

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

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

Titulo:

*ReWORK: Real-time inertial sensory in wireless sensor netWORKs*

Nome do Aluno:

Nº

Telf/Telm:

Email:

Breve descrição do trabalho:

*Recent developments in the area of real world interaction with computers are pushing computing applications to a new level of interactivity. The growing interest in tightly merging both Cybernetic and Physical worlds into an unique system (Cyber-Physical Systems) demands new technologies, since conventional computers interfaces (such as keyboard, mouse, joysticks, simple acceleration motion sensors, touch-screens and voice commands) tend to become insufficient interfaces for such kind of interaction. This is valid either for entertainment, productivity applications, healthcare and medical equipments and command and control applications.*

*Body Sensor Networks (BSN) is a restricted field in the vast research area of the sensor networks that is deeply related with this type of applications. Moreover, the technologies resultant from the research fields of the Wireless Sensor Networks (WSN), such as IEEE 802.15.4, enabled interesting features that allowed these implementations to become more practical. However WSN platforms and IEEE 802.15.4 is inherently resource scarce, especially in terms of energy and available bandwidth. Additionally, despite the referred limitations, in order to cope with such interactivity demands the system must still respond in a real-time fashion.*

***The goal of this work is to develop extremely efficient device drivers for inertial sensory hardware recently developed at CISTER, investigate and optimize the current implementation as well as to add extra features to the IEEE 802.15.4***

***standard in order to enable the full use of the equipment's features and guarantee real-time communications.***

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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