POSPac LiDAR QC Tools for UAV

FREQUENTLY ASKED QUESTIONS

1) WHAT ARE LIDAR QC TOOLS FOR UAV?

The LiDAR QC Tools for UAV are the software modules available in POSPac 8.6 or higher, designed to improve the robustness and accuracy of UAV LiDAR payloads built with Applanix Direct Georeferencing solutions comprised of the Trimble APX UAV hardware and POSPac UAV.

2) WHAT THEY ARE CAPABLE OF DOING?

The LiDAR tools will precisely estimate the boresight misalignment angles between the IMU and the LiDAR frame. In addition, the tools can perform corrections to the trajectory (position and orientation) used to generate the point cloud based upon a global point cloud adjustment. An LAS point cloud generator is also included to aid in visualizing results.

3) HOW DOES IT WORK?

The LiDAR QC Tools creates Voxels (3D pixels) from the LiDAR data and matches these in overlap regions. It then runs an iterative least squares adjustment using the matched points to solve for the constant IMU boresight angles, and optionally makes corrections to the trajectory (position and orientation) used to generate the points. The boresight misalignment angles are ready to be applied in third party software with either the original or corrected trajectory file, or a new trajectory file can be exported with the boresights applied.

4) WHAT ARE THE LIMITATIONS?

There are no limitations, but optimal accuracy is subject to LiDAR noise, captured scenery and payload integration quality. Current support is limited to UAV payloads and projects only.

5) ARE THERE DIFFERENT LICENSES?

Yes, there are two different license flavors available in POSPac. The first license supports boresighting only, while the second license supports both boresighting and trajectory adjustment. The point cloud generation is included in both licenses.

6) CAN IT BE RUN AUTOMATICALLY?

Absolutely, the tools are completely integrated into the post-processing workflow for single “push button” operation using the POSPac batch-processing mode.

7) IS IT SUPPORTED IN POSPAC MMS?

Yes, LiDAR QC tools for UAV are supported in both POSPac MMS and POSPac UAV. However, LiDAR QC does not support crewed airborne LiDAR data.

8) WHAT INFORMATION I SHOULD PROVIDE?

You should provide the navigation/raw GNSS and IMU data logged by the Applanix APX product along with the time-tagged LiDAR data in the local frame of the LiDAR. The LiDAR QC tools supports a generic LiDAR format. The LiDAR tools can be run using the extracted real time trajectory, or the post-processed (SBET) trajectory.

9) WHAT ARE THE COMPUTER REQUIREMENTS?

The LiDAR QC Tools for UAV as part of POSPac runs on Windows machines. It is recommended to have a modern Intel based Core i7 processor with a minimum of 32 GB of RAM and a fast solid state drive (SSD) with at least 100GB of free storage at the time the tools are running. Processing efficiency is also improved if the raw LiDAR measurements are separated in multiple files of about 1GB in size.

10) HOW I CAN PURCHASE LIDAR QC TOOLS FOR UAV?

tools are available through the Applanix distribution channels, please contact the sales representative for your region:
https://www.applanix.com/contact.htm

11) CAN I HAVE DEMO LICENSE?

Yes, it is possible to have a temporary demo license activated assuming you already have POSPac version 8.6 or higher. The tools are not compatible with previous versions of POSPac. Please contact our Customer Support department for details:
https://www.applanix.com/contact.htm#support