-2176).
- 1999-2001. **Interacción virtual en programación asistida de robots para tareas industriales con interacción física**. CICYT (TAP99-0839).
- 1998-2000. **Diseño y construcción de una mano mecánica con capacidad de manipulación**. CICYT (TAP98-0471).
- 1997-2000. **Control no lineal de sistemas dinámicos. Aplicación a sistemas de generación, conversión y distribución de energía eléctrica**. CICYT (TAP97-0969-C03-01).
- 1997-1999. **Sistema de Percepción Modular y Reconfigurable para Robótica (SISPER)**. CYTED.
- 1997-1999. **Red Temática: Automatización Industrial Avanzada**. AECl.
- 1996-1999. **Programación automática y ejecución de tareas robotizadas de pulido y acabado de piezas**. CICYT (TAP96-0868).
- 1996-1998. **CLOCWISE: Constraint Logic Operation of Water Systems**. UE Innovation DGXIII IN0316I.
- 1996-1997. **Estudio de la Utilización de la Programación Lógica por Restricciones en el Control de Operaciones en Sistemas de Distribución de Agua**. CICYT (TAP96-1849-CE).
- 1995-1998. **Determinación de secuencias regulares en líneas de producción y montaje mixtas**. CICYT (TAP95-0420).
- 1994-1997. **Sistemas Avanzados de Control no Lineal. Análisis Comparativo de Técnicas Avanzadas de Control no Lineal. Aplicaciones a Sistemas de Generación de Energía Eléctrica y a Manipuladores Mecánicos**. CICYT (TAP94-0552-C03-01).
- 1994-1996. **Proyecto SIRIUS: Parallel Computing Focus to Strengthen Production Programming & Planing in Food Industries**. Programa PACOS (Parallel Computing Initiative Spain). Comisión de las Comunidades Europeas.
- 1994-1995. **European Robotics NETwork (ERNET)**. ESPRIT BRA 7274.
- 1992-1994. **B-Learn II: Behavioural Learning: Combining Sensing and Action**. ESPRIT BRA 7274.