An embedded operating system is being implemented for embedded applications. The OS needs to be lean in terms of code size, to minimize energy consumption due to memory system usage. The OS also needs to provide power-aware real-time scheduling for multiple threads.

The Embedded Cygnus Operating System (eCos) has been chosen as a starting point for this implementation. The operating system provides real-time scheduling, supports the ARM architecture, is open source, and is very scalable, allowing only the exact functionality needed by the application to be included in the kernel.

The OS is being ported to the µAMPS system, which uses the StrongARM 1100 microprocessor. The modified OS will support dynamic frequency and voltage scaling to minimize energy consumed by the CPU core. The goal is to allow µAMPS application software to perform the necessary functionality while consuming much less overall energy than would be possible using a more conventional operating system such as Linux.