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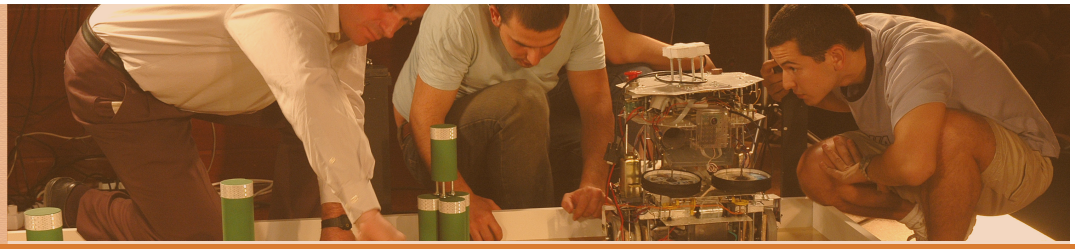


INTELLIGENT SYSTEM FOR AUTONOMOUS CONTROL IN ROBOTICS COOPERATION

TECHNOLOGY OFFER

Code

TIC_UAH_34

Application areas

- Information and Communication Technologies

Type of collaboration

- Subcontracting
- Manufacturating Agreement
- Services Agreement

Main researches

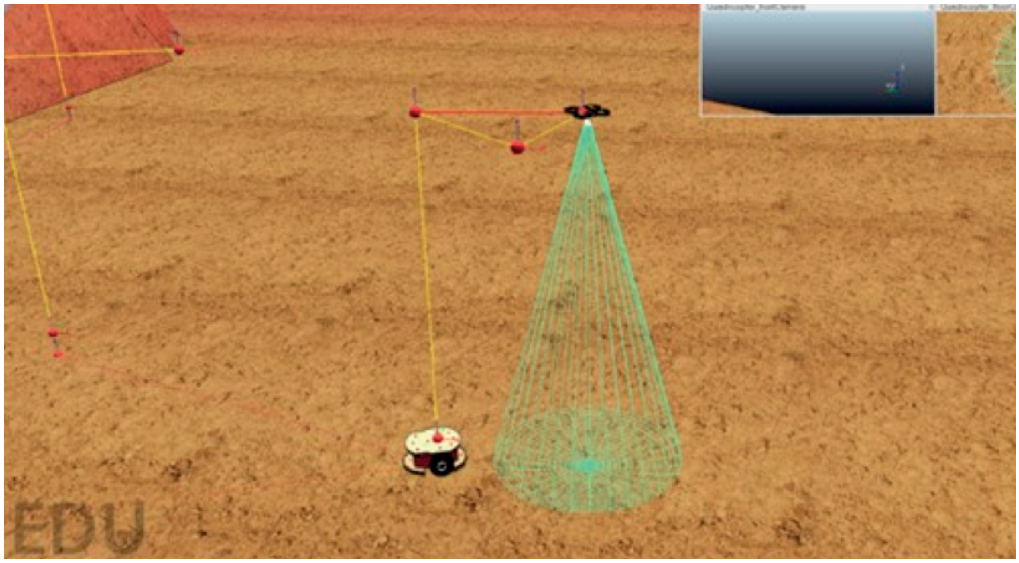
Prof. Ma Dolores Rodríguez Moreno

CONTACT

OTRI Universidad de Alcalá
Escuela Politécnica Superior
Campus Científico-Tecnológico
28805, Alcalá de Henares
(Madrid)
(+34) 91 885 45 61
otriuah@uah.es

@otriuah

OTRI Universidad de Alcalá



ABSTRACT

Over the last decade, there has been a strong scientific and industrial concern in robotic cooperation. From problems of surveillance in industrial, commercial or domestic environments, or rescue and help in catastrophic areas, till problems of efficient package delivery in companies like Amazon or DHL, require mathematical optimization algorithms that solve these problems optimally and efficiently through the deployment of cooperative robot teams.

The cooperatTive ExploRation Routing Algorithm (TERRA) is a planning system that, using artificial intelligence techniques, allows a team of robots to combine their capabilities to complete more complex tasks. For this, TERRA implements a novel robotic cooperation paradigm that offers a solution to the problems mentioned in the previous paragraph. This exploration paradigm uses a ground vehicle to reach terrestrial targets and, a drone team to reach the aerial targets.

Unlike other route planners, TERRA coordinates and plans efficient routes that meet the objectives set in the shortest time with the greatest cost savings.

ADVANTAGES AND INNOVATIONS

- Autonomous and heterogeneous robotic cooperation
- Routing and tasking optimization
- Multi-objective optimization
- Intelligent, efficient and robust explorations