ISEP-DEE
Mestrado em Engenharia Electrotécnica e de Computadores

Tese/Dissertação (Proposta)
Ano lectivo 2011/12

Titulo:

PEGame: Pursuit/Evasion Game with mobile robots and humans playing in a wireless sensor network field

Nome do Aluno:

Nº Telf/Telm: Email:

Breve descrição do trabalho:

It is commonly accepted that every Wireless Sensor Network (WSN) deployment may serve as an infrastructure for more that one application/service. One of the features that is expected from WSNs is the possibility of localizing and tracking mobile entities such as humans, equipment, transportation devices or mobile robots. It is also forecast that WSNs will be used for security applications (e.g. houses, buildings, exhibition centres, stadiums) where detecting, tracking and pursuing intruders may be envisaged. Other very appealing applications of WSNs include search&rescue operations in critical scenarios like disaster management (building explosions or collapse; building/forest fires, etc.).

In this context, it is expected that humans and robots will need to cooperate to a common objective: to localize, track and pursuit/rescue some other entity (e.g. a human or a valuable good). Complementary, the WSN infrastructure must provide localization and communication services for this application.

The aim of this Thesis is to design and develop a distributed application for a team of humans/robots to localize, chase and get (close enough to) one or more target entities (humans/robots) in the context of pursuit/evasion or search&rescue operations.

The work involves the development of one application for instructing humans through wearable-like computers (PDAs - Pocket Data Assistant and HMDs - Head-Mounted Displays) and another application for instructing robots (WiFiBots)

to reach their target(s) in a cooperative fashion. It is assumed that the WSN infrastructure already provides localization and communication services.

Outros dados relevantes:

Por favor enviar e-mail com CV resumido para mjf@isep.ipp.pt

Para mais informações sobre as actividades de I&D do CISTER na área de redes de sensores, visite http://www.cister.isep.ipp.pt/research/sensor+networks/

Recursos necessários no DEE:

A Unidade de Investigação CISTER disponibilizará os equipamentos necessários. Em princípio, não serão necessários recursos do DEE, a não ser apoio no desenvolvimento de potenciais plataformas de hardware.

Instituição de Acolhimento: Unidade de Investigação CISTER

Website: http://www.cister.isep.ipp.pt I Tel: 22 8340502

Orientação: Mário Alves, mjf@isep.ipp.pt

Co-orientação: Ricardo Severino, rars@isep.ipp.pt