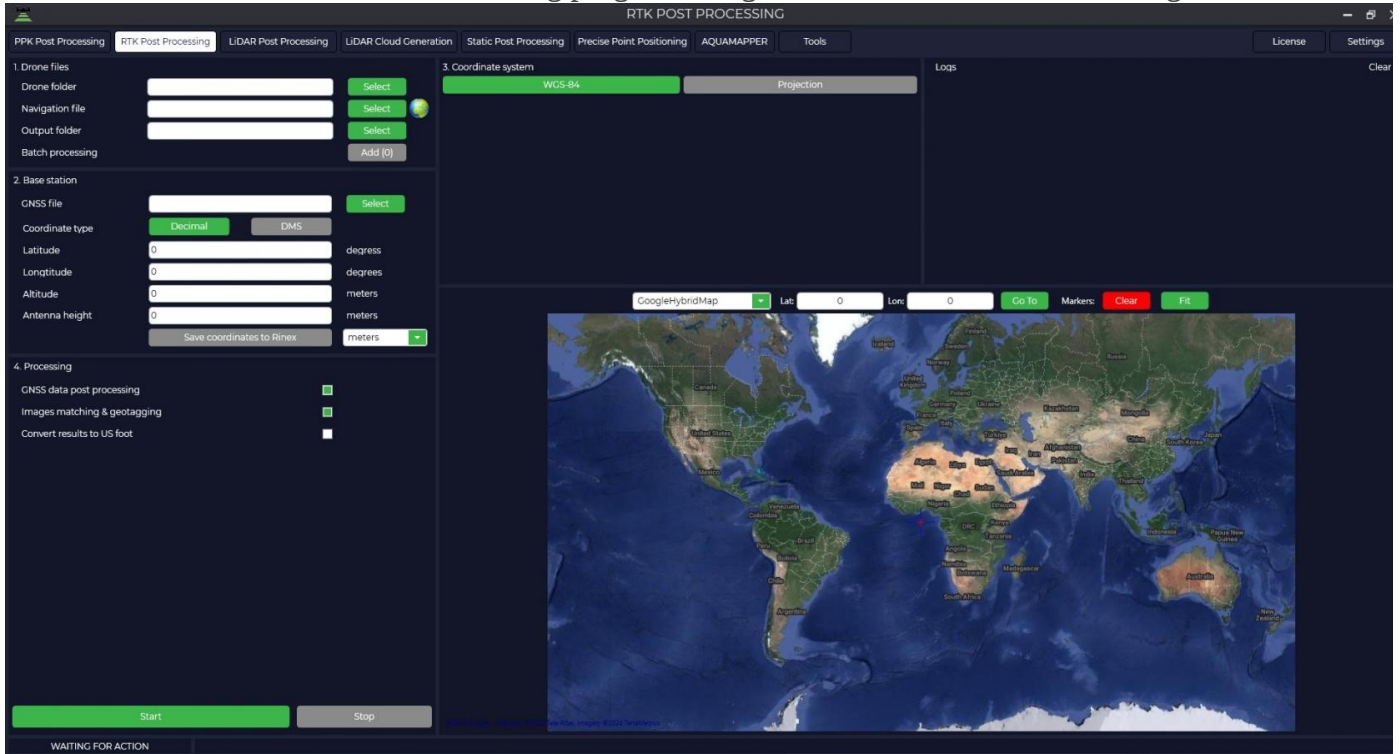


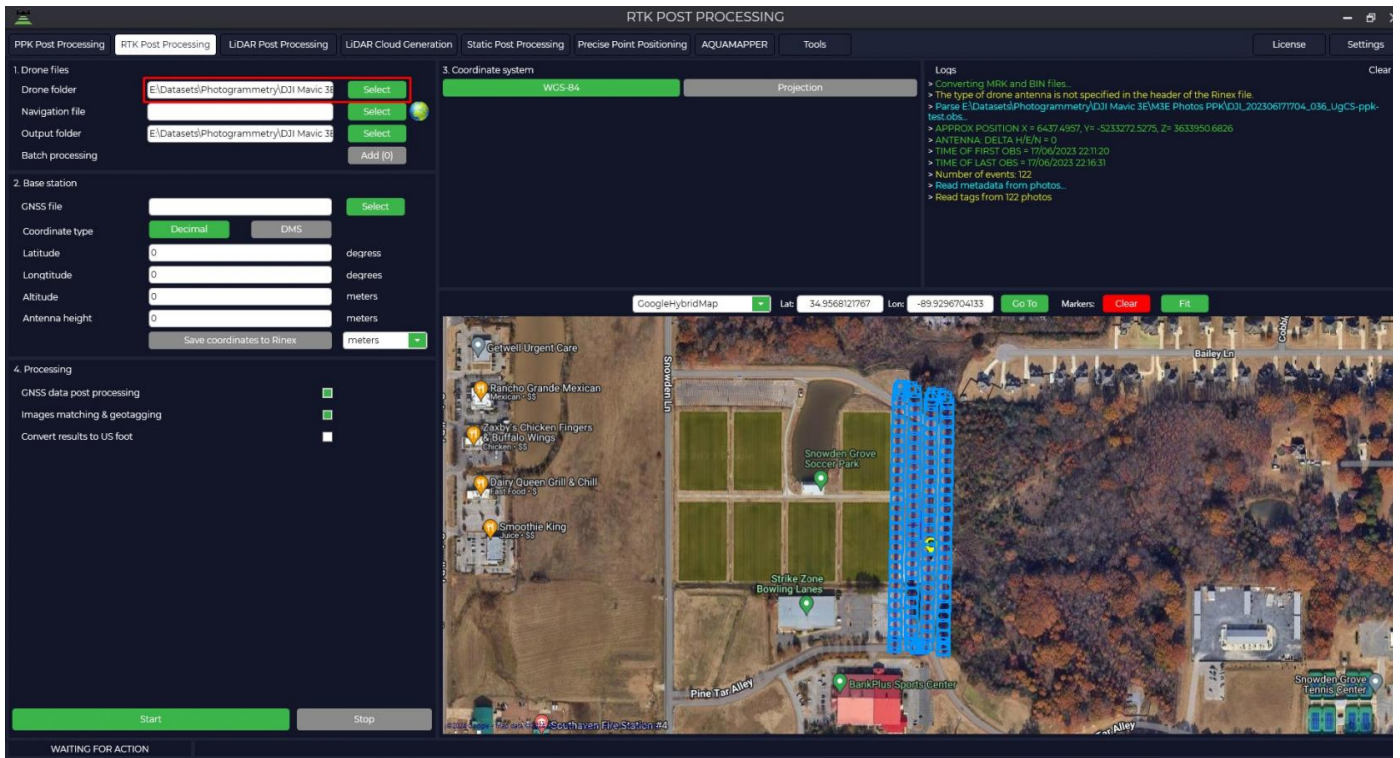
RTK Post Processing

This module allows automatic processing of GNSS measurements from many aircraft, including DJI Phantom 4 RTK, DJI Matrice 300 RTK, DJI Mavic 3 Enterprise + RTK, Autel Evo II Dual RTK. To perform processing in this module, perform the following procedure:

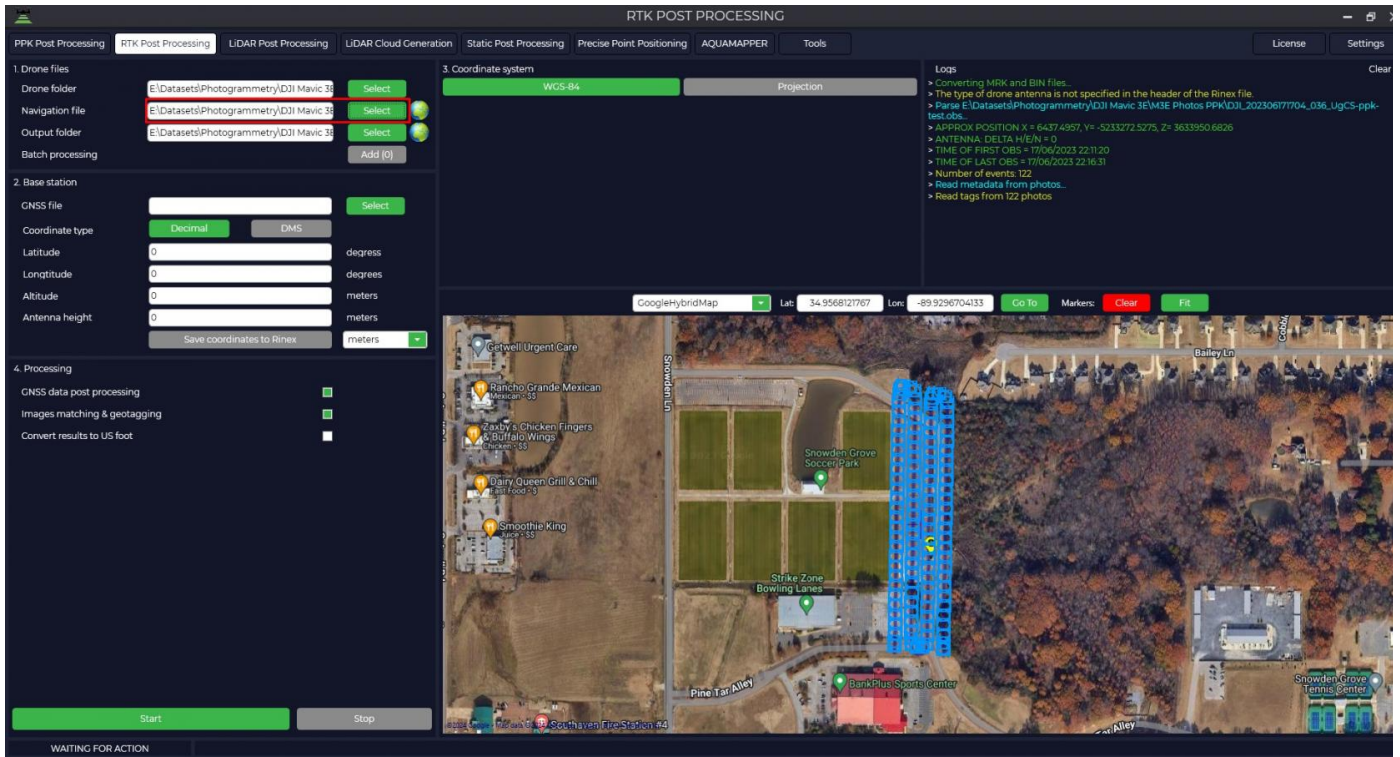
1. Start the TOPODRONE Post Processing program and go to the tab RTK Post Processing.



2. Select the folder with the data collected during the flight. This folder should contain the following files: all photos without renaming or deleting, *.bin, *.obs, *.nav, and *.MRK. A folder with processed results will be automatically created, which can be modified if necessary.

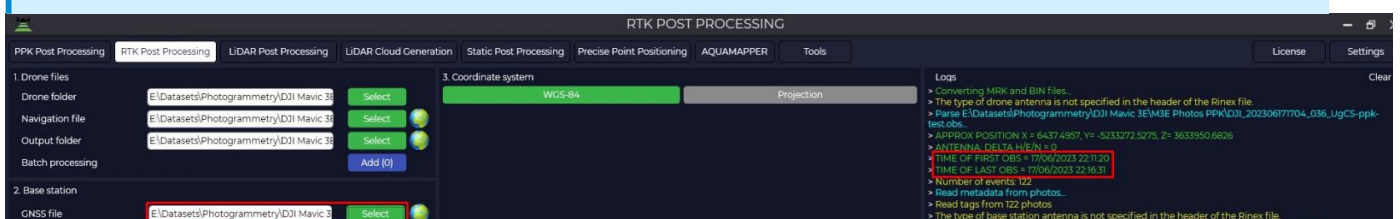


3. Select the *.nav file from the drone.



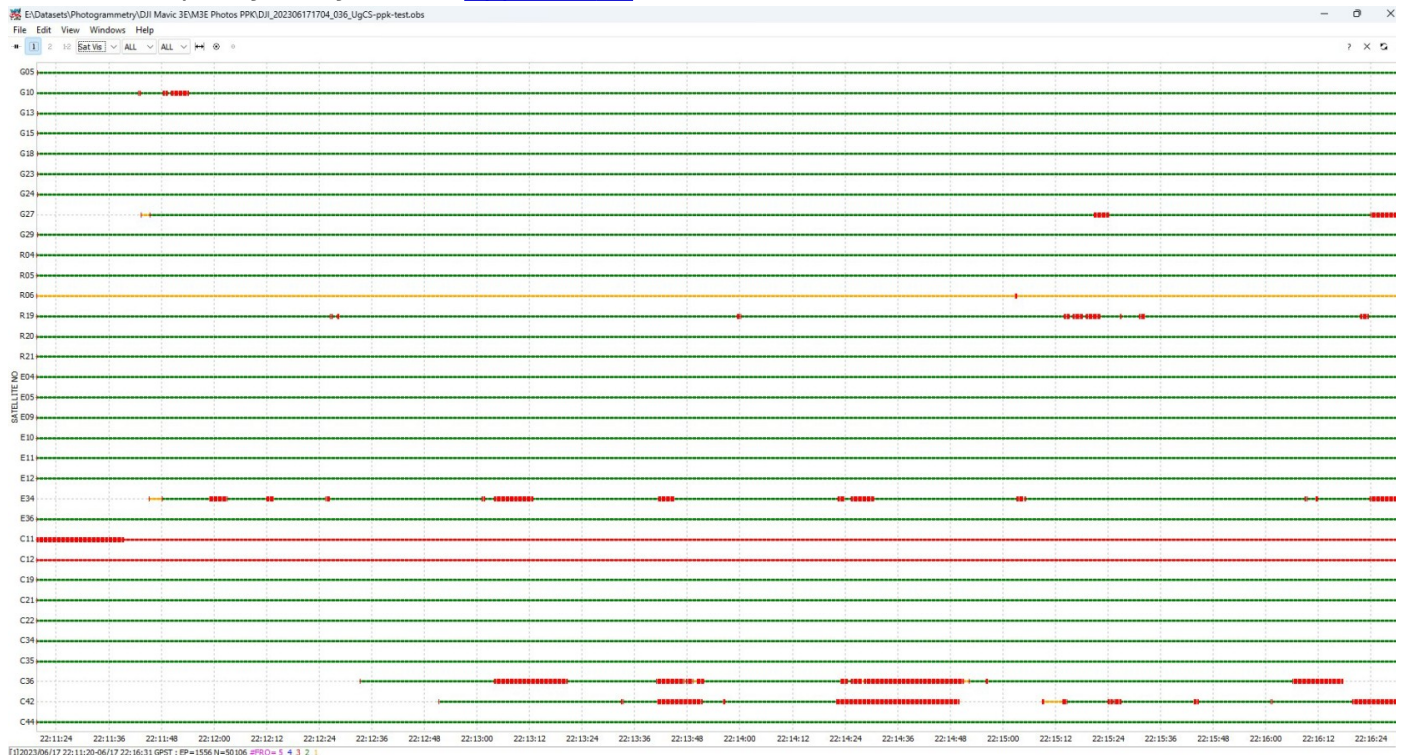
4. Select the file from the base station (*.ubx, *.obs, *.rnx, *.o). For *.rnx and *.ubx files, it will automatically start the conversion process to *.obs format.

The "Logs" window displays information about actions performed by the program, it is necessary to pay attention to the time of file recording from the rover and from the base station. The base station file must overlap the rover files.



The program will automatically load base station coordinates and base antenna height from the Rinex file, taking into account that it was entered during measurement.

5. By pressing the  button you can analyze the quality of the data. For more information about data quality analysis, see [Appendix B](#).



6. In case your coordinate system is different from WGS-84, you need to click the "Projection" button and select your coordinate system from the proposed list or enter the coordinate system name in the search bar. When you select the coordinate system, the conversion from WGS-84 to the selected projection will take place.

3. Coordinate system

WGS-84

Projection

Calibration

Not used

Elevation

Ellipsoid by projection

Projection

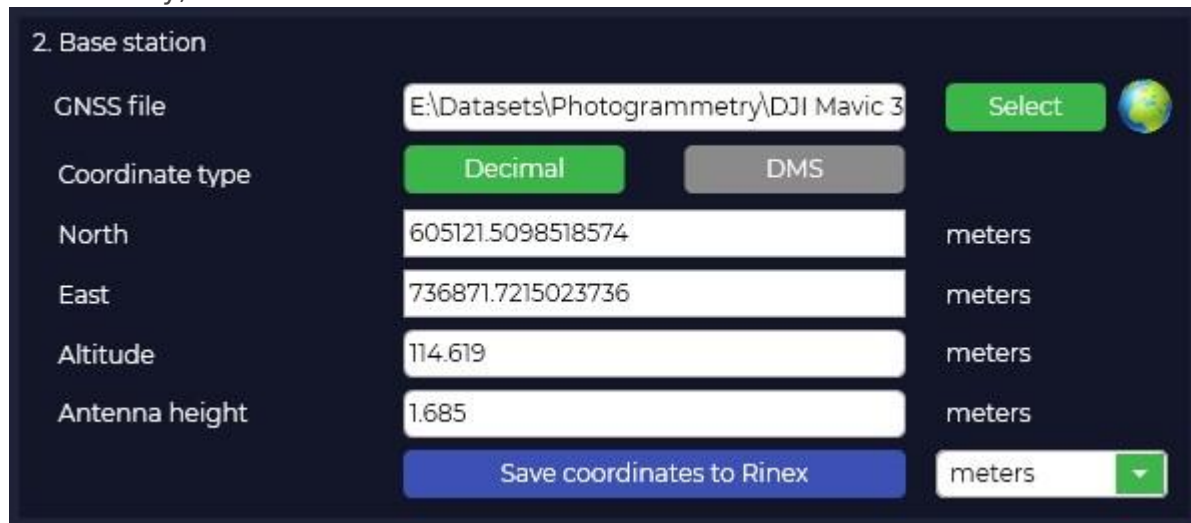
USA-Mississippi-NAD83(2011)-Mississippi West (m) EPSG 6509

7. If necessary, select the "Elevation Type" for your coordinate system.



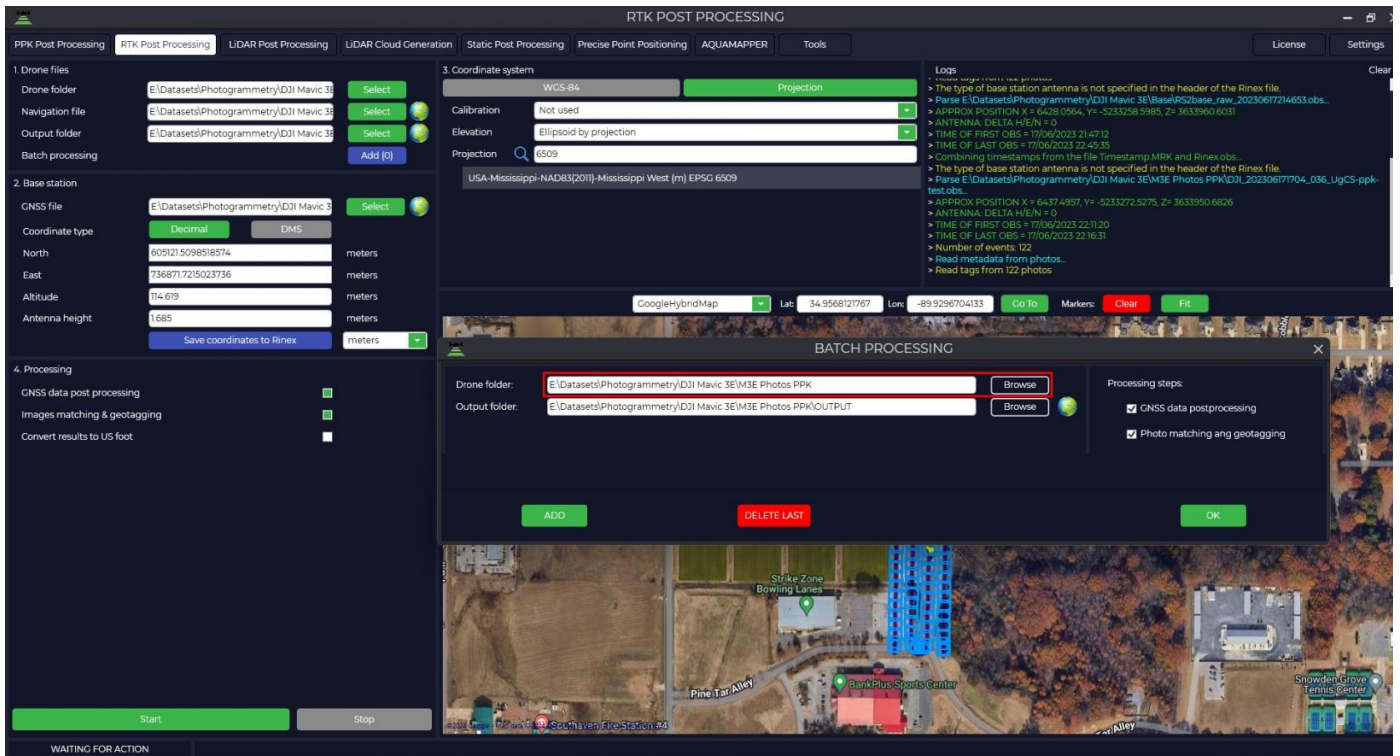
If your coordinate system or geoid model is not in the list, you can add it to the TOPODRONE Post Processing program.

8. If necessary, correct the coordinates of the base station.

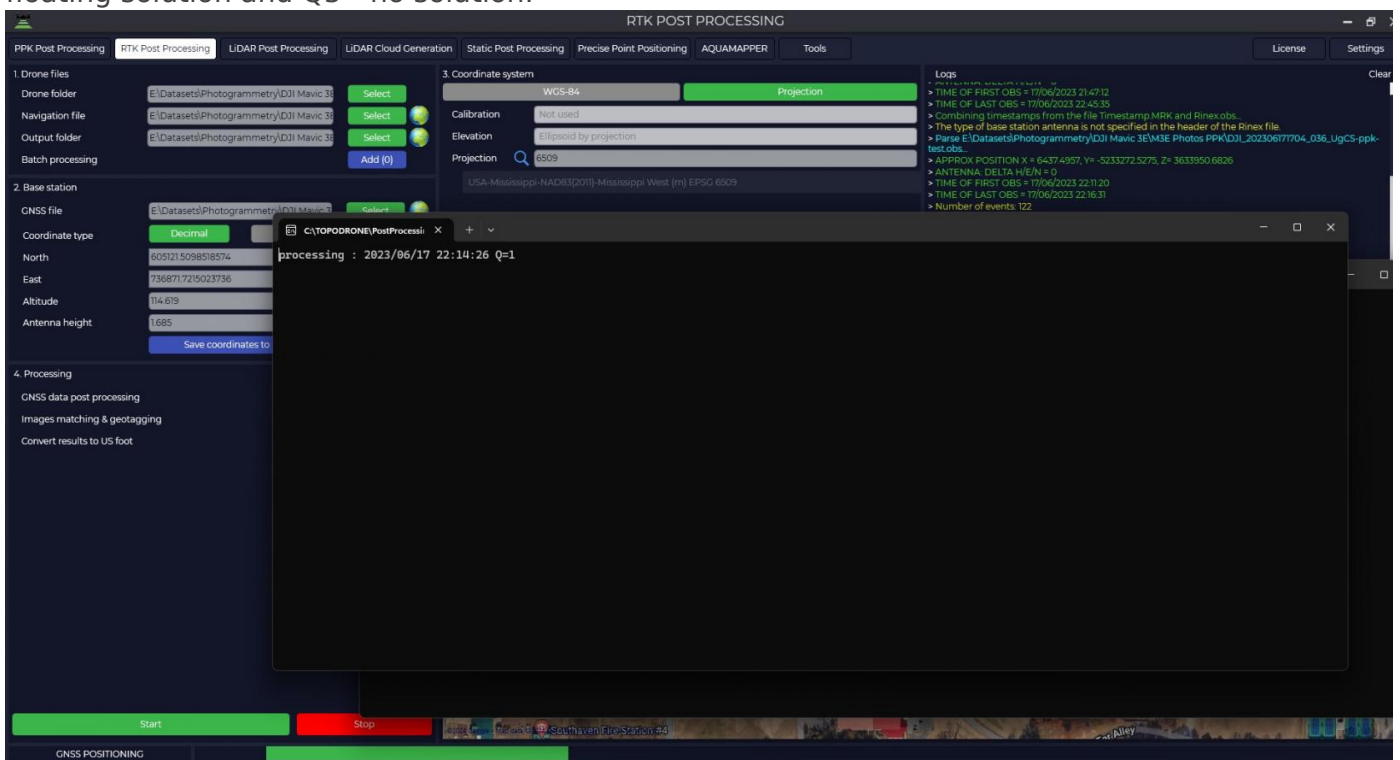


Antenna height includes the height of the milestone or tripod from the point with known coordinates to the bottom of the receiver mount and the height from the bottom of the receiver mount to the phase center

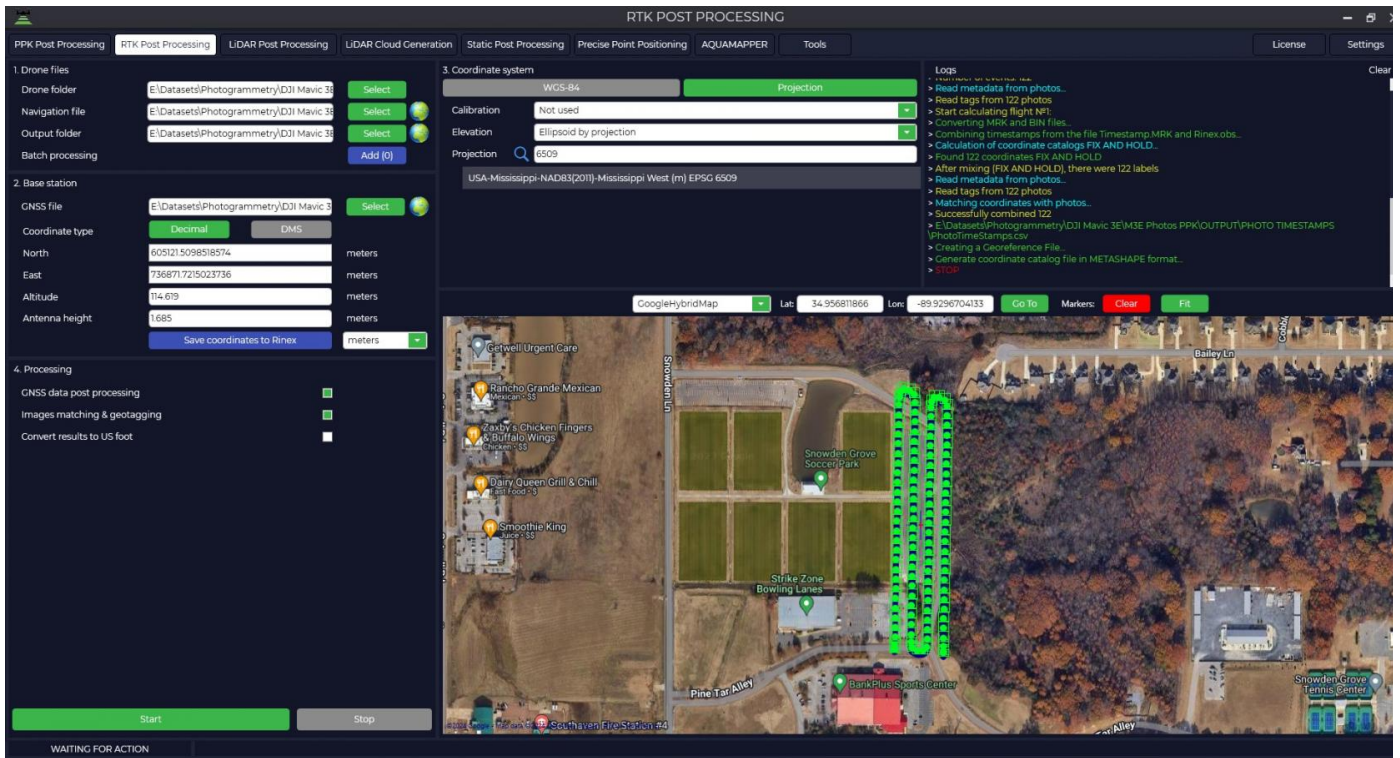
9. TOPODRONE Post Processing program allows to perform batch processing of many flights from one base station within one observation session. To start batch processing it is necessary to press the "Add (0)" button, in the opened window add additional folders with other flights and press "OK"



10. To start the machining process, simply press the "Start" button. Data processing takes place simultaneously in forward and reverse directions and the type of solution is displayed in the form of the letter "Q" with the addition of a number, where Q1 - fixed solution, Q2 - floating solution and Q5 - no solution.



11. At the end of processing a window will be displayed, where you can see the trajectory of the rover, the number of photos, the number of marks, the number of matches and the accuracy of the obtained centers of photos, where green marks are marks obtained with a fixed solution, and yellow marks are marks obtained with a floating solution.



12. The output folder stores a directory of coordinates of the exact centers of photography.

Name	Latitude	Longitude	Altitude (ellipsoid)	Accuracy	Sdn	Sde	Sdu	North	East	Elevation
DJI_20230617121204_0001_V.JPG	34.95522540852424	-89.92934373586364	174.998	0.05	0.003	0.003	0.006	604980.608	736897.81	174.998
DJI_20230617121207_0002_V.JPG	34.9552209359424	-89.92934373586364	175.032	0.05	0.003	0.003	0.006	604982.38	736897.826	175.032
DJI_20230617121208_0003_V.JPG	34.95530202348103	-89.92934223395061	175.06	0.05	0.003	0.003	0.006	604989.108	736897.913	175.06
DJI_20230617121210_0004_V.JPG	34.95540155206784	-89.9293405680840	175.063	0.05	0.003	0.003	0.006	605000.149	736898.02	175.063
DJI_20230617121211_0005_V.JPG	34.95552202979752	-89.92933843393169	175.066	0.05	0.003	0.003	0.007	605013.515	736898.161	175.066
DJI_20230617121212_0006_V.JPG	34.95563645126594	-89.92933561947044	175.102	0.05	0.003	0.003	0.006	605026.21	736898.367	175.102
DJI_20230617121214_0007_V.JPG	34.9557534167323	-89.92933347142275	175.113	0.05	0.003	0.003	0.006	605039.186	736898.511	175.113
DJI_20230617121215_0008_V.JPG	34.95586973116660	-89.929331460658	175.097	0.05	0.003	0.003	0.007	605052.09	736898.642	175.097
DJI_20230617121216_0009_V.JPG	34.95598423217177	-89.92932891133917	175.09	0.05	0.003	0.003	0.007	605064.793	736898.824	175.09
DJI_20230617121217_0010_V.JPG	34.956040231980234	-89.92932635380249	175.084	0.05	0.003	0.003	0.007	605077.907	736898.988	175.084
DJI_20230617121219_0011_V.JPG	34.95621729165252	-89.92932377599635	175.081	0.05	0.003	0.003	0.006	605090.65	736899.188	175.081
DJI_20230617121221_0012_V.JPG	34.9563399190285	-89.92932139410652	175.08	0.05	0.003	0.003	0.006	605103.59	736899.353	175.08
DJI_20230617121222_0013_V.JPG	34.956450231980234	-89.92931890448977	175.057	0.05	0.003	0.003	0.006	605116.493	736899.529	175.057
DJI_20230617121223_0014_V.JPG	34.95656700227722	-89.92931664825356	175.055	0.05	0.003	0.003	0.006	605129.448	736899.683	175.055
DJI_20230617121225_0015_V.JPG	34.95668319291109	-89.92931461256516	175.051	0.05	0.003	0.003	0.006	605142.338	736899.816	175.051
DJI_20230617121226_0016_V.JPG	34.95680167197015	-89.92931184217903	175.084	0.05	0.003	0.003	0.006	605155.483	736900.016	175.084
DJI_20230617121227_0017_V.JPG	34.95691978154369	-89.92930877372387	175.063	0.05	0.003	0.003	0.006	605168.583	736900.244	175.063
DJI_20230617121229_0018_V.JPG	34.957034734790407	-89.92930604948315	175.064	0.05	0.003	0.003	0.006	605181.339	736900.441	175.064
DJI_20230617121230_0019_V.JPG	34.95714991186866	-89.92930397301487	175.057	0.05	0.003	0.003	0.006	605194.118	736900.579	175.057
DJI_20230617121232_0020_V.JPG	34.95726797266694	-89.92930198216513	175.053	0.05	0.003	0.003	0.006	605207.215	736900.708	175.053
DJI_20230617121233_0021_V.JPG	34.95738672110146	-89.92929940217739	175.04	0.05	0.003	0.003	0.007	605220.051	736900.852	175.04
DJI_20230617121234_0022_V.JPG	34.957500832407675	-89.92929677557363	175.048	0.05	0.003	0.003	0.007	605233.05	736901.079	175.048
DJI_20230617121236_0023_V.JPG	34.957616461793396	-89.92929420872535	175.053	0.05	0.003	0.003	0.007	605245.878	736901.261	175.053
DJI_20230617121237_0024_V.JPG	34.95773337118666	-89.92929113066074	175.04	0.05	0.003	0.003	0.007	605258.848	736901.49	175.04
DJI_20230617121238_0025_V.JPG	34.95784984175764	-89.92928878180709	175.028	0.05	0.003	0.003	0.007	605271.77	736901.653	175.028
DJI_20230617121240_0026_V.JPG	34.95796567168305	-89.92928609372235	175.038	0.05	0.003	0.003	0.007	605284.621	736901.846	175.038
DJI_20230617121241_0027_V.JPG	34.9580822314908	-89.92928379411835	175.053	0.05	0.003	0.003	0.007	605297.552	736902.04	175.053
DJI_20230617121242_0028_V.JPG	34.9581965049118	-89.92928143130244	175.054	0.05	0.003	0.003	0.007	605310.229	736901.894	175.054
DJI_20230617121244_0029_V.JPG	34.95826646808101	-89.92931546081097	175.051	0.05	0.003	0.003	0.007	605318.222	736901.015	175.051
DJI_20230617121245_0030_V.JPG	34.958302010297885	-89.92939965112298	175.011	0.05	0.003	0.003	0.007	605321.891	736901.324	175.011
DJI_20230617121247_0031_V.JPG	34.95830952769821	-89.92947954675239	174.977	0.05	0.003	0.003	0.007	605321.741	736901.028	174.977
DJI_20230617121248_0032_V.JPG	34.958321183831961	-89.929316268	174.984	0.05	0.003	0.003	0.007	605316.268	736901.069	174.984
DJI_20230617121249_0033_V.JPG	34.95817954994604	-89.92951721227082	174.996	0.05	0.003	0.003	0.007	605308.262	736900.642	174.996
DJI_20230617121251_0034_V.JPG	34.95807218912541	-89.92952144311651	175.002	0.05	0.003	0.003	0.007	605296.35	736900.304	175.002
DJI_20230617121252_0035_V.JPG	34.95795359653379	-89.92952468710759	174.992	0.05	0.003	0.003	0.007	605283.193	736900.061	174.992
DJI_20230617121253_0036_V.JPG	34.957836655019304	-89.92952795792195	175.038	0.05	0.003	0.003	0.007	605270.252	736900.814	175.038
DJI_20230617121255_0037_V.JPG	34.95770206411937	-89.92953071953339	175.066	0.05	0.003	0.003	0.007	605257.28	736900.614	175.066
DJI_20230617121256_0038_V.JPG	34.9576046569592	-89.92953294137574	175.066	0.05	0.003	0.003	0.007	605244.48	736900.463	175.066
DJI_20230617121258_0039_V.JPG	34.95748633494719	-89.92953505674468	175.074	0.05	0.003	0.003	0.007	605231.591	736900.322	175.074
DJI_20230617121259_0040_V.JPG	34.95736494857447	-89.92953724595802	175.079	0.05	0.003	0.003	0.007	605218.39	736900.175	175.079
DJI_20230617121300_0041_V.JPG	34.957255054629066	-89.92953989645466	175.095	0.05	0.003	0.003	0.007	605205.695	736900.994	175.095
DJI_20230617121302_0042_V.JPG	34.9571394258979	-89.92954271724115	175.095	0.05	0.003	0.003	0.007	605192.866	736900.779	175.095
DJI_20230617121303_0043_V.JPG	34.95702180320814	-89.9295487833901	175.08	0.05	0.003	0.003	0.007	605179.99	736900.541	175.08
DJI_20230617121304_0044_V.JPG	34.95690542540338	-89.92954812099936	175.049	0.05	0.003	0.003	0.007	605166.905	736900.39	175.049
DJI_20230617121306_0045_V.JPG	34.95679023641825	-89.9295504210162	175.043	0.05	0.003	0.003	0.007	605154.126	736900.231	175.043
DJI_20230617121307_0046_V.JPG	34.95667342378968	-89.9295527436589	175.058	0.05	0.003	0.003	0.007	605141.167	736900.072	175.058
DJI_20230617121309_0047_V.JPG	34.9565652557023	-89.92955496464394	175.069	0.05	0.003	0.003	0.007	605128.242	736900.921	175.069
DJI_20230617121310_0048_V.JPG	34.95644097609254	-89.92955723976165	175.071	0.05	0.003	0.003	0.007	605115.378	736900.765	175.071
DJI_20230617121311_0049_V.JPG	34.95632520471871	-89.92955958587673	175.057	0.05	0.003	0.003	0.007	605102.534	736900.603	175.057
DJI_20230617121313_0050_V.JPG	34.95620678618305	-89.92956227593403	175.037	0.05	0.003	0.003	0.007	605089.396	736900.41	175.037
DJI_20230617121314_0051_V.JPG	34.9560838659965	-89.92956469705878	175.054	0.05	0.003	0.003	0.007	605076.483	736900.241	175.054
DJI_20230617121315_0052_V.JPG	34.95597302640641	-89.92956722405303	175.079	0.05	0.003	0.003	0.007	605063.462	736900.063	175.079
DJI_20230617121317_0053_V.JPG	34.95585741597549	-89.92956923132769	175.071	0.05	0.003	0.003	0.007	605050.636	736900.931	175.071
DJI_20230617121318_0054_V.JPG	34.955738015745325	-89.92957200633552	175.068	0.05	0.003	0.003	0.007	605037.39	736900.731	175.068
DJI_20230617121319_0055_V.JPG	34.955624985650928	-89.92957412239396	175.038	0.05	0.003	0.003	0.007	605024.85	736900.589	175.038

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