

**ISEP-DEE**  
**Licenciatura em Engenharia Electrotécnica e de Computadores**

**Seminário/Estágio (Proposta)**  
Ano lectivo 2011/12

Titulo:

*SEEKS: Sound-based Event Evaluation and deteKtion System*

Nome do Aluno:

Nº

Telf/Telm:

Email:

Breve descrição do trabalho:

*3D event detection systems are now common in many cities where gunshots are a common occurrence on a daily basis. These systems work in two stages: initially the sound of the shot is detected and registered in a network of sensors spread over a large geographic area. In each event, besides the audio recording of the shot the start time is recorded with high precision in each sensor. This information is then transferred to a central unit for further processing. The first level of processing is the 3D location of the shot given the speed of sound, the location of each sensor and the time recorded by each sensor for a particular event. The second level of processing is to analyze the recorded audio data to obtain information about the type of event, weapon used, etc ... In this project the idea is to use a wireless sensor network with the same objectives, where the part of recording and reporting data by the network is already done. The goal of this work is to gather the sensor network data and calculate the 3D position of the event and do signal processing to extract event information. Instead of firing weapons the test system will be based on less dramatic events such as the impact of a ping-pong ball on a wall or table.*

Outros dados relevantes:

Por favor enviar e-mail com CV resumido para [mjf@isep.ipp.pt](mailto: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

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