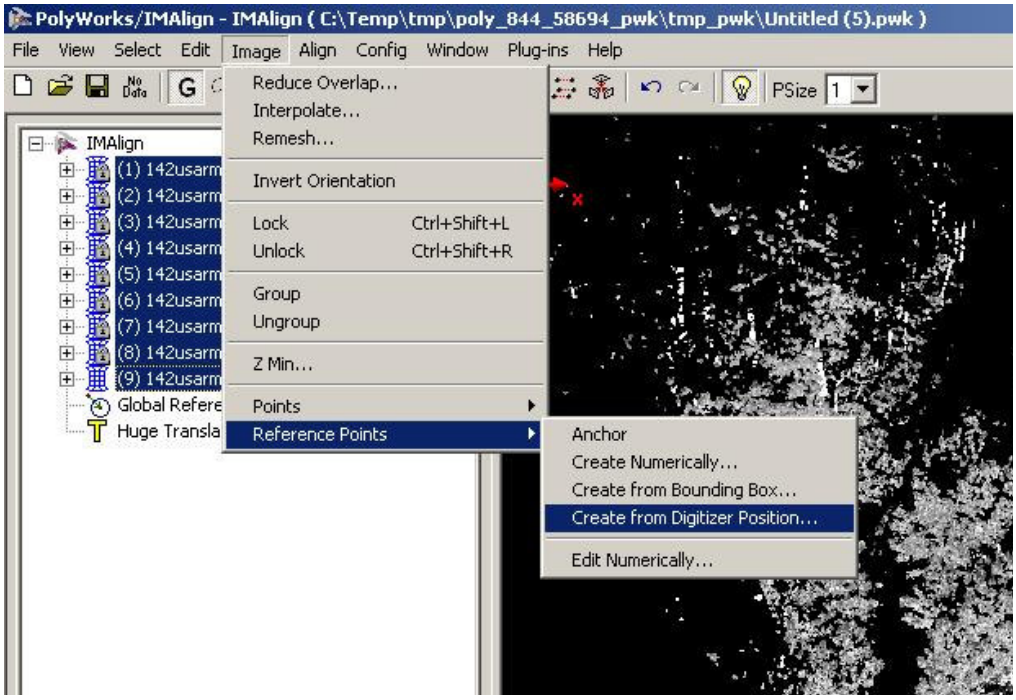
Geo-referencing in IMAlign:

1. After you have aligned all your files save the IMAlign project.

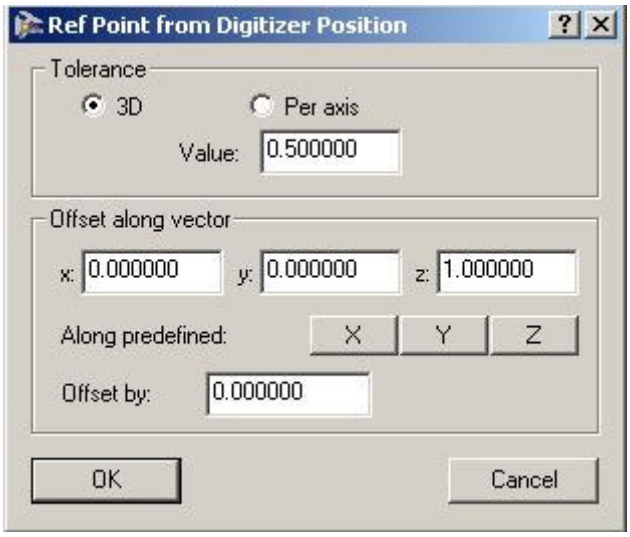
2. Remember to run a Best-Fit Alignment and Comparison by going to this button  to perform a global alignment. This will allow you to get a closer alignment since all the scans will try to move into a precise position compared to all the other scans.

3. Once you are satisfied that the alignment of the scans, create the scanner position so that you can start geo-referencing the file. These scanner positions correspond to GPS coordinates you recorded from the tripod during scanning. To do so follow the steps below:

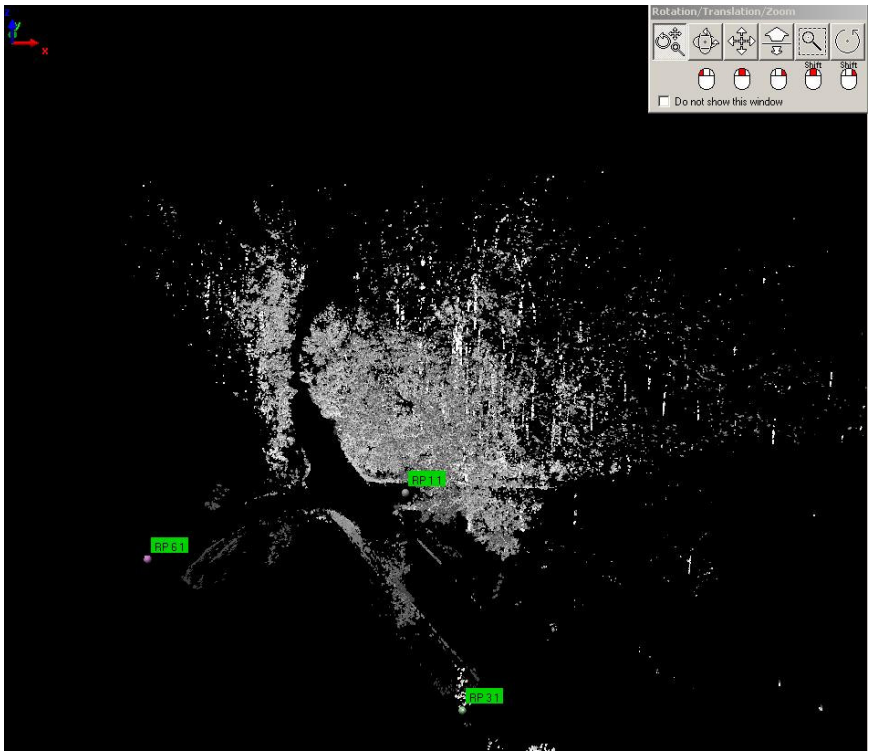
Step 1
Image → Reference Points → Create from Digitizer Position



Step 2
A dialogue box will appear like the one below and press OK to continue.



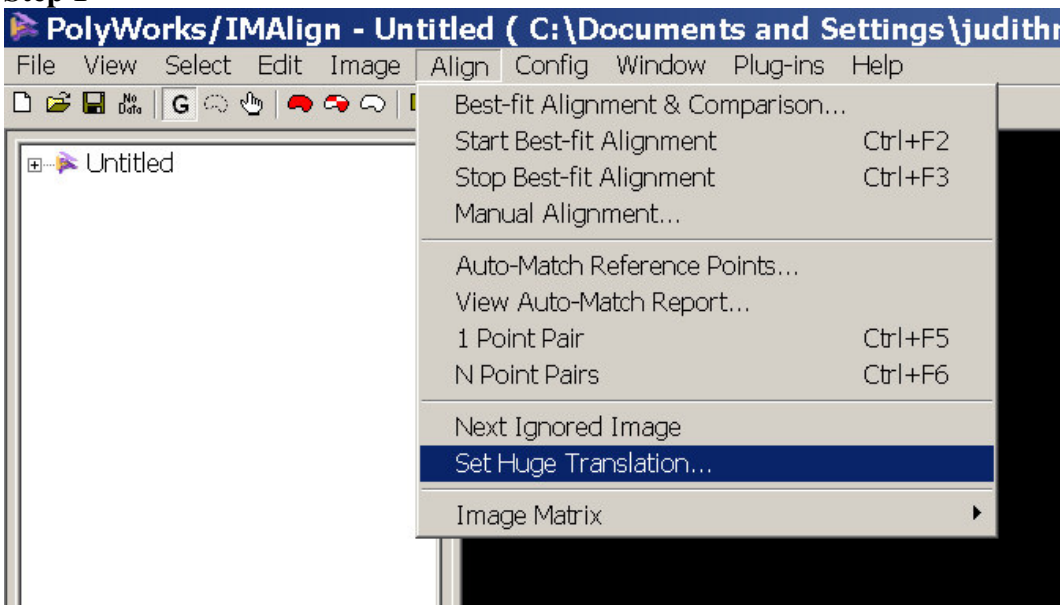
You will see that the scanner position of the ILRIS-3D unit will be shown as seen below.



4. After creating the scanner positions you now have to “Set the Huge Translation” by using one of your recorded GPS coordinates as seen below. This brings the ILRIS-3D scan into the GPS coordinates system so that the program can geo-referenced the aligned scans correctly.

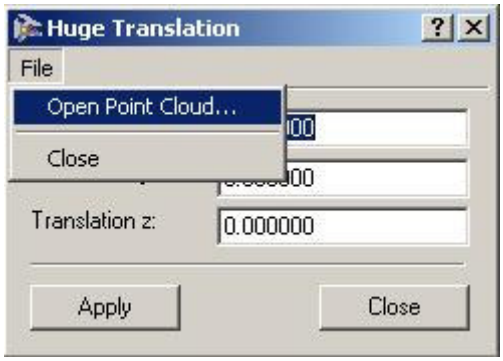
Align → Set Huge Translation

Step 1



Step 2

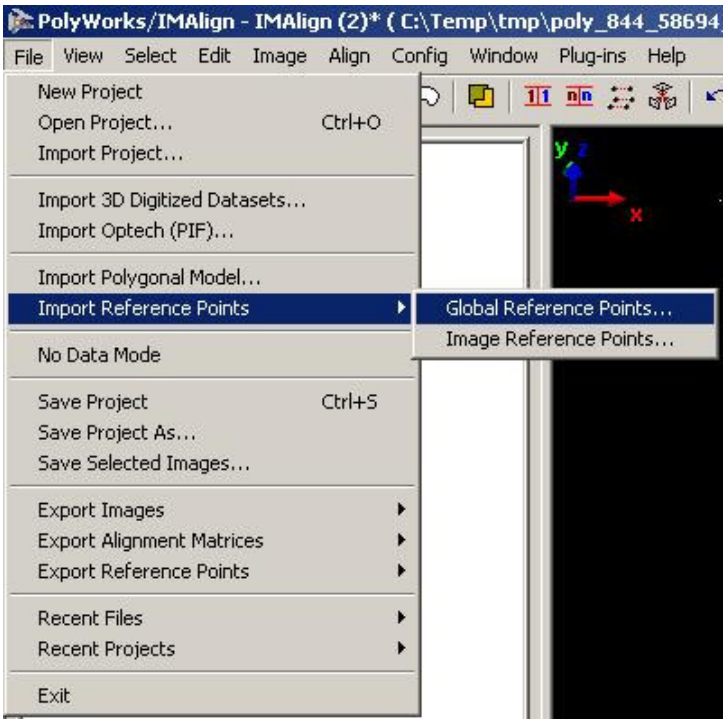
File → Open Point Cloud

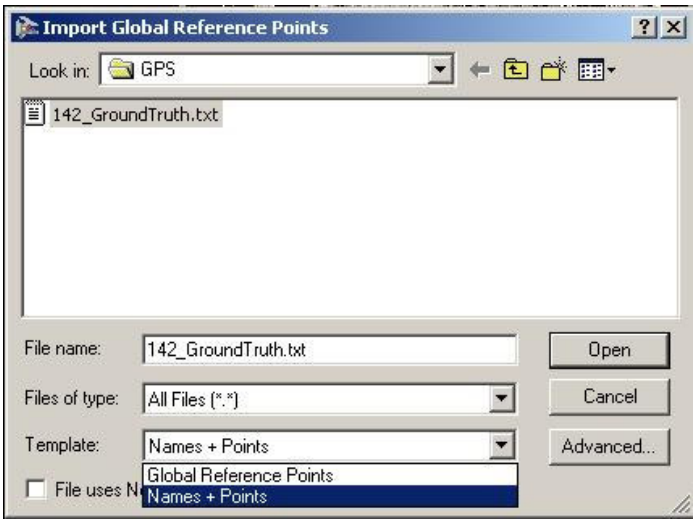


Step 3

Depending on your ground truth GPS file structure you choose either Global Reference Points or in the case above Names + Points.

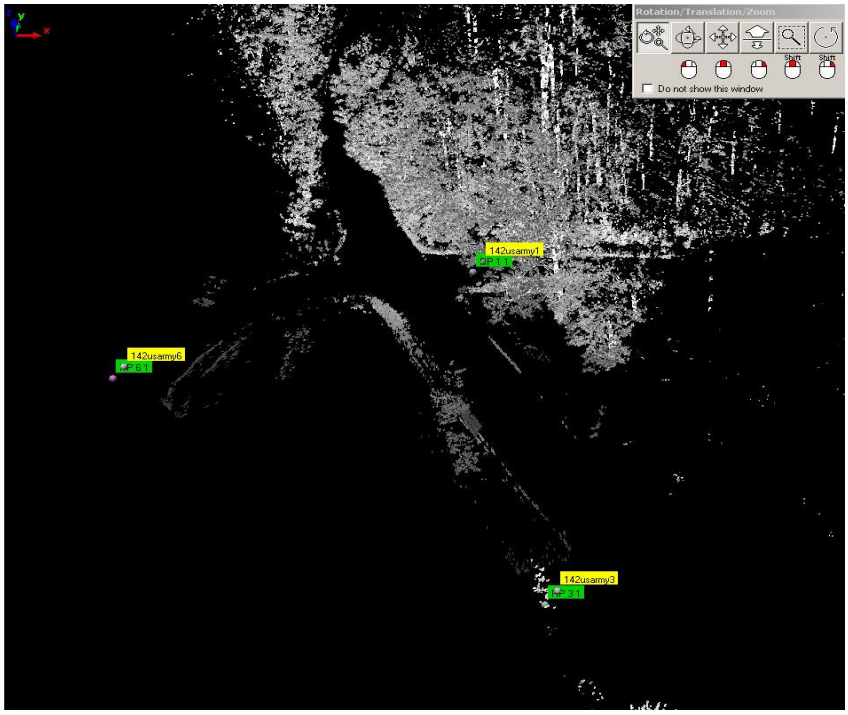
5. Now load in all your recorded GPS coordinates by going to File → Import Reference Points → Global Reference Points as seen below.



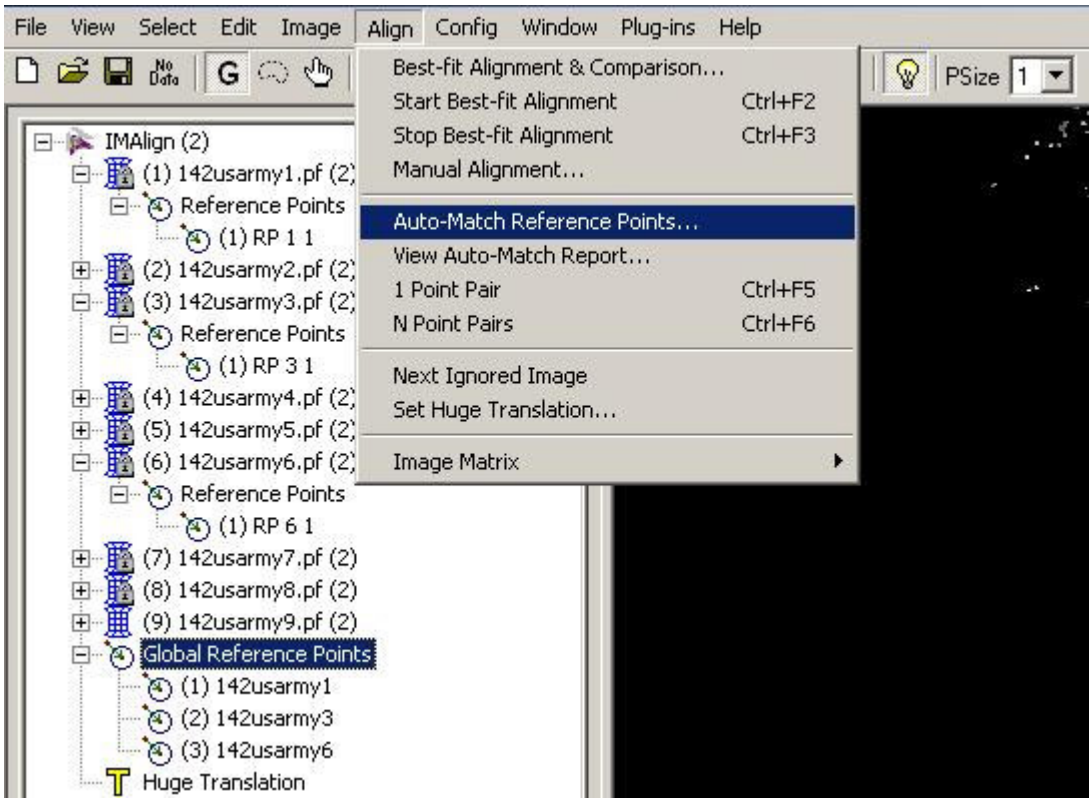


As seen above the GPS ground truth file structure starts with the Names of the co-ordinate and then the X.Y,Z co-ordinates. So we choose Names + Points to keep the same files structure in the IMAlign project. If you do not know the file structure of the GPS points you can use Global Reference Points to import your GPS position.

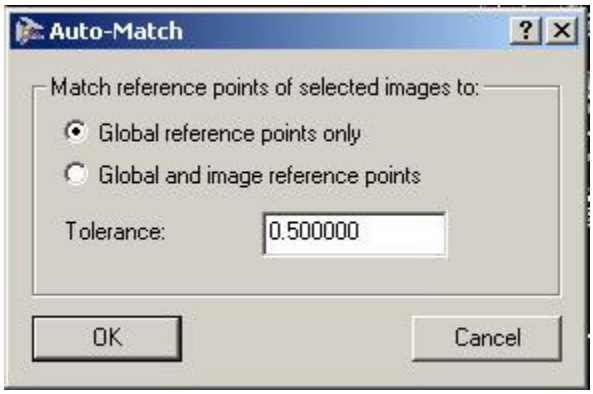
After importing your GPS ground truth points you will see that both the scanner position and the GPS position are on the same window as seen below.

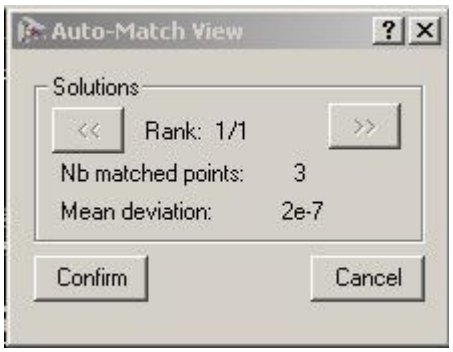


6. Now to geo-reference the scanned data, select all the images in the tree view, and then use the Align → Auto-Match Reference Points command.



A dialogue box like the one below will appear next. Press OK to continue.





Simply choose the correct solution found by the auto-match Algorithm as seen above. 90% of the time, the first solution is the correct one.

7. To save the project, go to File → Save Project As…