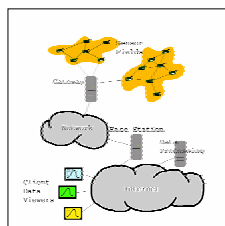


Available at <http://www.cshcn.umd.edu/research/atemu>

Objective:

To design and implement tools to aid in the development and measurement of embedded sensor network software.



Atemu:

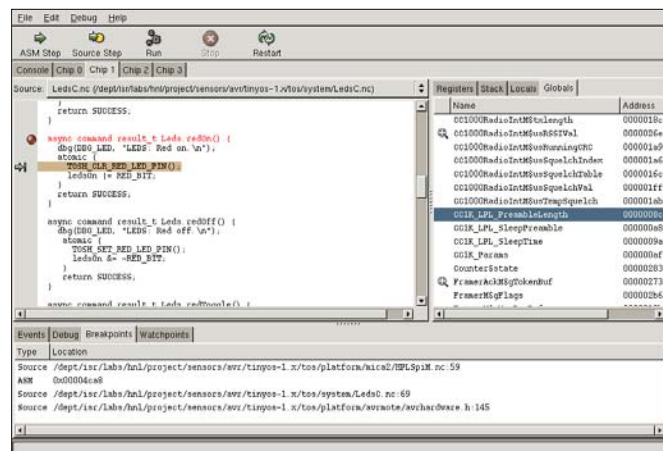
Atemu is a software emulator for AVR based systems. Along with support for the AVR instruction set, it also includes support for other peripheral devices on the MICA2 sensor node platform. Atemu can be used to perform high fidelity large scale sensor network emulation studies in a controlled environment. In addition, the Atemu package can also be used in an educational environment to facilitate experimentation with sensor networks without requiring the purchase of expensive sensor node hardware. It also offers a solution to the logistical difficulties of conducting experiments with large numbers of physical devices.

Xatdb:

Included in the Atemu distribution is Xatdb. Xatdb is a graphical debugger front-end to the Atemu sensor network emulator. Xatdb provides users a complete system for debugging and monitoring the execution of their code. Using Xatdb, users can run code built for the MICA2 platform and debug efficiently using the ability to set breakpoints and watchpoints, as well the ability to single step through either assembly or high level source code.

The Debugger

- ✓ Graphical debugging environment
- ✓ Support for arbitrary numbers of breakpoints and memory watchpoints
- ✓ Support for multiple sensor nodes in a sensor network
- ✓ Symbolic debugging support including source-level stepping and run-time variable inspection for programs compiled with debugging symbols



The Emulator

- ✓ Complete emulation of the AVR instruction set
- ✓ Support for MICA2 board components
- ✓ Loading of ELF executables and Motorola SREC images
- ✓ Different sensor nodes can run different programs