

**Node Health based Routing for Low Power Embedded Networked Devices
(Collaborative Research with Sun Microsystem Labs)**

Speaker: Pradip De, CReWMaN Researcher

Date: Friday, September 14, 2007

Time: 10:30 - 11:30 AM

Venue: CReWMaN Lab (WH 413)

Abstract:

The dynamic and lossy nature of wireless communication poses major challenges to reliable, self organizing multihop networks. The low-power radio of sensor networks further aggravates this problem with connectivity being unpredictable and chaotic. In addition, the resource constraints of sensor devices make preserving of node battery lifetime an important requirement. In this presentation, we will discuss the design and implementation of a routing protocol that takes dynamically captured link connectivity statistics and node battery usage through a LinkQuality/NodeHealth monitor in calculating its route cost. The protocol is based on an on-demand reactive paradigm similar to AODV (ad hoc on-demand vector) routing. The implementation has been done on the SunSPOT (Sun's Small Programmable Object Technology device) which is a Java enabled wireless sensor device developed at Sun Labs. [This work was done while the speaker was a summer intern in the Secure Ad hoc Communications group at Sun Labs in Summer 2007.]

Biography:

Pradip De is a senior PhD student in the Computer Science and Engineering Department at UTA. As a CReWMaN researcher, his interests include design and modeling of data dissemination protocols, epidemic theory based malware detection and secure broadcast protocols in wireless sensor networks. The presented work has been filed for a patent disclosure at Sun Labs titled "Mesh Routing Optimized for Stability and System Lifetime Maximization."