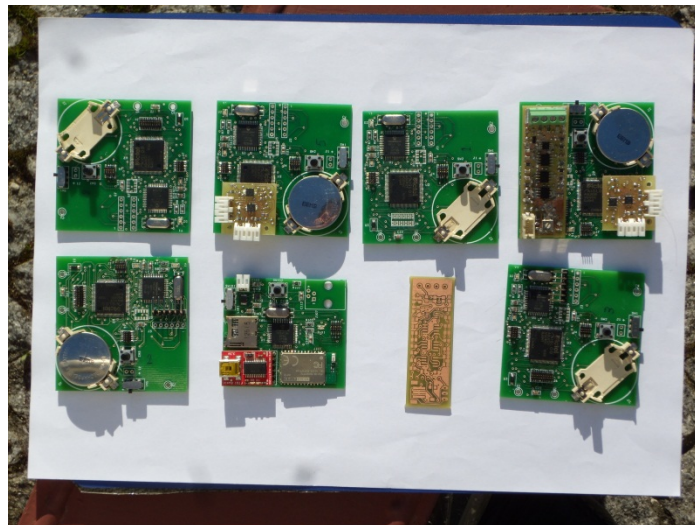


Design of a Body Sensor Network Embedded in Textiles for Biomedical Applications

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- Low-power network protocol for sensor networks
- Hardware prototype of communication nodes



Description & Objectives

- Locomotion is a fundamental function in the active life of a human. However, several neuromuscular or muscle skeletal disorders can significantly impair human locomotion or even produce gait abnormalities. The instruments and methods used for gait analysis are quite expensive and complex, as well as difficult to apply by healthcare staff, difficult to operate and uncomfortable for the patients.
- The purpose of this thesis is to design a system that includes a central processing module and a comfortable, non-invasive wearable network sensor for acquiring the signals from lower limb sensors and sending them to a central unit. This unit will be in wireless connection with a computer or PDA for further analysis. New hardware, software and 1-wire mesh network will be designed for communication with embedded textile biomedical sensors in wearable garment. To obtain a high performance system, testability, reliability, and low power consumption will be considered.