



Shipbuilding and leisure boatbuilding



## CONTREDO

### IMPROVING UNDERSTANDING OF DYNAMICAL SYSTEM INTERVALS

The CONTREDO project is aimed at offering a tool based on the intervals for processing dynamical systems. The tool will enable processing of dynamical systems whose initial conditions and parameters with the constrained uncertainties will be known and which may be defined not only by a differential equation but also algebraic constraints.

This language and tool will be deployed using the IBEX interval library and validated over several applications. The first of these applications concerns undersea robotics for automated sail control of yachts or for the evolution of robot teams in the marine environment.

The second application relates to surgical robotics, namely automating needle penetration of blood vessels. The third and final application concerns the robustness and accuracy of missile trajectories.

#### Partners

##### COM\_PROJECTS\_CATEGORIE\_PARTNER\_ENTREPRISES

MBDA, Le Plessis-Robinson

#### Research centers

Université de Montpellier, UMR5506,  
Laboratoire d'Informatique de Robotique et  
de Microélectronique de Montpellier,  
Montpellier [Project Developer]  
Ecole Centrale de Nantes UMR6597,  
IRCCyN Nantes  
ENPC UMR8049, Laboratoire  
d'Informatique GASPARD-Monge (LIGM),  
Marne-la-Vallée  
ENSTA Bretagne, UMR6285, Lab-STICC,  
Brest  
ENSTA ParisTech, U2IS, Palaiseau  
IMT Atlantique Bretagne-Pays de la Loire,  
Armines, Nantes  
Université Grenoble Alpes, UMR5272,  
Sciences pour la conception, l'Optimisation  
et la Production (G-SCOP), Grenoble

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