IST 37652

**ist** information society technologies

Hard Real-time CORBA

There is a need of a **research programme** in the enhancement of CORBA specifications to build **distributed control systems** that have real-time requirements with **hard timing constraints**.

In **distributed control applications**, a distributed information system closes a **control loop** to keep a target system in a controlled state. As controller complexity grows, there is a strong need of having good architectural support for the construction of **modular**, **software-intensive**, **real-time** applications.

Complexity is a real engineering challenge and **distributed object technology** has proved useful in dealing with this problem. One of the leading technologies in this field is the **object request brokering** model proposed by the **CORBA** specification from the Object Management Group.

But, **timing is critical** in control applications due to dynamic effects that can be derived from **delays** or **jitter** due to the software/hardware path. While present CORBA specifications do address real-time issues they mostly deal with resource control for soft real-time systems. This is **not enough** for certain types of distributed control systems.
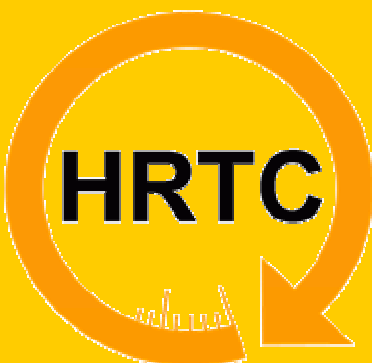
The **IST HRTC Project** is a first step in this research programme. It is focused on the **analysis of requirements** in CORBA-based distributed control systems and the elaboration of **theory** and **methodology** for the development of **hard-real time CORBA** applications. The requirements will be developed based on available experience and on two project-specific experiments in **robot control** and **process control**.

Control

Object Request Broker

Sensor

Actuator

Physical Plant
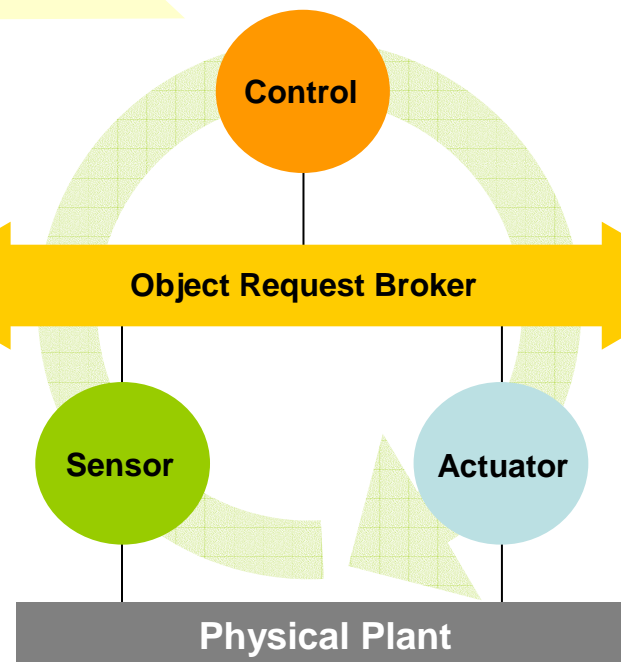
Project Partners:

Polytechnic University of Madrid   Lund University
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www.hardrealtimecorba.org