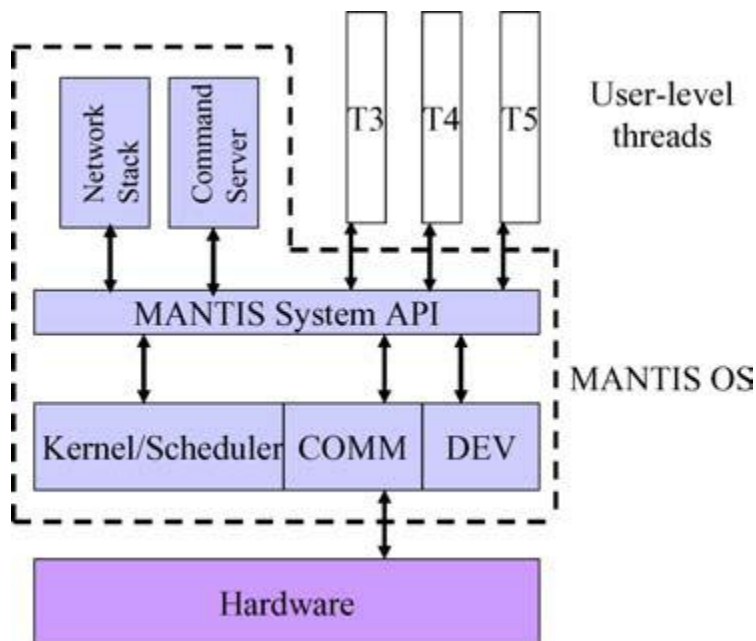Mantis Operating System Summary

Catherine Greene

   The MANTIS Operating System (MOS) is an open source embedded multithreaded operating system for wireless micro sensor platforms. MANIS gets its name from **M**ultimod**A**l system for **N**e**T**works of **I**n-situ wireless **S**ensors. It is written in C. MANTIS is implemented in a lightweight RAM footprint that fits in less than 500 bytes of memory, this includes kernel, scheduler, and network stack. MOS has a power-efficient scheduler that sleeps the microcontroller when the sleep() function is called which reduces the consumption. A big part in the design features of MOS is its flexibility in the form of cross-platform support and ability to test on PCs, PDAs, and different micro sensor platforms. MOS supports remote management of in-situ sensors through dynamic reprogramming and remote login. It has a low barrier to entry in terms of programming for sensor networks. Also, MOS supports advanced sensor OS features like multimodal prototyping, dynamic reprogramming, and remote shells. MANTIS is still a work in progress, a few things need to be improved upon, low power management needs to be improved (though the sleep() function does help in saving energy, they are working on developing even more efficient ways as well), demonstrating reliability or code updated over the network, optimizing the size of these updates, and ensuring the security as well as the authenticity of updates need to be improved as well as a few other key things.

"MANTIS OS architecture compresses a classic multithreaded layered
operating system design into <500 bytes of RAM."

Information and picture received from **"**MANTIS OS: an embedded multithreaded operating system for wireless micro sensor platforms" which can be found at http://portal.acm.org/citation.cfm?id=1160178