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INRIA Company in Sophia, Antipolis, France

Dr. Yvonne R. Masakowski,

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Keywords

Robotics, Ship Design tools, Tools for Optimized Manning, Surveillance, UUV, UAV , surveillance robotic applications

Introduction

A meeting was held at INRIA Co., Sophia Antipolis, France on 3 June 2002. The purpose of this meeting was to introduce ONRIFO to the most recent advances in research in design in adaptive robotic technology. Participants in this meeting included INRIA representatives, Senior project managers and the Scientific Director.

Summary

The visit consisted of an overview of laboratory projects and presentations.
Areas demonstrated included the following:

- Project managers provided a demonstration of the adaptive robotic system. This technology is currently under development and consists of a robotic system programmed with a perceptual processing system that affords it the capacity to discriminate features within an unknown environment. Furthermore, this system is mobile, adaptive and fully equipped with a camera The robotic system is adaptive, interacts with features in an unknown environment and has a loading capacity for lifting and moving objects that it "recognizes".

Potential Future Collaborative Areas

There are numerous potential applications for this technology including mine detection, ship design, and surveillance. Most recently, INRIA has been developing a cooperative surveillance system at their Rennes, France laboratory. They are developing a mobile and interactive surveillance system in conjunction with a blimp system linked via satellite to a mobile robot that is fully programmed with feature detection capabilities.
This mobile robotic system affords the autonomous navigation of mobile robots in an unknown environment. Linked with a communications satellite, one could begin to explore applications in tracking, surveillance of ship movements, and personnel movements, etc. At the present, there is no defense application but there is tremendous potential for future development of autonomous systems that could be utilized during the ship design process, for damage and control monitoring and crew monitoring, etc.
For example, the satellite link with the blimp extends the visual field of the mobile robot that will enhance the surveillance capabilities of this system.
Future development could extend to the development of a network of collaborative robotic agents that can interact and communicate with a central command center to provide ultimate situation awareness for military and non-military applications.

Assessment

There are five INRIA research facilities located throughout France: Paris, Sophia Antipolis, Grenoble, Nancy, and Rennes. Each of these center is a basic science research institutes that does not focus on military research applications. There is, however, potential interest in developing future applications in conjunction with the military as a means of funding future enhancements to the robotic system. Among these, there is a great deal of interest in exploring the potential for the collaborative development of the surveillance system.

The project on robotic surveillance technology, chaired by Dr. Francois Chaumette (contact details listed below) focuses on the development of a robotic/satellite linked system fitted with cameras that will detect minute features for surveillance. Potential application for monitoring ships, tracking people, visual scanning and detection, crews,

counter-terrorism, mine detection ,etc. I recommend that someone in that topic area visit this site and explore potential collaborative efforts in this regard.

Contacts

Dr. Yvonne R. Masakowski
Office of Naval Research International Field Office
223 Old Marylebone Road
London NW15th UK
Ph:+44 (0) 207 514 4942
Fax:+44 (0) 207 723 6359
email: ymasakowski@onrifo.navy.mil

Mr. Ezio Malis
INRIA Co.
2004 route des Lucioles
Sophia Antipolis, France
Phone: +33 (0) 4 92 38 77 77
Fax: +33 (0) 493 50 40

Dr. Francois Chaumette (VISTA project at INRIA Rennes)
Email: Francois.Chaumette@irisa.fr
Adresse: IRISA / INRIA Rennes
Campus de Beaulieu
35 042 Rennes-cedex, France
tél: +33 2.99.84.72.55

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