

GEOCUE ANNOUNCES GNSS DIRECT GEOPOSITIONING SYSTEM FOR LOW COST DJI DRONES

Huntsville, AL – GeoCue Group Inc. (GeoCue) is excited to announce a new GNSS positioning system that will allow users of DJI Phantom 4 Pros and Inspire 2 drones (as well as most drones using higher end cameras) to achieve survey-level accuracy with a minimum of ground control. *Loki*, our new direct geopositioning system for small unmanned aerial systems solves the two fundamental problems associated with this technology:

- Positioning Accuracy Loki uses the new AsteRx-m2 multi-frequency, multi-constellation GNSS engine from Septentrio. With 448 hardware channels, finding and locking satellites is not a problem!
- Camera Events GeoCue has invented a patent-pending method of detecting camera events from Phantoms/Inspires and synchronizing those events to GNSS positioning. No modifications to the drone are necessary; the adapter cable is "plug and play."

Loki is a self-contained kit that provides all of the hardware and software needed to equip your drone with a Post-Processed Kinematic (PPK) multifrequency, multi-constellation, differential, carrier-phase Global Satellite Navigation System (GNSS). Using a local base station (not included), Loki provides centimeter level positioning with minimal, and in some cases, no ground control points (though GCPs are always recommended for quality assurance).

"GeoCue has been a long time Septentrio OEM development partner," said Neil Vancans, Vice President of Septentrio Americas. "They have offered our previous generation sUAS board on their high-end AV-900, achieving remarkable results in both accuracy and reliability. By solving the problem of connecting the virtual camera trigger on DJI drones to our AsteRx-m2 GNSS engine, they can achieve professional mapping accuracies with consumergrade UAVs."

DroneDeploy of San Francisco has become the leader in cloud-based processing for DJI (as well as other) drones. They have enabled users of Phantom and Inspire drones to easily upload drone images, work on-line with analytics, and download point clouds and orthophotos to desktops for advanced processing. Without Loki, achieving acceptable network accuracy requires the time-consuming placement of ground control targets throughout the mapping site. GeoCue and DroneDeploy have been working together to ensure a smooth Loki-DroneDeploy workflow from field to finish.

"The GeoCue Loki system is an exciting product for anyone using drones to make maps with high accuracy," says Mike Winn, CEO and co-founder of DroneDeploy. "The Loki's combination of high-end GNSS positioning and DJI camera synchronization enables survey-grade accuracy with the simplest workflow that we've seen— making the Loki a great fit for the DroneDeploy platform."

"I am very excited to be working with industry leaders such as DroneDeploy on our Loki project," says Lewis Graham, President and CTO of GeoCue Group. "Loki provides high accuracy positional data to downstream processing solutions. More significantly, it does this for DJI Phantom 4 Pro and Inspire 2 drones. Combining DJI, Loki and cloud processing solutions such as DroneDeploy provides a very streamlined and cost effective solution for high accuracy site surveys."

The Loki kit includes:

- Loki PPK Controller using the Septentrio AsteRx-m2 GNSS engine (GPS L1, L2, L5 and GLONASS L1, L2, L3, 448 hardware channels).
- Maxtena M1227HCT-A2-SMA high performance, active, multiband GNSS antenna
- Antenna ground plane with mounting kit
- Antenna to controller cable

- USB cable for data transfer and Loki controller charging
- Personality cable (user selects either DJI or DSLR)
- AirGon ASP software suite
- Mounting kits for DJI Inspire 2 and Phantom 4 Pro
- 1 year of maintenance and technical support

Loki requires a local multifrequency base station (not included but available from GeoCue). Loki is shipping to early adopter customers in August 2017. It will be available for the general market in September 2017. It will release with direct support for DroneDeploy and AirGon's Bring Your Own Drone (BYOD) Mapping Kit. Loki's introductory price will be USD \$4,995. GeoCue is currently accepting preorders.

Loki will be on display September 6-8 at the InterDrone 2017 conference in Las Vegas and at Commercial UAV Expo, also in Las Vegas, October 24-26. A workshop dedicated to high accuracy mapping with DJI drones using Loki is being held in conjunction with the Commercial UAV Expo. Register at <u>www.expouav.com</u>.

About Septentrio

Septentrio designs, manufactures and sells high-precision multi frequency multi constellation GPS/GNSS equipment which is used in demanding applications in a variety of industries such as marine, construction, agriculture, survey and mapping, GIS, UAVs as well as other industries. Septentrio receivers deliver consistently accurate GNSS positions scalable to cm-level, and perform solidly even under heavy scintillation or jamming. Septentrio receivers are available as OEM boards, housed receivers and smart antennas.

Septentrio offers in-depth application and integration support to make its customers win in their markets. Septentrio is headquartered in Leuven, Belgium and has offices in Torrance, CA and Hong Kong, and partners throughout the world. To learn more about Septentrio and its products, visit <u>www.septentrio.com</u>.

About DroneDeploy

DroneDeploy is the leading cloud software platform for commercial drones, and is making the power of aerial data accessible and productive for everyone. Trusted by leading brands globally, DroneDeploy is transforming the way businesses leverage drones and aerial data across industries, including agriculture, construction, mining, inspection and surveying. Simple by design, DroneDeploy enables professional-grade imagery and analysis, 3D modeling and more from any drone on any device. DroneDeploy users have mapped and analyzed over 8 million acres in over 135 countries. DroneDeploy is located in the heart of San Francisco. To learn more visit <u>www.dronedeploy.com</u> and join the conversation on Twitter <u>@DroneDeploy</u>.

About GeoCue Group

GeoCue Group was founded in 2003 by a group of engineers with extensive experience in developing hardware and software solutions for primary remote-sensed data acquisition. Our initial products were aimed at reducing schedule and cost risk in geospatial production workflows by providing organizational, productivity and data management tools for base geospatial data production. These tools have been realized as the GeoCue product family. Today GeoCue workflow management tools are used by a majority of North American geospatial production shops. In 2005, GeoCue began selling and supporting Terrasolid tools for kinematic LIDAR data production. This was followed in 2009 by our acquisition of QCoherent Software LLC, the creator of the point cloud exploitation toolset, LP360. Today GeoCue is the largest supplier of kinematic LIDAR processing tools in North America and LP360 is the world's most widely used tool for exploiting point cloud data in an ArcGIS® environment. In 2014, GeoCue Group founded AirGon, a division focused on using small Unmanned Aerial Systems for high accuracy mapping. Leveraging our expertise in production risk reduction and point cloud processing tools, we are bringing services and products to market that provide surveyors and other geomatics professionals exciting new tools for geospatial data extraction using low cost drones. To learn more, visit www.geocue.com.