High Performance, Miniature GPS/Innovative Inertial Sensors

Posted Janine E. Mooney, Associate Editor

MicroStrain announces the release of the newest in a line of innovative inertial sensors, the 3DM-GX3® -45 which is a GPS-aided inertial navigation system (GPS/INS). The on-board Kalman filter provides optimal position, velocity, and attitude (PVA) estimates. The 3DM-GX3® -45 is in a class of its own, with high performance tracking capabilities comparable to higher cost units, yet with a very small footprint (44mm x 25mm) and extremely light weight (23 grams). It provides an ideal solution for a variety of applications including vehicle tracking, camera pointing, antenna pointing, and unmanned aerial and micro vehicle navigation. Additionally, its ability to integrate third party GPS and/or heading sensor inputs means that it can take advantage of existing navigation components that may already be in place.

This high performance, miniature GPS/INS combines MEMS inertial sensors, with a high sensitivity GPS receiver, and an extended Kalman filter, allowing for improved GPS-out navigation performance, accurate attitude estimates even during sustained high-g maneuvers, and higher rate PVA data than typical GPS alone. An embedded geo- magnetic model provides estimates of Earth's magnetic field vector in the local area. The navigation solution, as well as raw GPS data, raw inertial data and system status information are time aligned and available through the MIP application programming interface. This powerful and flexible packet protocol gives the user control over the data packet content, allowing for optimization of communications.

An early adopter of the 3DM-GX3-45 has worked with MicroStrain to integrate the advanced GPS/INS into their airborne antenna pointing application. They note that the collaborative effort with MicroStrain has produced a high- quality product. In addition to integrating a high quality, cost effective product, the early adopter of the 3DM-GX3-45 was also extremely pleased with the powerful application programming interface (API) which offers unique sensor input options and a customizable data output format that meets their demanding application

requirements.

"Our powerful, advanced Kalman filter integrated into our small lightweight INS unit means that customers will get highly accurate PVA estimates at a much lower cost than other INS units with comparable measurement outputs" commented MicroStrain President and CEO, Steve Arms. "The 3DM-GX3 -45 will open the doors for more accurate navigation measurements at significantly reduced expense for a variety of industries and applications."

http://microstrain.com [1]

Source URL (retrieved on *03/11/2014 - 8:37pm*):
http://www.wirelessdesignmag.com/product-releases/2011/09/high-performance-miniature-gps/innovative-inertial-sensors?qt-digital_editions=0

Links:
[1] http://microstrain.com