Annex A

n. 1 research grant for a period of 12 months

Venue of the research activity: Dipartimento di Ingegneria Elettrica e dell'Informazione

Scientific sector: ING-INF / 04 (Automatica)

Research title: "Cooperative navigation and control of teams of autonomous underwater vehicles"

OBJECTIVES OF RESEARCH AND PROGRAM OF ACTIVITIES

Development of a methodological framework for the study of algorithms for cooperative navigation and control of teams of autonomous underwater vehicles. By the term cooperative navigation we mean the problem of underwater vehicles to localize with respect to each other or with respect to absolute references using information from proprioceptive sensors and / or the information exchanged with the adjacent vehicles through acoustics underwater communication. The term cooperative control means the problem of coordinated control of the motion of different vehicles to perform the specific assigned tasks. The developed algorithms will have to handle the physical peculiarities of the systems under investigation in the framework of the European project WiMUST, the localization and the coordination of the movement of the vehicles of the team.
To execute the research it will be used the equipment available at the laboratory of LAI of the DIEI. The research activity will eventually be developed also in the context of interactions with other research groups Italian and foreign, possibly providing periods of activity at their venues.

PROGRAM OF THE INTERVIEW

The interview will be focused on the expertise of the applicant in the field of mobile robotics (preferably in the marine environment), localization and coordinated control of multi-robot systems, programming skills in C/C ++ and using Matlab environment. It will be required computer skills on Linux O.S., a proven experimental experiences in the field of robotics and a good knowledge of English language.

DISCIPLINES TO WHICH TO REFER FOR THE TITLES

The disciplines of the sector ING-INF/04 (Automatica).

TUTOR

Prof. Filippo Arrichiello