

Accurate Georeferencing for UAV Surveying without Base Station



Klau Geomatics, specialised in post processed kinematic (PPK) direct georeferencing technology, has announced its new No-Base-Station high-accuracy georeferencing solution for unmanned aerial vehicles (UAVs). This innovative new solution is the result of close collaboration between Klau Geomatics and Hexagon's Geosystems Division, enabling users to conduct UAV surveying projects without running a local GPS receiver, producing high-accuracy 3D survey data.

In addition to accuracy, which is the most important feature of our georeferencing solution, is the simplified and efficient workflow. Users don't need any survey equipment to place Ground Control Points (GCPs) or even a local base station for their PPK. They can collect precise georeferenced UAV data and even capture ground check points just using their

UAV, said Adam Chabok, technical director of Klau Geomatics. With the simplified plug and play payload, the system can be easily attached to any UAV or manned aircraft.

HxGN SmartNet provides the perfect reference station infrastructure and enables automated access via the X-pos technology, said Robert Martin, business director of HxGN SmartNet. This is an excellent example of an application that benefits from a fast workflow where users can always rely on HxGN SmartNet RINEX data repository, consisting of more than 4,500 reference stations worldwide. Any delays in data handling are eliminated by instant access to the required data files.

Simplified high precision UAV surveying

Klau Geomatics was founded in 2008 by experienced survey engineers with decades of knowledge in GPS systems, surveying, geodesy, photogrammetry and geospatial platform development. The KlauPPK georeferencing system was introduced in 2015 and has continued to advance with innovative product developments. The No-Base-Station solution is an outstanding example that enables any UAV carrying the KlauPPK system to collect and deliver highly accurate mapping data. Within 10 minutes of landing, the GPS correction data is available via the KlauPPK post processing software to geotag photos in any local or global coordinate system.

More efficient and productive mapping

With the Klau PPK direct georeferencing system, UAVs can cover a larger area in a single flight by reducing the side overlap down to 40 per cent. With the pre-calibrated cameras that come as part of the PPK package for DJI UAVs, data processing takes significantly less time. Photogrammetry processing software is given accurate camera calibration, position and attitude data to accelerate the aerial triangulation process, to achieve better results with less photos.

Construction and mine sites often use customised local coordinate systems and datums. Data produced by a typical UAV needs to be transformed to the local site frame of reference to be useful. This process is managed in the KlauPPK solution to allow users to collect accurate aerial data in any local or global coordinate system without external coordinate conversion software. KlauPPK enabled UAVs can be used to collect ground control points, similar to a survey grade GPS receiver, and automatically calibrate to the local site frame of reference.

Compatibility and availability

The KlauPPK solution is compatible with most DJI UAVs or other fixed wing, multirotor and custom UAVs or manned aircraft. Hundreds of professionals worldwide have successfully adopted this technology in their workflows with exceptional accuracy, reliability and efficiency. The No-Base-Station solution is currently available in Australia and Europe and will soon be deployed in North America.

For more information, please visit www.klauppk.com or hxgnsmartnet.com.