POSPac LiDAR QC Tools

LIDAR QC TOOLS: FREQUENTLY ASKED QUESTIONS

1. WHAT ARE LIDAR QC TOOLS?

The LiDAR QC Tools software module is available in POSPac MMS 8.6 and higher, designed to calibrate the boresight angles (misalignment between LiDAR and IMU Frame), adjust the trajectory (optional), and generate georeferenced LAS files.

2. WHICH BUSINESS LINES ARE SUPPORTED?

The LiDAR QC Tools module is available for Uncrewed Airborne (UAV) and Land Mobile Mapping products.

3. WHAT CAN I DO WITH THEM?

The LiDAR QC Tools precisely estimate the boresight misalignment angles between the IMU and the LiDAR frames. In addition, the tools can perform corrections to the trajectory (position and orientation, SBET) used to generate the point cloud based on a global point cloud adjustment. A point cloud generator is also included in the package and could be used to generate LAS files for further data analysis and visualization.

4. HOW DO THE LIDAR QC TOOLS WORK?

The LiDAR QC Tools create Voxels (3D pixels) from the LiDAR data and matches them in overlap regions. The software 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 used to generate the point cloud. The boresight misalignment angles are computed and 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.

5. WHAT ARE THE LIMITATIONS?

There are no limitations, but optimal accuracy is subject to LiDAR noise, captured features in the scenery, and integration quality. For the boresight mission, a specific pattern needs to be collected. This is documented in a separate technical note for UAV or Land application and can be provided by Applanix Support (techsupport@ applanix.com) or found on the Applanix Support Hub on our website.

6. ARE THERE DIFFERENT LICENSES AVAILABLE?

Yes, there are different licenses available. The term license (12 months) supports both business lines and all three components (Boresight, Trajectory Adjustment, LAS Generator).

7. IS LIDAR QC SUPPORTED IN BATCH MODE?

Absolutely, the tools are fully supported by POSPac batch command line mode.

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8. WHAT INFORMATION DO I NEED TO PROVIDE?

You need to provide the raw GNSS and IMU data logged by the Applanix hardware with the time-tagged LiDAR data collected in the LiDAR frame. POSPac supports PCAP files from VLP-16 and VLP-32C. For other LiDAR sensors we recommend converting into the generic file format (L5D, LQC – technical note to be provided by Applanix Support or from Applanix Support Hub). The LiDAR tools can be run using either the extracted real time trajectory, or the post-processed (SBET) trajectory (for optimal accuracy).

9. WHAT ARE THE MINIMAL COMPUTER REQUIREMENTS?

The LiDAR QC Tools for LV as part of POSPac MMS 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 CAN I PURCHASE LIDAR QC TOOLS?

The tools are available through the Applanix distribution channels. Please contact your regional sales manager for more information.

11. CAN I HAVE A DEMO LICENSE?

Yes, it is possible to get a 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 your regional sales manager for more information.

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