



## Processing RTK data in Pix4d Mapper.

### Disclaimer:

*This workflow is provided as a general guide and is intended for informational purposes only. It is based on the author's experience and understanding of the subject. The workflow may not be suitable for all projects or situations and users are encouraged to adapt the workflow to their specific needs and to seek professional advice if necessary.*

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### Introduction.

As part of my workflow, I use either a DJI M200v2 fitted with a X5s and 15mm lens or a DJI M300 fitted with a P1 camera and either a 35mm or 24mm lens. For this explanation I will use the data gathered with the M300 and P1 fitted with the 35mm lens.

It is important the P1 and lens is calibrated correctly and details on how this should be done not be covered in this process however the calibration process can be found on DJI website or a google search.

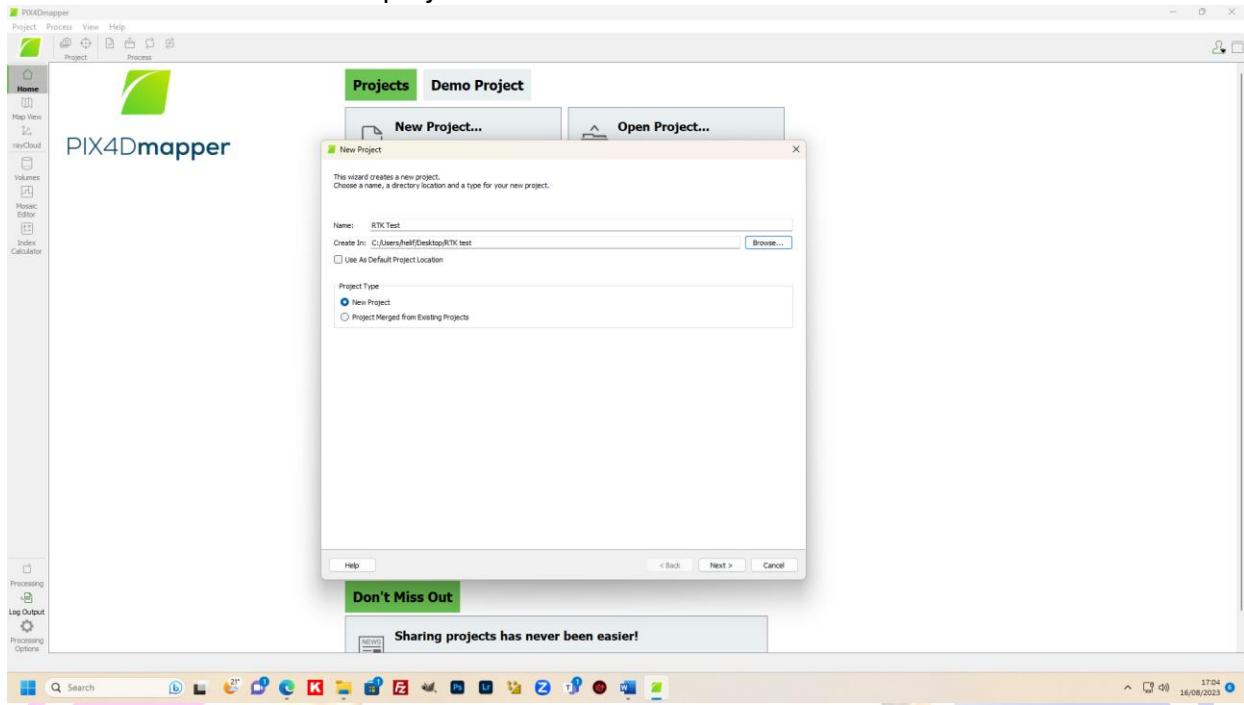
To start the process, it is important that the data collected is the best it can be. To that end, when I am using the M300 with the P1 I use at least 70% side overlap and 80% front and rear overlaps, make sure elevation optimisation is switched OFF and fly the drone as slow as possible but fast enough to make the flight efficient.

Keep the height as low as possible however keep with the drone code for this. Remember that the lower you fly the lower the GSD (Ground Sample Distance) but the longer the flight will take.

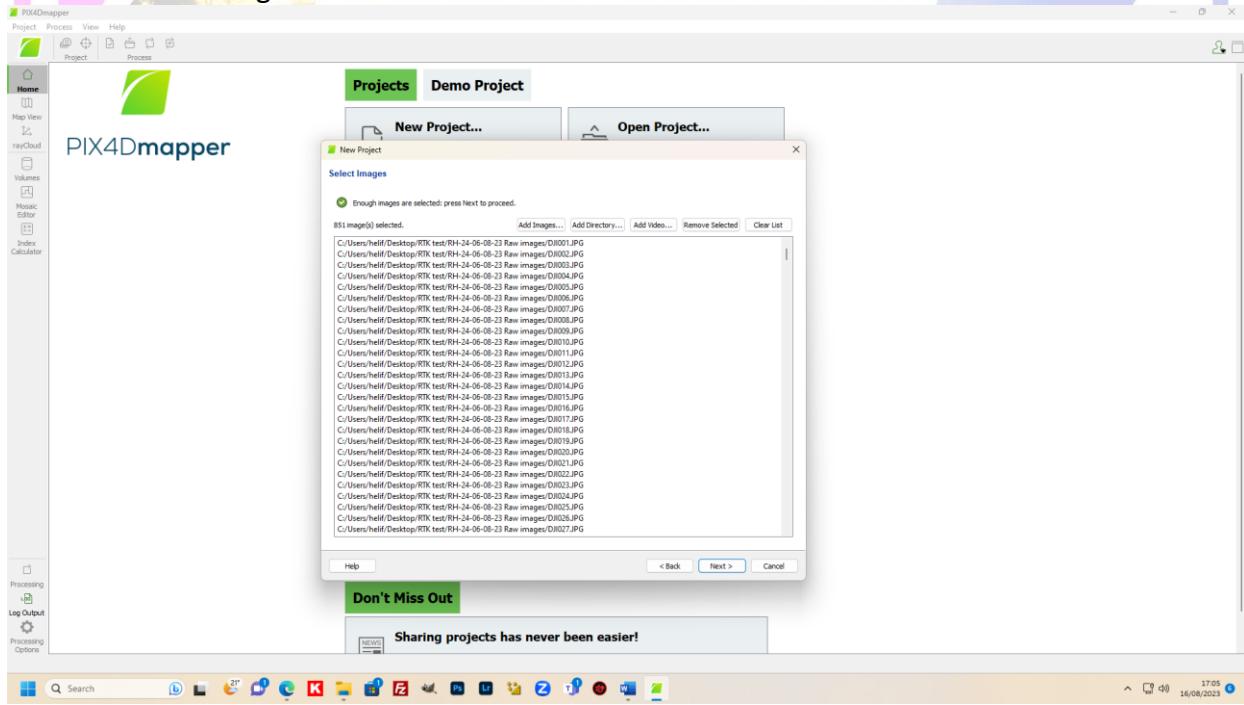
To start the process, you will need the following software installed, Microsoft Excell. Grid inquest and Pix4d mapper. It is very important that when you copy the images from the SD card to your PC **DO NOT** rename the individual files, only the folder if you need to.

The first stage after you have transferred the file to your PC is to copy the EXIF data from the images and to convert them from WGS84 to OSGB36. This is done as below.

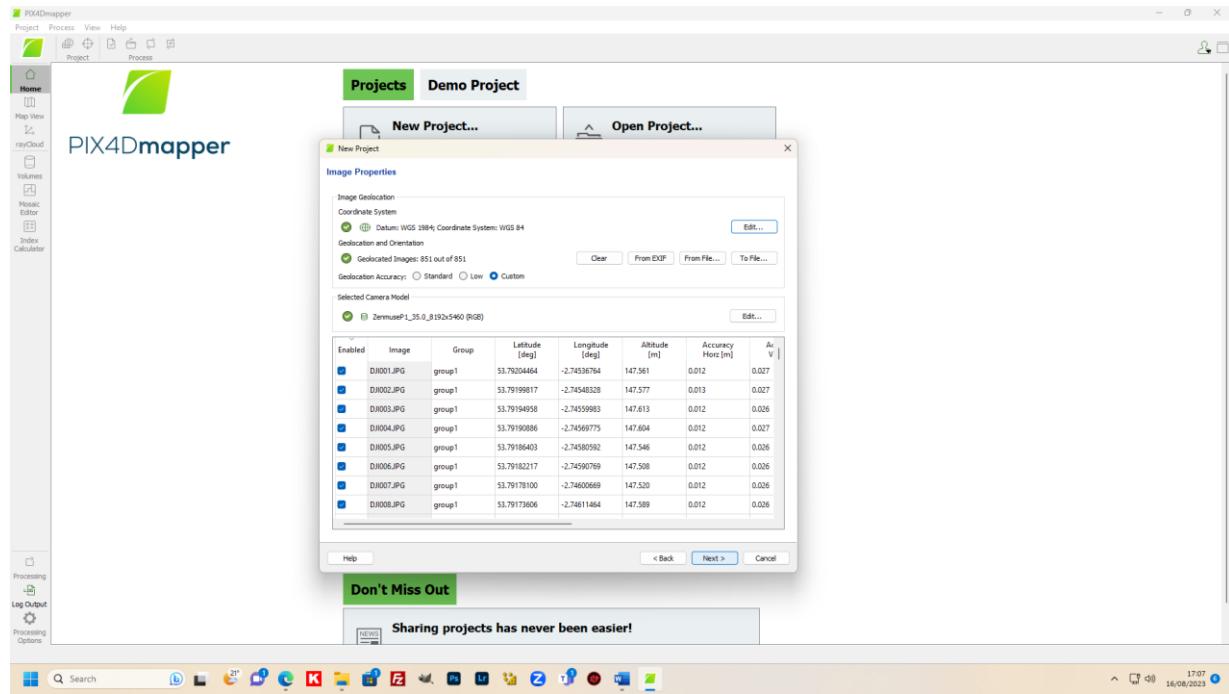
1. Open Pix4d mapper start a new project.
2. Select the location for the project and click Next.



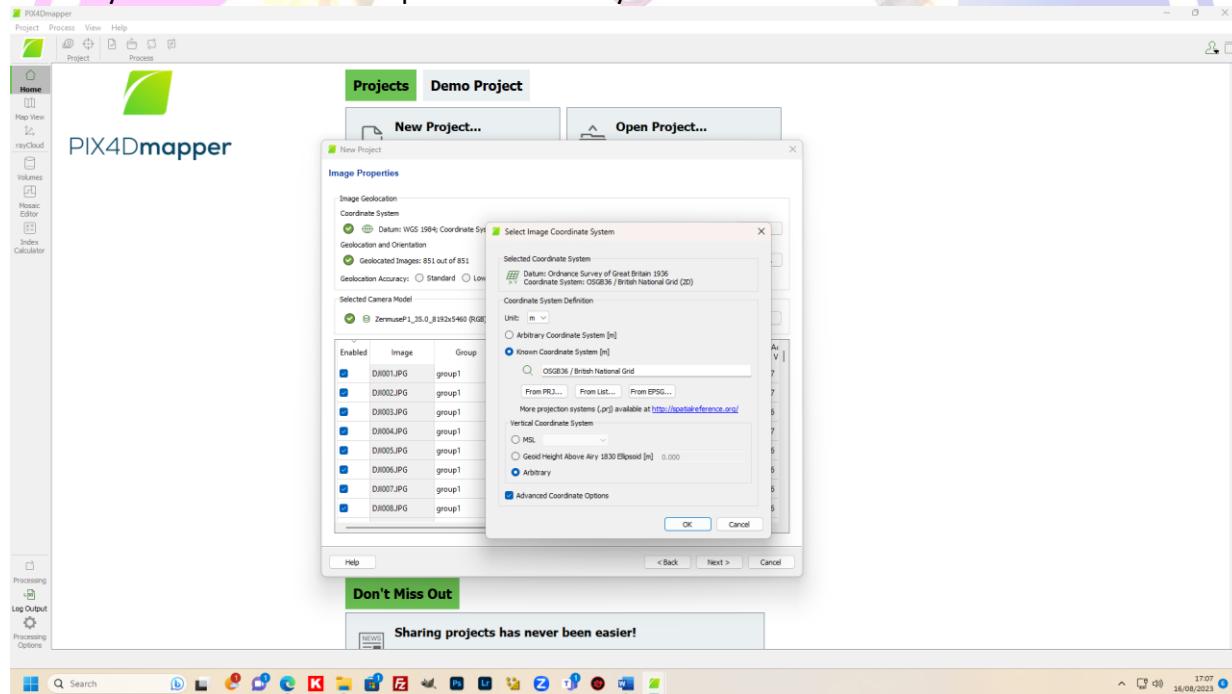
3. Next you need to select all the images for the project. Click on Add images and find the folder with the images in. Then click next.



4. When all the images are loaded the program will extract the EXIF data from the images.

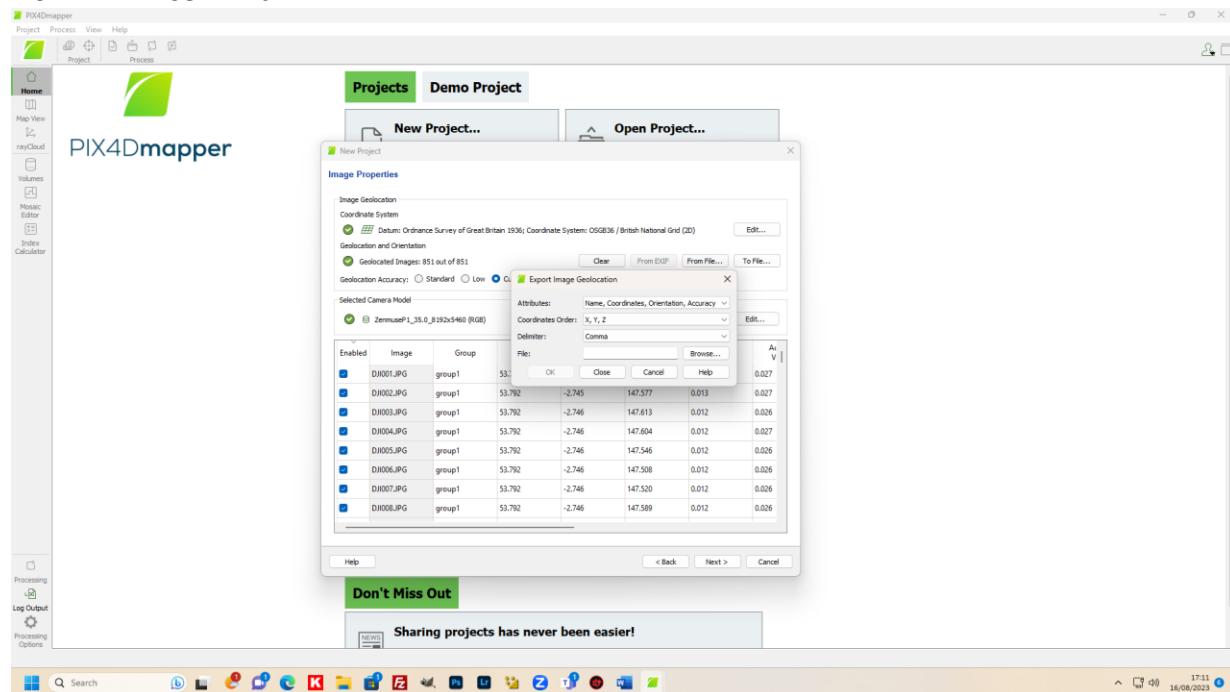


## 5. First you need to edit the input coordinate system.

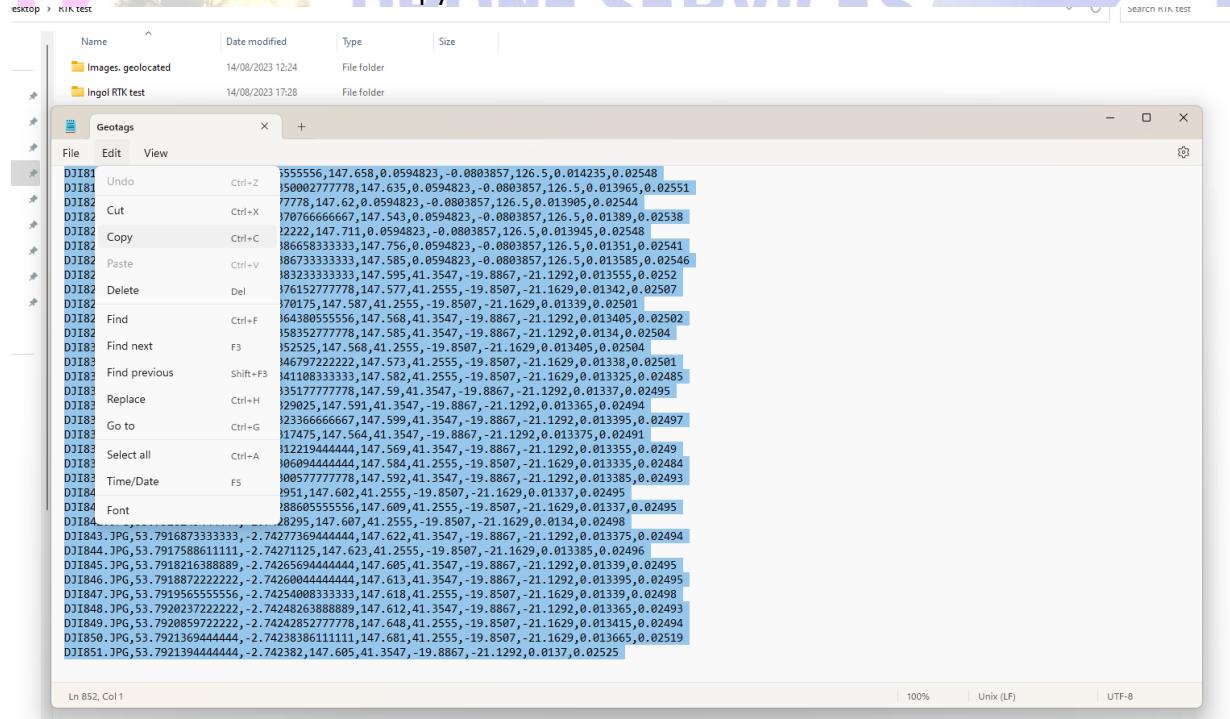


Click edit to the right of the selected Input coordinate system. Type in OSGB and select OSGB1936 British national grid or type 27700 and OSGB1936 British national grid should appear. Select it and then tick the Advanced coordinate options. From the new menu click Arbitrary. Then click OK.

6. Next click “To file” and select a location to save the Geotags. Name the file and click save. Now minimise Pix4d



7. Find the file you just created and open it. It should open in note pad.  
In notepad select edit and then select all from the menu.  
Then select Edit then copy.

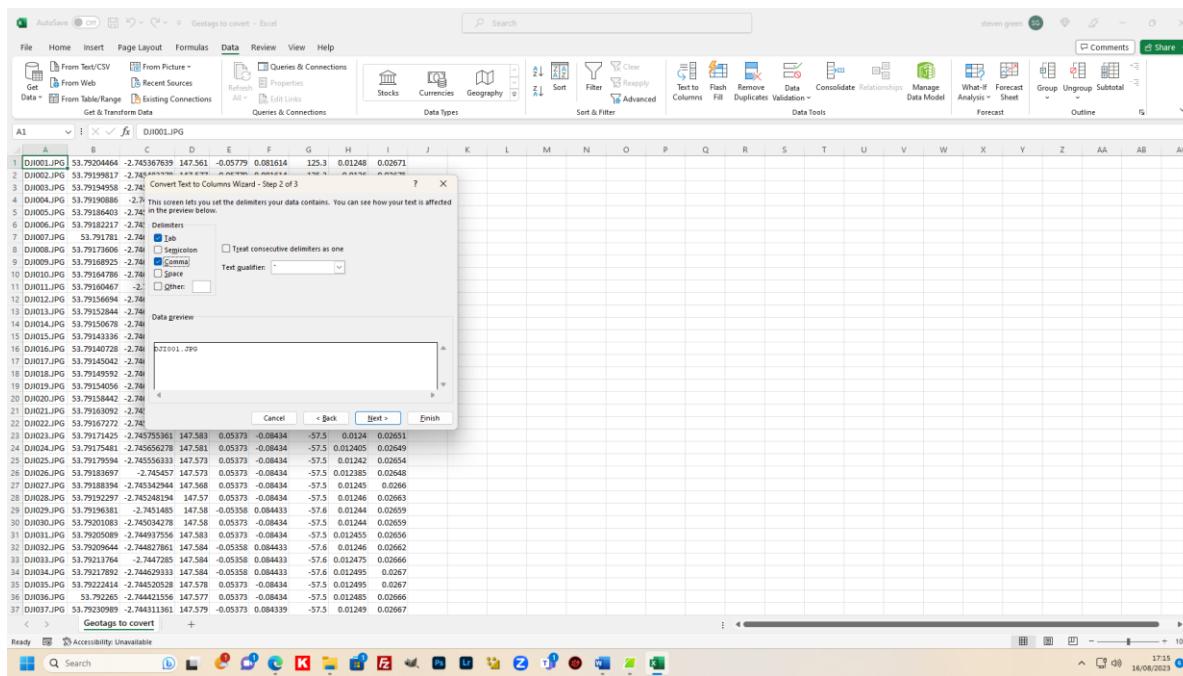


## 8. Next open excel and choose new workbook

9. Click on the top left cell then click paste from the top ribbon bar.

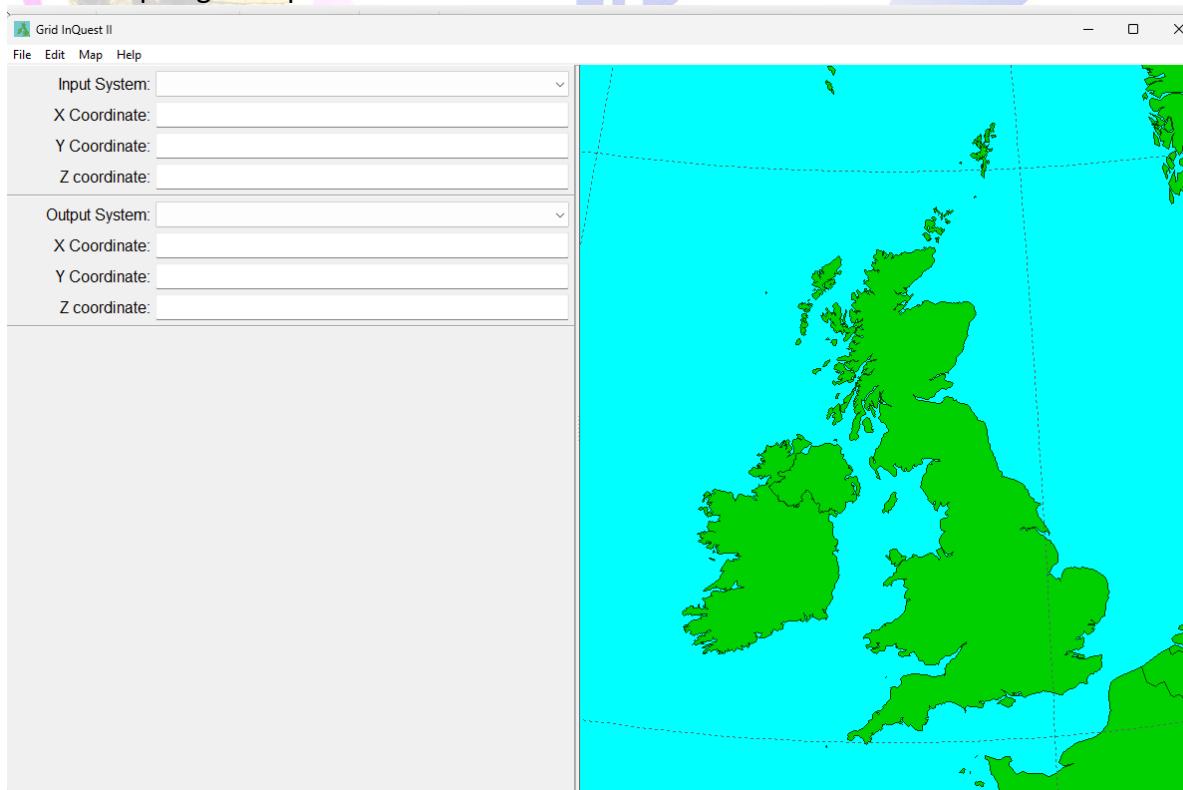
All of the data from the previous sheet should appear in the top left cell.

Select the Data tab from the top ribbon bar then select then click Text to Column. From the menu click next on the bottom right. Select Comma as the delimiter. Click Next then finish.



10. Click File then 'Save as' a CSV in a location you can find it on your PC.

11. Now open grid inquest.



12. Click file then select Load data points. Then find the file you just created and select it.

In the menu that appears.

Select 1 in the box next to Data Starts Row

Select ETRS89 Geodetic for the input coordinate system.

Select Colum 2 for the Latitude.

Select Colum 3 for the Longitude.

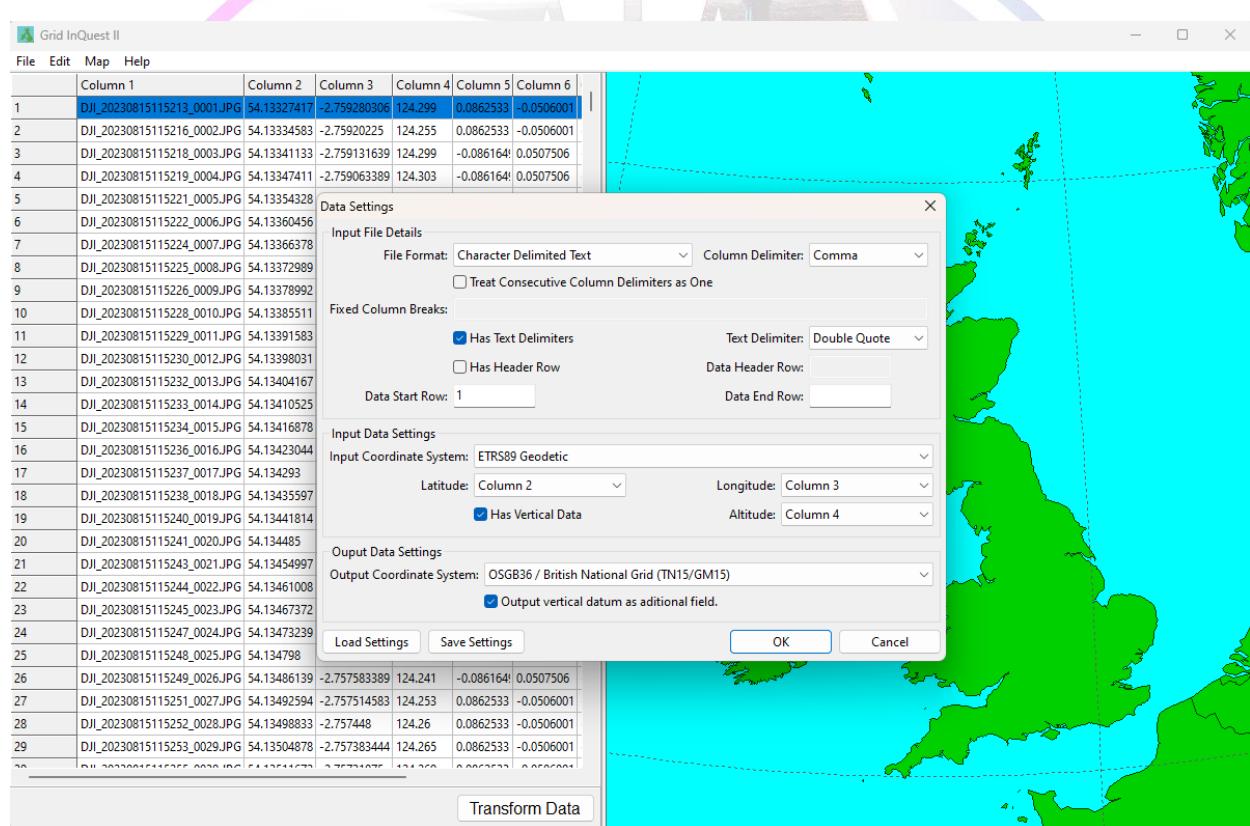
Tick has vertical data.

Select Colum 4 for Altitude.

Select OSGB1936/ British national grid (TN15/GM15)

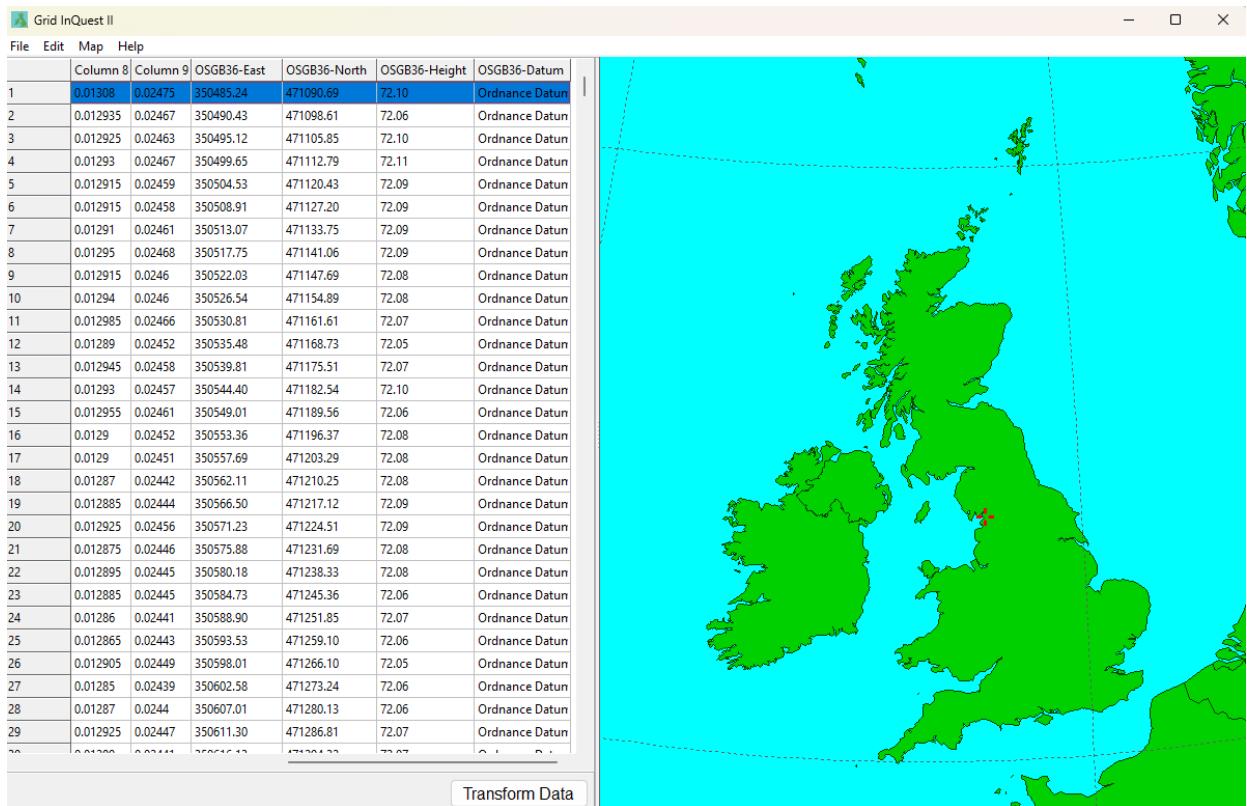
Tick Output vertical datum as additional field.

Click OK.



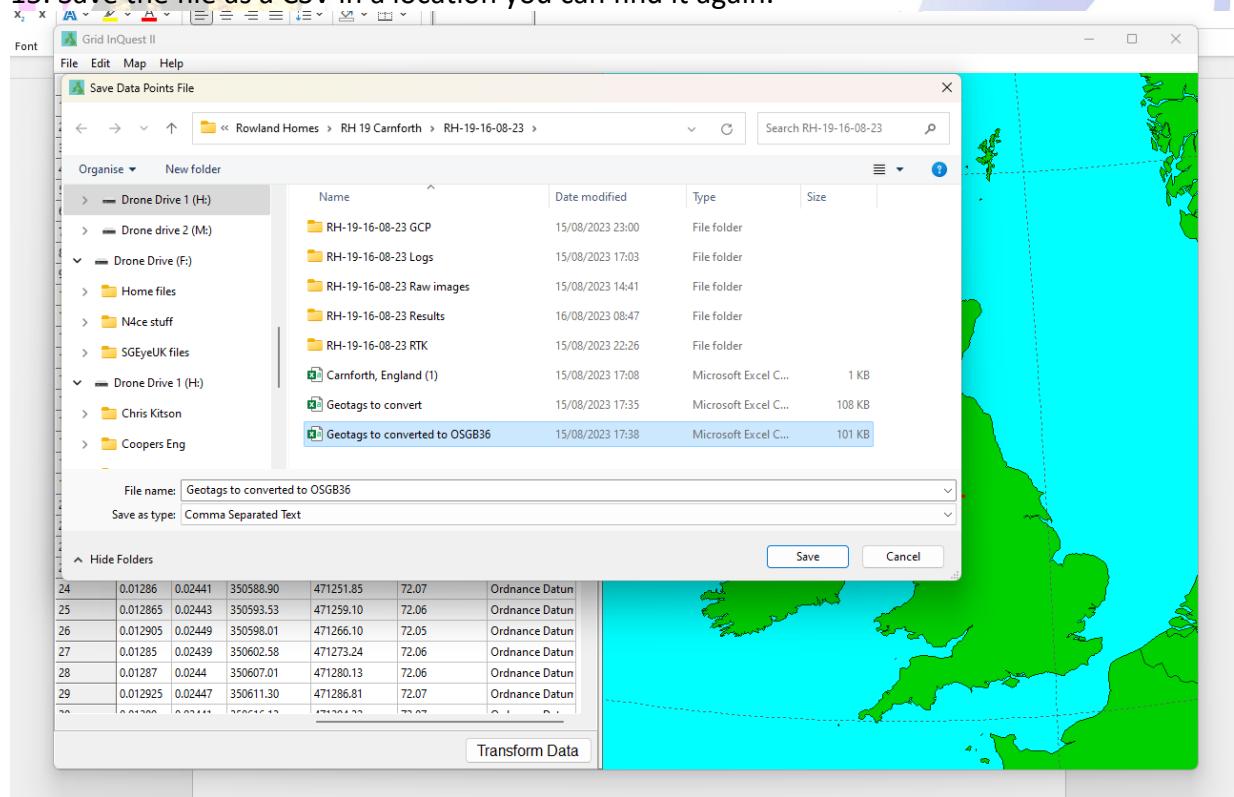
13. Next click Transform data.

You will now have a number of columns with the last 4 titled OSGB East, OSGB North, OSGB Height and OSGB Datum.



14. Click file the select save data points.

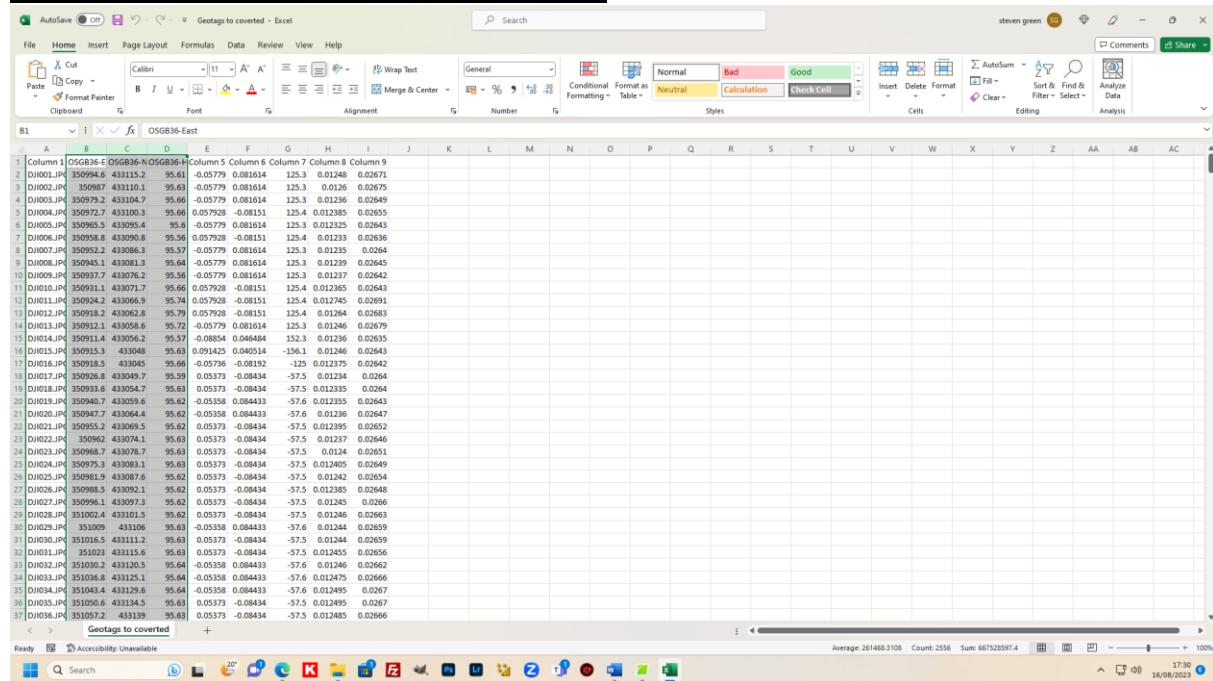
15. Save the file as a CSV in a location you can find it again.



16. Open the CSV file and delete Column H (this contains the name of the datum and is not needed)

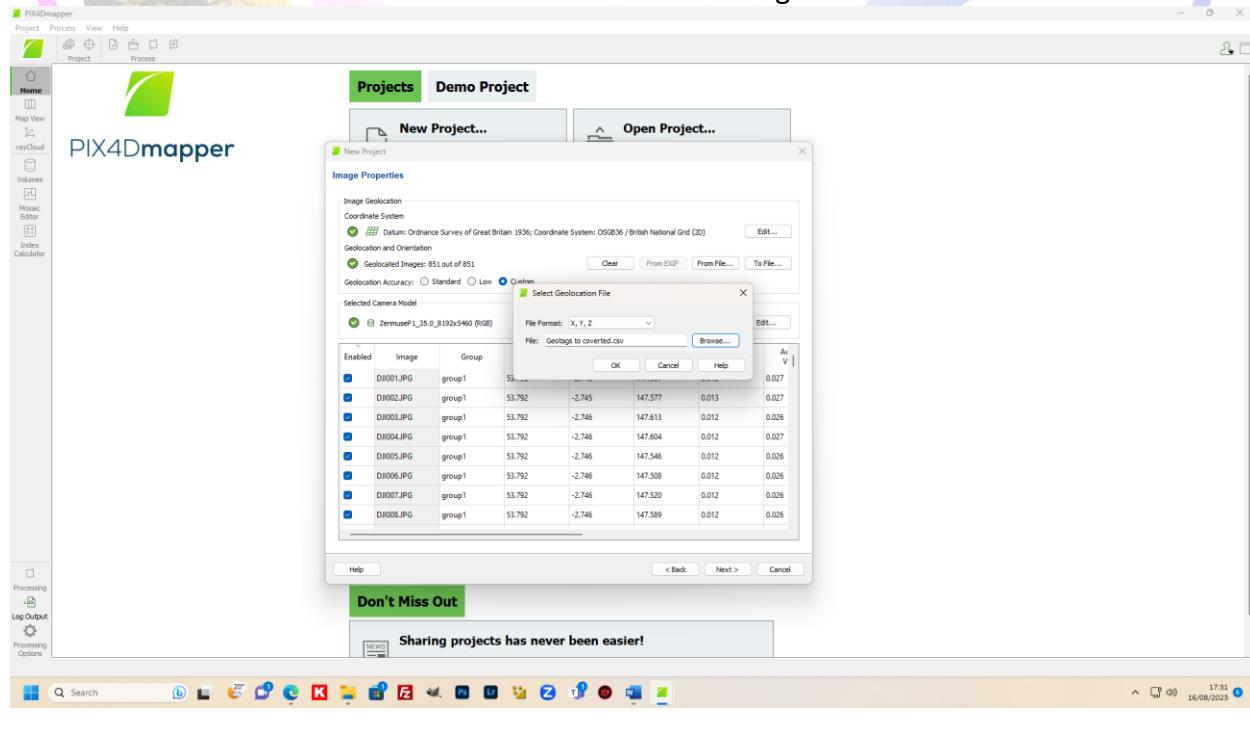
17. Highlight columns E, F and G and drag them over the replace columns B, C and D. Click OK to replace the data. Then click save then close the file.

Please see Notes at the end of this document.

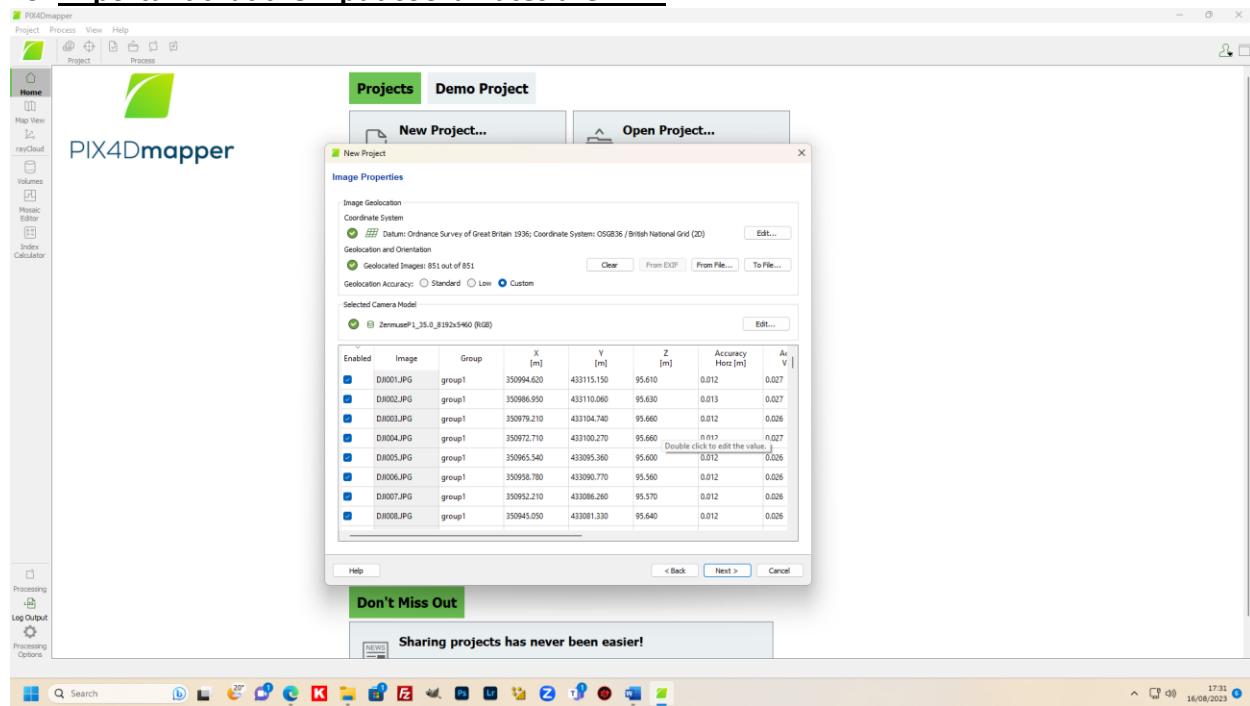


	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC		
1	Column 1	OSGB36 - E	OSGB36 - N	OSGB36 - T	Column 5	Column 6	Column 7	Column 8	Column 9																						
2	DI001.JPG	350994.6	433115.2	95.61	-0.0579	0.081614	125.3	0.01248	0.02671																						
3	DI002.JPG	350987	433110.1	95.63	-0.0579	0.081614	125.3	0.01246	0.02675																						
4	DI003.JPG	350979.2	433104.7	95.66	-0.0579	0.081614	125.3	0.01236	0.02649																						
5	DI004.JPG	350972.7	433100.5	95.66	0.05792	-0.08151	125.4	0.012385	0.02655																						
6	DI005.JPG	350963.5	433095.4	95.6	-0.0579	0.081614	125.3	0.012325	0.02643																						
7	DI006.JPG	350958.4	433090.8	95.56	0.05792	-0.08151	125.4	0.01233	0.02636																						
8	DI007.JPG	350952.4	433085.8	95.56	-0.0579	0.081614	125.3	0.01235	0.02624																						
9	DI008.JPG	350947.1	433081.3	95.56	-0.0579	0.081614	125.3	0.01234	0.02625																						
10	DI009.JPG	350937.7	433076.2	95.56	-0.0579	0.081614	125.3	0.01237	0.02642																						
11	DI010.JPG	350931.1	433071.7	95.66	0.05792	-0.08151	125.4	0.012365	0.02643																						
12	DI011.JPG	350924.2	433066.9	95.74	0.05792	-0.08151	125.4	0.012745	0.02691																						
13	DI012.JPG	350918.2	433062.8	95.79	0.05792	-0.08151	125.4	0.01264	0.02683																						
14	DI013.JPG	350912.1	433058.8	95.72	-0.0579	0.081614	125.3	0.01246	0.02679																						
15	DI014.JPG	350911.8	433056.2	95.57	-0.0884	0.046484	125.3	0.01236	0.02635																						
16	DI015.JPG	350913.3	433044.8	95.63	0.01423	0.040514	-136.1	0.01246	0.02643																						
17	DI016.JPG	350918.5	433040.4	95.66	-0.0579	0.08192	-125	0.012375	0.02642																						
18	DI017.JPG	350928.4	433039.5	95.56	0.05373	-0.08151	-97.5	0.01234	0.02624																						
19	DI018.JPG	350921.8	433037.7	95.63	0.05373	-0.08151	-97.5	0.01235	0.02636																						
20	DI019.JPG	350945.7	433059.6	95.62	0.05350	0.084433	-57.6	0.012355	0.02643																						
21	DI020.JPG	350947.7	433054.4	95.62	0.05350	0.084433	-57.6	0.012336	0.02647																						
22	DI021.JPG	350952.3	433069.5	95.62	0.05373	0.084344	-57.5	0.012395	0.02652																						
23	DI022.JPG	350952.9	433074.5	95.63	0.05373	-0.084344	-57.5	0.01237	0.02646																						
24	DI023.JPG	350968.7	433078.1	95.63	0.05373	-0.084344	-57.5	0.0124	0.02651																						
25	DI024.JPG	350975.3	433083.1	95.63	0.05373	-0.084344	-57.5	0.012405	0.02649																						
26	DI025.JPG	350981.9	433087.4	95.62	0.05373	-0.084344	-57.5	0.01242	0.02654																						
27	DI026.JPG	350988.4	433092.1	95.62	0.05373	-0.084344	-57.5	0.012385	0.02648																						
28	DI027.JPG	351001.4	433101.5	95.62	0.05373	-0.084344	-57.5	0.01246	0.02693																						
29	DI028.JPG	351009.7	433106.4	95.62	0.05373	-0.084344	-57.5	0.01244	0.02659																						
30	DI029.JPG	351009.3	433106.4	95.63	0.05350	0.084433	-57.6	0.01244	0.02659																						
31	DI030.JPG	351018.5	433111.2	95.63	0.05373	-0.084344	-57.5	0.01244	0.02659																						
32	DI031.JPG	351031.2	433115.5	95.63	0.05373	-0.084344	-57.5	0.012455	0.02656																						
33	DI032.JPG	351030.2	433120.5	95.64	-0.05350	0.084433	-57.6	0.012475	0.02666																						
34	DI033.JPG	351036.8	433125.1	95.64	-0.05350	0.084433	-57.6	0.012475	0.02666																						
35	DI034.JPG	351043.4	433129.6	95.64	-0.05350	0.084433	-57.6	0.012495	0.0267																						
36	DI035.JPG	351056.6	433134.5	95.63	0.05373	-0.084344	-57.5	0.012495	0.0267																						
37	DI036.JPG	351057.2	433133.9	95.63	0.05373	-0.084344	-57.5	0.012485	0.02666																						

18. Now go back to Pix4d and click "From file" and then click browse and lock the file you just amended. Then click OK. The coordinates should now change to OSGB from WGS84.



## 19. Important that the input coordinates are XYZ.



## 20. Now you can process in Pix4d as normal.

### Note.

Sometimes the transformation creates an error on the first line of coordinates for the first image. As seen below there have been some extra symbols added to column A, line 2.

If left as is these extra symbols mean that the first image EXIF data won't transform in Pix4d. Simply delete these extra symbols without deleting the DJI file name for that image and save before you import this file into Pix4d.

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Screenshot of Microsoft Excel showing a table of coordinates. The table has columns A through Z and rows 1 through 37. The first few rows are as follows:

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	AB	AC
1	Column I	050836-E	050836-N	050836-H	Column 5	Column 6	Column 7	Column 8	Column 9																			
2	In DJI	334041.7	430004.4	61.52	-0.09233	0.099573	-95.2978	0.012405	0.02162																			
3	DJI 20250	334041.7	430004.2	61.5	-0.09006	-0.09959	-95.1978	0.012445	0.02167																			
4	DJI 20250	334050.4	430039	61.52	-0.09006	-0.09959	-95.1978	0.012405	0.02159																			
5	DJI 20250	334050.4	430039	61.52	0.099233	0.099573	95.2978	0.012445	0.02168																			
6	DJI 20250	334060.7	430038.2	61.53	-0.09006	-0.09959	-95.1978	0.012475	0.02179																			
7	DJI 20250	334060.9	430037.4	61.54	-0.09006	-0.09959	-95.1978	0.012455	0.02175																			
8	DJI 20250	334073.5	430038.5	61.55	0.099233	0.099573	95.2978	0.012405	0.02167																			
9	DJI 20250	334080.9	430035.5	61.55	0.099233	0.099573	95.2978	0.01243	0.02169																			
10	DJI 20250	334080.5	430034.5	61.58	0.099233	0.099573	95.2978	0.01242	0.02171																			
11	DJI 20250	334094.6	430033	61.58	0.099233	0.099573	95.2978	0.01238	0.02158																			
12	DJI 20250	334111.3	430011.2	61.59	-0.09006	-0.09959	-95.2978	0.012365	0.02162																			
13	DJI 20250	334111.3	430011.2	61.59	-0.09006	-0.09959	-95.2978	0.012365	0.02160																			
14	DJI 20250	334119.2	430009.2	61.61	-0.09006	-0.09959	-95.1978	0.01241	0.02159																			
15	DJI 20250	334126	430009.2	61.61	-0.09006	-0.09959	-95.1978	0.01244	0.02163																			
16	DJI 20250	334133.6	430028.2	61.62	-0.09006	-0.09959	-95.1978	0.012875	0.02198																			
17	DJI 20250	334140.9	430027.2	61.63	-0.09006	-0.09959	-95.1978	0.012915	0.02203																			
18	DJI 20250	334148.4	430026.2	61.65	-0.09006	-0.09959	-95.1978	0.012364	0.02194																			
19	DJI 20250	334156.2	430025.2	61.67	-0.09006	-0.09959	-95.1978	0.01264	0.02189																			
20	DJI 20250	334163.4	430024.2	61.67	-0.09006	-0.09959	-95.1978	0.01259	0.02181																			
21	DJI 20250	334171.1	430023.1	61.69	-0.09006	-0.09959	-95.2978	0.012361	0.02184																			
22	DJI 20250	334176.6	430022.1	61.7	-0.09006	-0.09959	-95.1978	0.01262	0.02183																			
23	DJI 20250	334185.6	430021.1	61.7	-0.09006	-0.09959	-95.1978	0.01258	0.0218																			
24	DJI 20250	334193.6	430020.1	61.7	-0.09006	-0.09959	-95.1978	0.01262	0.02185																			
25	DJI 20250	334201.9	430019.1	61.74	-0.09006	-0.09959	-95.1978	0.012625	0.02183																			
26	DJI 20250	334207.9	430018.1	61.75	-0.09006	-0.09959	-95.1978	0.012625	0.02183																			
27	DJI 20250	334215.5	430017	61.75	-0.09006	-0.09959	-95.1978	0.012615	0.0218																			
28	DJI 20250	334223.2	430016	61.75	-0.09006	-0.09959	-95.1978	0.012625	0.02183																			
29	DJI 20250	334230.3	430015	61.74	-0.09006	-0.09959	-95.1978	0.01266	0.02188																			
30	DJI 20250	334238.2	430013.9	61.76	0.099233	0.099573	95.2978	0.012361	0.02184																			
31	DJI 20250	334245.1	430012.9	61.77	-0.09006	-0.09959	-95.1978	0.012605	0.0218																			
32	DJI 20250	334252.5	430011.9	61.77	-0.09006	-0.09959	-95.1978	0.012625	0.02185																			
33	DJI 20250	334260.1	430010.9	61.78	-0.09006	-0.09959	-95.1978	0.01267	0.02192																			
34	DJI 20250	334267.6	430009.9	61.79	-0.09006	-0.09959	-95.1978	0.01228	0.02208																			
35	DJI 20250	334275.4	430008.9	61.81	-0.09006	-0.09959	-95.1978	0.01278	0.02238																			
36	DJI 20250	334282.5	430007.9	61.81	-0.09006	-0.09959	-95.1978	0.012845	0.02246																			
37	DJI 20250	334289.9	430006.8	61.82	-0.09006	-0.09959	-95.1978	0.012785	0.02195																			