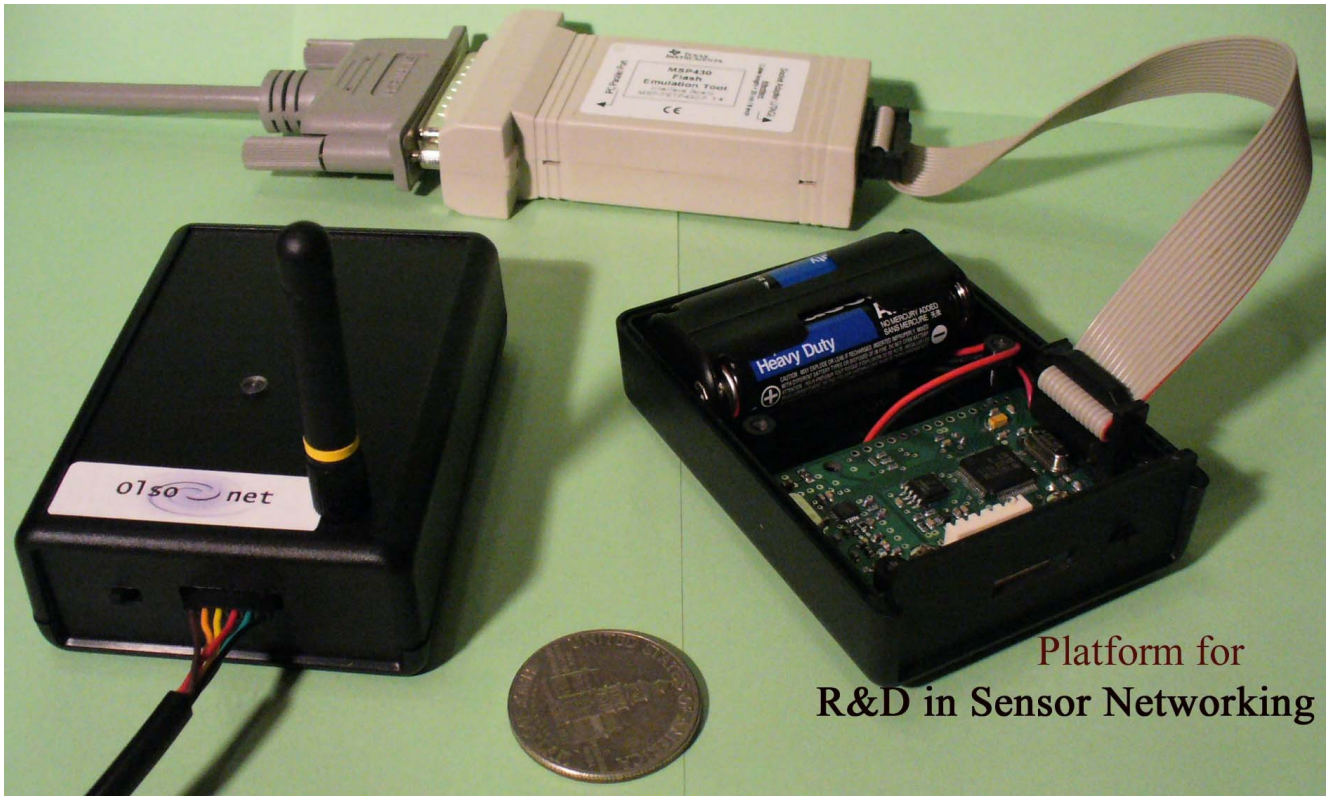

Overview

EMSPCC11 is a general purpose, sensor-enabled, wireless node used by Olsonet for research and development, typically for rapid prototyping of custom sensor networks. It has been designed to be versatile and suitable through all phases of product development, until the target (specialized) hardware is approved as final for a given application. The node is easy to program, debug, and adapt. It can easily interface to sensors, including digital as well as analog ones. Pre-programmed application blueprints make it possible to quickly build prototype systems and set up exciting demonstrations.

Our complete platform includes unique software enabling true ad-hoc wireless networking[1] and virtual execution of wireless applications (praxes). With EMSPCC11 as a flexible and inexpensive wireless node, we would like to make this platform available to the academia and R&D organizations as the environment of choice for a wide range of works on wireless sensor networking.

1 Our ad-hoc wireless scheme is unrelated to ZigBee® and, in particular, does not assume ZigBee as a prerequisite.

Sample Applications

Generic areas, including inter-disciplines

- low power wireless networking
- sensor hosting and data acquisition
- ubiquitous computing

Selected particulars

- asset tracking and management
- environmental monitoring and data collection
- ad-hoc location engines

Key Features and Benefits

Hardware

- MSP430F1611 microcontroller (from TI)
- CC1100 RF transceiver (from TI)
- Non-volatile data storage (512KB, not including program memory)

- 21 I/O pins available for sensors/actuators, including 8 ADC- and 2 DAC-capable pins
- JTAG I/F for programming/debugging
- TTL RS232/USB I/F for OSS (Operations Support System) connectivity
- 3 LEDs (RGB)
- Flexible power supply (USB, regulated battery, unregulated battery) for experiments with aggressive duty cycling (over one year battery life-time)
- Aesthetic enclosure, with space left for hardware add-ons
- Whip antenna
- On/off switch
- Reset button

Software

Licensable at no cost to universities:

- PicOS™: a small-footprint operating system for wireless praxes
- TARP™ (Tiny Ad-hoc Routing Protocol): Olsonet's proprietary mesh-forwarding scheme
- VUEE™ (Virtual Underlay Execution Engine): a vehicle for virtual execution of complete networked praxes

Software development for EMSPCC11 can be carried out within open-source platforms: Linux and Cygwin (under Windows). See http://www.olsonet.com for features and documents.

We also offer

- Rapid development of custom systems and commercial licensing
- Custom interfacing to any reasonable sensors and actuators
- Rapid ports to any hardware configurations, if backed by solid business cases
- OSS development
- Support and consulting

Contact

enqq@olsonet.com

Example: the building blocks of EcoNet

http://www.olsonet.com/Documents/econet.swf