

Eminent Microsystems technology enables breakthrough micro Inertial Navigation System (INS)

The Embedded Systems Framework™ (ESF) object-oriented suite of embedded software libraries provides the state-of-the-art in real-time, high reliability software components. Eminent Microsystems ESF technology enables true embedded reusability management, greatly reducing embedded product development costs and accelerating time to market.

Portland, OR, April 10, 2008. EMINENT Microsystems Inc. a leader in advanced embedded technologies today announces that ESF has been utilized to develop a breakthrough MEMS (Micro-Electro-Mechanical system) Inertial Navigation System (INS) to provide precision navigation for UAV's, Unmanned Underwater Vehicle's (UUV), Smart Munitions, and Handhelds. The device, developed by JayMart Sensors LLC, implements an Inertial Measurement Unit (IMU) with an array of MEMS gyros, a MEMS triaxial accelerometer, a 3D magnetometer, digital compass, and a DSP for signal processing, adaptive control and serial communications. The INS feature is a hierarchy of algorithmic software modules that process raw sensor data and output real-time estimates of attitude, position, velocity, and acceleration. This powerful design delivers tactical grade performance of 1°/hour drift. The INS module and all sub-modules are hard real-time C++ software implementations. Data flow through the modules is deterministic, and there are no non-deterministic library components used, such as heap based allocations or de-allocations. There are also no OS, CPU, or platform dependencies. The implementation is reentrant, meaning that the design will support multiple threads of execution running the same algorithmic code in a real-time kernel (if desired), but does not require a kernel.



The MEMS IMU/INS is specifically designed for rugged applications in high G environments. Key features include small size, low power and weight, and high speed serial or Ethernet ready links in a G hardened package.

“Eminent products and engineering services allowed us to rapidly expand our original concept and develop a device that surpasses anything currently available,” Says Martin Tanenhaus, CTO of JayMart Sensors.

The COTS IMU/INS units sell for under \$10,000 in limited quantities and significantly lower in production quantities. In summary, the developed MEMS IMU/GPS navigation system offers an effective low-cost navigation system for a variety of applications.

About EMINENT Microsystems

Eminent Microsystems is a premier provider of advanced Device Software Optimization (DSO) software and design services to the global market. Our technologies enable next generation embedded applications such as medical devices, digital signal processing, consumer devices, wireless products, remote monitoring and sensor networks. Eminent Microsystems accelerates the product development cycle and reduces overall project costs. Discover the Eminent advantage.

About JayMart Sensors

JayMart Sensors develops IMU sensor technology for a wide verity of applications.