Motivation

Wireless sensor networks are flexible and easy to deploy...

...but they can be difficult to program and debug.

Background

TinyOS is an event-driven, component-based runtime environment for the motes. TOSSIM is an interrupt-level simulator for TinyOS programs. It runs actual TinyOS code but provides software replacements for the simulated hardware and models network interaction at the bit or packet level.

Summary

Viptos (Visual Ptolemy and TinyOS) is an integrated graphical development and simulation environment for TinyOS-based wireless sensor networks. Viptos provides interrupt-level simulation of actual TinyOS programs, with packet-level simulation of the network, while allowing the developer to use other models of computation available in Ptolemy II for modeling various parts of the system.

Example: SenseToLeds