
EmNetS – Embedded Networked Sensing

Summary	<p>The project provides networking and protocol software for building power-efficient, scalable wireless sensor networks for application in utilities and resource management. The project includes the development of:</p> <ul style="list-style-type: none">• An architecture for low-power network communication and management• Energy efficient medium access control and networking protocols for mesh networks• A network management protocol that integrates with a lightweight node-based middleware and a backend management system• Network emulator and network software debugging tool support
Key attributes	<p>EmNetS provides a low-power, IP-based protocol suite for wireless sensor networks. Key attributes are:</p> <ul style="list-style-type: none">• A scalable, multi-hop mesh network which can scale to large numbers of sensor nodes• Optimised for use in resource-constrained sensor networks• Will be compliant with the Zigbee standard (after imminent changes to the Zigbee standard have been incorporated)
Potential opportunities	<p>EmNetS has given rise to the following:</p> <ul style="list-style-type: none">• An energy efficient protocol stack for large wireless sensor networks which is compliant with IETF and Zigbee standards• A set of wireless sensor network management and planning tools, and associated GUI• A network emulator to allow accurate software development and debugging• The potential for integrating EmNetS components into information management systems which use wireless sensor networks
Possible application areas	<p>EmNetS is applicable for use in resource-constrained sensor networks. Possible application areas include:</p> <ul style="list-style-type: none">• Utilities• Energy and resource management• Building system management and control

CONTACT

Dr. Dirk Pesch

Cork Institute of Technology

Prof. Cormac J. Sreenan

University College Cork

dirk.pesch@cit.ie

tel: +353-21-432-6377

cjs@cs.ucc.ie

tel: +353-21-490-2795