

# GeoSLAM HUB 6.1– FAQ

## **1. Who can use Adjust to Control feature within GeoSLAM Hub 6.1?**

Only users with valid GeoSLAM Care contract can use Adjust to Control feature.

## **2. Will Adjust to Control correct my SLAM drifts?**

Adjust to Control has option for None-Rigid Adjustment. That means that it will again perform Global SLAM on the data with the reference points added as additional constraints. Results of this calculations depend strongly on SLAM condition itself, control points accuracy and reference points detection. User should not expect to correct for big drifts and slips. SLAM best practices need to be maintained for best results.

This also means that any drifts that take an effect over short time scale in the Local SLAM results will not be corrected at all. We may be able to correct gradual drifts, that are only noticeable over a sufficiently large time scale in Local SLAM.

## **3. Can I scan for longer than 20 mins if I use Adjust to Control?**

No, user should keep recommended 20 mins maximum for one closed loop. Adjust to Control will not help with data that does not process due to the extended capturing time.

## **4. Can I scan areas with not many features while using Adjust to Control?**

This is not recommended, as if the Local SLAM processing fails, Adjust to Control will not be able to correct that error.

## **5. Can I scan without closing the loop if I use Adjust to Control?**

Tests have been made on open loops scans and Adjust to Control in certain situations can have positive impact on results of such a data. SLAM best practises need to be maintained during the capture and data should be registered in Local SLAM correctly. If there are any local drifts, they need to be first corrected by processing SLAM with changed parameters and then used via Adjust to Control.

As expected, if none rigid adjustment is processed on a scan without closed loop, the inner geometry of point cloud will be changed more significantly if the data was captured with open loop as it can hold bigger error in the data.

Influence of the adjustment can be mainly visible on height and at the edges of the measuring point cloud.



## **6. Can I use Adjust to Control to align multiple scans together?**

Adjust to Control can be used to align multiple scans together if enough common Reference Points have been collected. This approach might be useful for collecting data regularly from construction site or stockpile measurements, where data needs to be orientated towards each other to extract difference between the consecutive scans. If local control points are set up on site and used every time when scan is performed to mark reference points, that can be used in Adjust to Control to align scans together. If you are thinking to use Adjust to Control for aligning scans, please contact us for any recommendations. This is not implemented in user interface yet and will require some manual work in order to prepare reference point file.

## **7. What is minimum amount of control points that need to be used in Adjust to Control?**

Minimum number of control points that are required in Adjust to Control is 3. However, always try to collect more in the event of low accuracy on some of control points or wrong reference point detection.

## **8. How long do I need to keep system still when collecting Reference Point?**

System should be kept for at least 10 seconds without movement on the control point to ensure better reliability of reference points detection.

## **9. Can I use Reference Points on the wall?**

When using REVO/REVO RT user CANNOT detect reference points on the wall or other non-flat surfaces. Control points must be placed on the flat ground. It is important to keep REVO/REVO RT upright and levelled when collecting Reference Points. For best results system should be also kept as still as possible during that time.

ZEB Horizon, however, has the possibility to detect Reference Points on the walls. It is important to keep ZEB Horizon as much upright as possible and levelled to the surface where control point is. For the best results system should be kept as still as possible during reference points collection. In this case to improve reliability of reference point detection we would recommend keeping system still for slightly longer than standard 10 seconds.

Please refer to Adjust Control User Guide for more details.

## **10. Can I use Control Points measured in US Feet?**

Control Points measured in US Feet are NOT accepted in Adjust to Control processing. Only control points measured in meters can be used to process Adjust to Control. User needs to convert US Feet to meters prior importing control points to Adjust to Control. SLAM performs all measurements and calculations in meters and therefore we expect control points in meters as an input for this feature.

### **11. Is Adjust to Control accounting for Scale Factors?**

Our Rigid Transformation is 3D transformation with 4 degrees of freedom (x,y,z and rotation around yaw axis). It does not calculate or apply Scale at the moment. Coordinate Systems with scale factors in them might results in some measurements errors, visible on larger scale distances. None-Rigid adjustment allows for the internal measurements to change but it is not the typical Scale Factor calculations as it involves SLAM and it varies with a distance from the control point.

In this version of Adjust to Control we would recommend using Coordinate Systems in flat, local grid to avoid any measurement errors.

### **12. Can I merge dataset after performing Adjust to Control?**

Merging datasets that have been processed through Adjust to Control feature is not possible at the moment. We are working on enabling this feature.

### **13. Can I colour dataset after performing Adjust to Control?**

Colouring dataset after performing Adjust to Control is not possible at the moment. Exported results from Adjust to Control will have no RGB values assigned even though the data has been coloured at the start.

### **14. What if my Draw 3.5 does not show a valid license?**

There might be a situation that user will see message about not valid license for new Draw 3.5 version when trying to launch the software straight after installation. This is because the version of the license has to change as well in GeoSLAM and PointCAB database, so it needs internet connection and time for the update.

To overcome this there are few fixes we implemented. We added automatic license refresh when HUB is installed, that needs few minutes after installation is completed with access to the internet to update the license. If user wants to do manual refresh – Refresh Entitlements can be used from HUB interface.