

New INS/GNSS Solution to Increase Productivity of UAV-based Surveying



SBG Systems will present for the first time at AUVSI's Xponential show in Chicago, USA, the Quanta UAV Series, a new line of inertial navigation systems (INS) dedicated to UAV-based surveying integrators. As [SBG Systems](#) aims to give UAV surveyors more autonomy for additional survey lines, the company has designed a small and low-power inertial navigation system offered on two levels of accuracy. Quanta UAV and Quanta UAV Extra have been developed for compact Lidar to high-end beyond-visual-line-of-sight (BVLOS) mapping solutions.

Both solutions provide precise orientation and centimeter level position data delivered both in real-time and post-processing. This direct geo-referencing solution eliminates the need of ground control points and greatly reduces the need of overlapping.

INS/GNSS post-processing software

Qinertia, SBG's [post-processing software](#) completes the Quanta UAV offer. It gives access to offline RTK corrections from more than 7,000 base stations located in 164 countries. Trajectory and orientation are greatly improved by processing inertial data and raw GNSS observables in forward and backward directions. This advanced software also computes your base station position to quickly get your project to the centimeter accuracy.

Robotics and surveying

Quanta UAV is the result of SBG's expertise in both miniaturized technology for drone navigation and high-end sensors for mobile mapping. Designed as a geo-referencing solution, it can also be used as a high-end navigation solution to feed the UAV autopilot. Quanta UAV benefits from a tight integration with in-house IMUs, advanced calibration techniques and algorithms which ensure a consistent behavior in all weather conditions, as well as a robust position even if the UAV gets close to buildings, electrical lines, or trees.

Quanta UAV embeds a web interface for an easy configuration with a 3D view showing all parameters. The calibration tool automatically aligns the lever arm between the two antennas and the sensor, and re-estimates it in flight for more precision.