

AURIGA II

The Auriga-II mobile robot has been designed as a member of a group of robots for fire extinction tasks in the frame of the CROMAT project.

It is equipped with a small 2 DOF self-stabilized landing platform for radio controlled helicopters (employed for fire detection) and a small fire extinguisher.



THE AURIGA II MOBILE ROBOT

General characteristics:

- Dimensions: 0.7 m width, 1.2 m length, 0.96 height.
- 190 kg tracked vehicle for outdoor navigation.
- 2 DOF self-stabilized landing platform
- Powered by an on-board petrol-fed ac-generator of 4 kW.
- Locomotion system based on the skid-steering principle.
- Top speed: 0.8 m/s in straight line movement.

Control system, Communications and Sensors:

- Pentium IV industrial computer and a compact FieldPoint (cFieldPoint).
- Two resolvers for dead-reckoning.
- IMU (inertial measurement unit) with 3 accelerometers, 3 gyros and 3 magnetometers
- Differential GPS.
- IP camera.
- Ring of six ultrasonic sonars for obstacle detection / range scanner Sick LMS 200.
- Ethernet wireless access point and switch, a serial IP server and a GSM module.



Prof. Dr. Ing. Alfonso García-Cerezo

Escuela Técnica Superior de Ingenieros Industriales. Dpto de Ingeniería de Sistemas y Automática.

Plaza de El Ejido, s/n 29013 MALAGA

Email: qcerezo@ctima.uma.es <http://www.isa.uma.es/> Telf: +34 95 2132775 Fax: +34 95 2131413

CROMAT:
Air and ground mobile robots coordination

Univ. of Seville. Univ. of Málaga. Univ. of Vigo
SPAIN

The main objective of the **CROMAT** project is the development of new methods and techniques for the cooperation of aerial and ground mobile robots. It is intended to develop technologies that could be used in applications such as inspection of utilities, infrastructure and large buildings, disaster detection and monitoring (fires, floods, volcano eruptions, earthquakes), exploration, surveillance, urban safety, humanitarian demining. The project also intends to contribute to the development of aerial robotics, which is a field that will have an important advance in this decade, fuelled by the progress in Microsystems, with many new applications.

CROMAT is a coordinated project with three Subprojects that share a common Workpackage to design and develop of a new control architecture for the cooperation of aerial and ground mobile robots. The first Subproject, led by the University of Sevilla, is devoted to the development of a platform for aerial robotics based on a RC helicopter and its integration with a ground mobile robot. The second, led by the University of Malaga, deals with teleoperation and cooperation of mobile robots, and the third Subproject, led by the University of Vigo, is devoted to the development of helicopter control techniques



HERO



AURIGA I



ROMEO-4R



AURIGA II

The Robots involved in the CROMAT project