Magellan BLADE GNSS Signal Processing

Magellan has announced its exclusive BLADE (Base Line Accurate Determination Engine) technology, a GNSS processing solution that facilitates centimeter-level accuracy for real-time and post-processing surveys and mapping operations. Magellan's BLADE combines ranging and carrier phase data from two satellite systems, GPS and SBAS, for superior satellite coverage and signal reliability to enable rapid, centimeter-level solutions.

Magellan's BLADE is the first GNSS processing system that uses SBAS ranging and carrier phase measurements in the RTK data processing. These SBAS measurements, which are GPS-like, improve satellite geometry to allow centimeter-level accuracies to be achieved in a shorter time compared to GPS-only algorithms. Although other processing systems use the SBAS correction message to achieve sub-meter positioning, BLADE is the only GNSS processing using SBAS ranging and carrier phase data in the RTK computation.

BLADE processing is designed to provide rapid initialisation. Initialisation times will vary depending on SBAS availability and sky conditions. For example, the addition of one SBAS satellite improves the time to ambiguity resolution by 50%, and the addition of two SBAS satellites improves this time by 75%. In open-sky environments, with mono frequency system, the time to reach centimeter-level accuracy is almost always less than one minute when two SBAS satellites are in common view.

DG14 RTK, Magellan's cost-effective single-frequency RTK application for the DG14 receiver uses BLADE technology to provide fixed centimeter and fast decimeter solutions to demanding high-precision applications for machine control, agriculture, aviation, military, unmanned aerial vehicles (UAVs), robotics, marine survey and navigation.

BLADE also enables technology in the ProMark3 RTK, which outperforms single-frequency GPS-only RTK receivers and grants real-time performance in a lightweight and cost-effective handheld system.

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