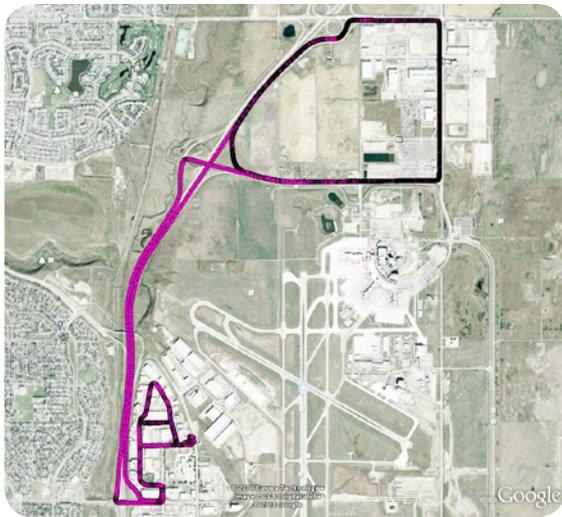


NovAtel Integrates *iSensor* MEMS IMU into SPAN GNSS/INS System for Size-Constrained Positioning and Navigation Applications



NovAtel is the industry-leading supplier of OEM global navigation satellite system (GNSS) products, including GNSS receivers, antennas, and subsystems. The company's products are integrated into high performance positioning systems used in a wide range of applications including surveying, geographical information system (GIS) mapping, precision agriculture machine guidance, port automation, mining, marine, and military/defense.

NovAtel's premier GNSS/INS SPAN® products bring together two complementary technologies: precision GNSS positioning and an inertial navigation system (INS). The accuracy of NovAtel's GNSS receivers, coupled with Analog Devices *iSensor*® MEMS inertial measurement units (IMUs), offers a compact, lightweight, and low power integrated solution for reliable, continuously available 3D positioning, velocity, and attitude data—even through periods when satellite signals are blocked or unavailable.



Ground navigation tests on the GNSS/INS SPAN product with an integrated ADIS16488 *iSensor* MEMS IMU were conducted by NovAtel in the areas of real-time position, velocity, and attitude. The performance results were found comparable to systems that use larger and heavier ring-laser and fiber optic gyro IMUs. In addition, SPAN systems using the ADIS16488 have the added benefit of addressing the growing market of lower cost, size-constrained GNSS/INS applications that use compact vehicles, cameras, and other embedded systems yet require high performance and durability.

The ADIS16488 *iSensor* MEMS IMU features low noise gyros and accelerometers in a small, lightweight, rugged, environmentally-robust enclosure. Integrating a tri-axis gyroscope, tri-axis accelerometer, tri-axis magnetometer, and a pressure sensor into a single package, the ADIS16488 tactical-grade 10-degrees-of-freedom (DoF) *iSensor* MEMS IMU is designed to meet mission-critical requirements in high performance navigation and stabilization

applications where cost, size, weight, and performance are critical factors. In addition to its impressive tactical-grade bias stability (below 10°/hr), the ADIS16488 outperforms conventional gyro/IMU offerings on the often more critical specifications of *g*-effect, temperature coefficient, and bandwidth by up to 100× and outperforms legacy military grade IMUs on vibration rectification and linearity—while consuming one-quarter the power of high end IMUs, at approximately one-tenth the cost.

Available in two configurations, NovAtel's SPAN IMU-ADIS-16488 incorporates the ADIS16488 and can be configured as a fully integrated GPS/GNSS inertial navigation system or as a standalone IMU sensor for pairing with a customer-specified NovAtel SPAN receiver. These configurations are the smallest and lightest solutions in NovAtel's portfolio.



“For positioning and navigation applications where system size, weight, price, and performance are all critical attributes, ADI's ADIS16488 *iSensor* MEMS IMU provides a very attractive option.”

Sarah McKee, Product Manager, NovAtel