

SBG Systems Launches MEMS Inertial Navigation System



SBG Systems has launched the Apogee Series, an accurate inertial navigation system based on the robust and cost-effective MEMS technology. The Apogee Series is also the smallest and lightest inertial navigation system at this level of accuracy. This INS/GNSS integrates the very latest generation of MEMS sensors and tri-frequency GNSS receivers.

Apogee achieves 0.008° in roll and pitch in real-time, and 0.005° in post-processing. With two antennas, it delivers a robust and accurate heading. SBG SYSTEMS manufactures inertial systems from the concept to the production. The Apogee benefits from the company's high level of expertise in integrated design, IMU calibration, testing, and filtering, said Alexis Guinamard, CTO of SBG Systems.

Mobile mapping

Apogee is developed for synchronisation with Lidar equipment thanks to a UTC time stamping accurate to 1 microsecond. This integrated INS/GNSS provides optimal position in multipath environment or during GNSS outages thanks to a tight GNSS integration and the continuous fusion of inertial and odometer data. To get the required positioning accuracy, Apogee supports RTK and every Precise Point Positioning services (Omnistar, Terrastar, etc.).

With very low noise gyroscopes, its low latency, and its high resistance to vibrations, the Apogee allows aerial surveys by plane or helicopter. It provides real-time orientation and position data thanks to the direct fusion of inertial and GNSS information.

Post-processing

Orientation and position data can be recorded in the Apogee data logger. At the office, the user imports data in the post-processing software. This tool gives access to several RTK networks and reference station offline data (VRS, CORS, etc.). Additionally, it enhances orientation and position accuracy by a complete 'backward/forward' calculation.

Models

Four models make up the Apogee line. The Apogee-A provides only orientation data. The Apogee-N additionally embeds a GNSS receiver; it is a compact solution with one antenna for land and aerial applications. The Apogee-D embeds a dual antenna GNSS receiver for accurate heading under low dynamics conditions. Completing the line, the Apogee-E delivers navigation data when connected to an external GNSS receiver or to the SplitBox with integrated GNSS.

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