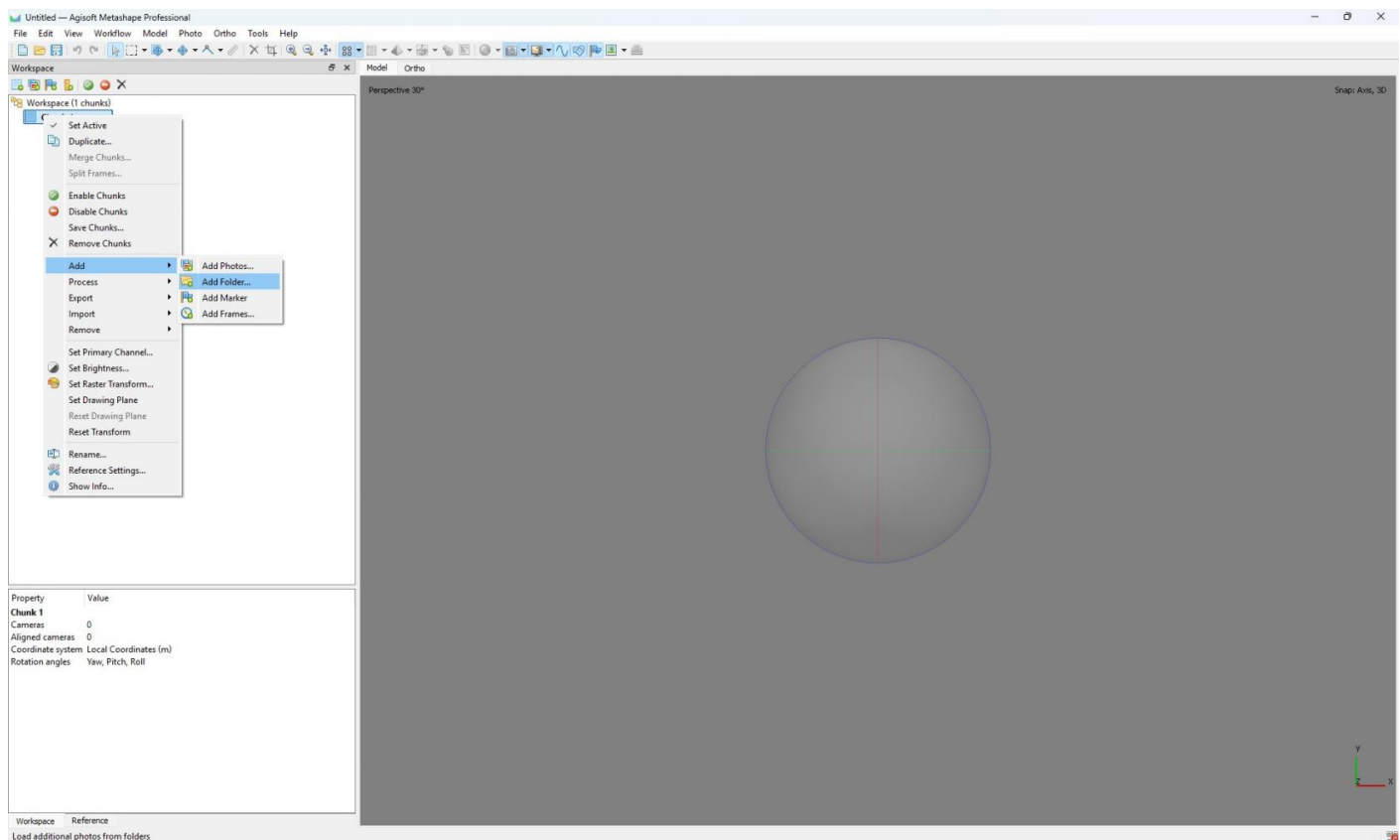


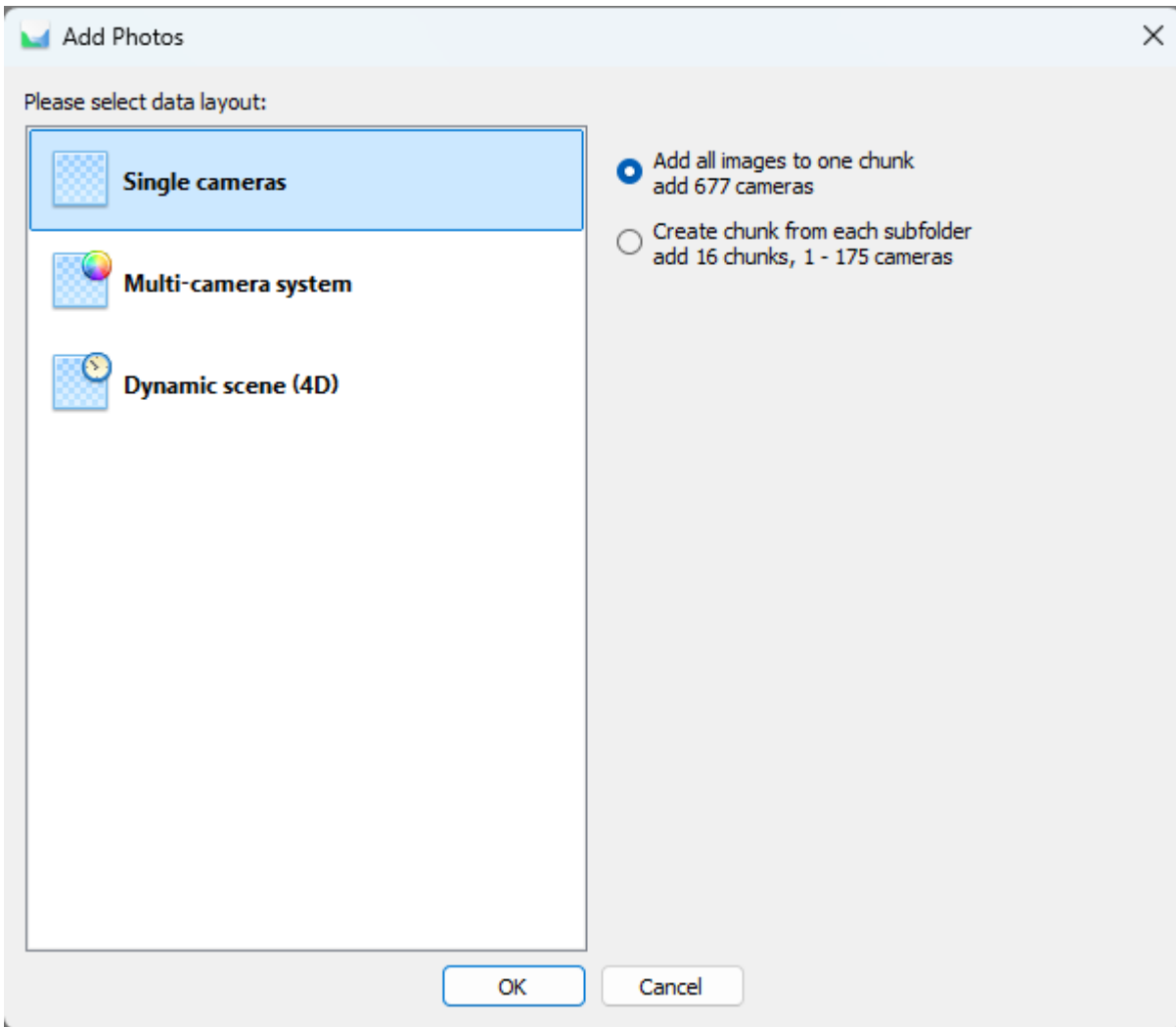
Agisoft Metashape

The process of multispectral data processing in Agisoft Metashape software has much in common with classical photogrammetric processing. Below is a detailed description of this process.

1. Open Agisoft Metashape program and select the folder where the acquired multispectral data are stored.

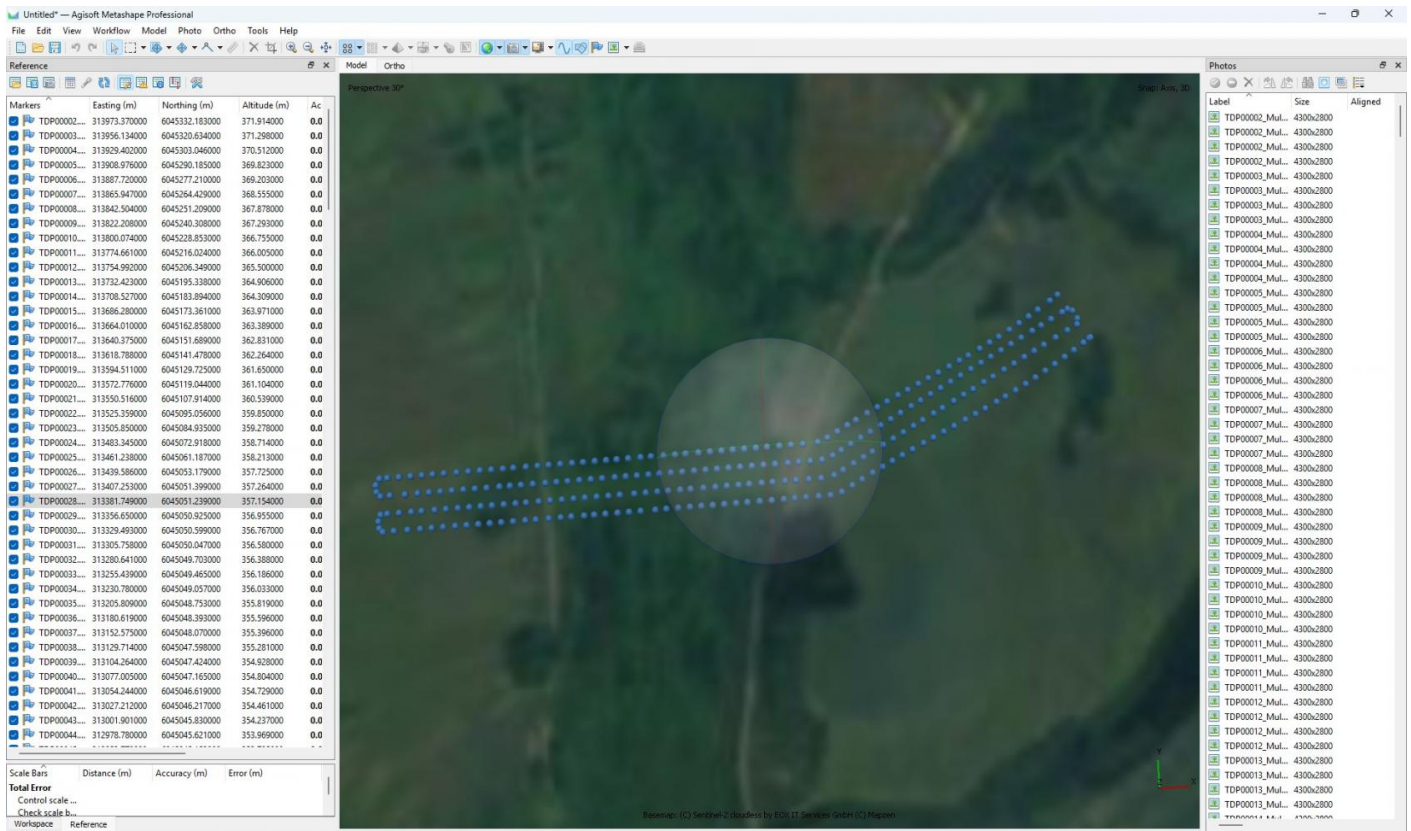


2. In the program interface, select the “Multi-camera system” option for correct data processing.



3. Open the Snap window and perform the following steps:

- Convert the photo centers to the local coordinate system;
- Set the coordinate accuracy according to the requirements of your task;
- Make sure that all cameras are correctly georeferenced to the local coordinate system.



4. Go to “Camera Calibration” and follow the steps below:

- Set the physical pixel size and focal length;

Camera Calibration

AgroWing_ILCE-7RM4
263 images, 4300x2800

unknown
263 images, 4300x2800

unknown
263 images, 4300x2800

unknown
263 images, 4300x2800

Camera type: Frame

Pixel size (mm): 0.00378788 x 0.00378788

Focal length (mm): 25

Rolling shutter compensation: Disabled

☐ Film camera with fiducial marks

Initial Adjusted Bands GPS/INS Offset Slave Offset

Type: Auto

cx: 0

f: 6599.99789 cy: 0

k1: 0 p1: 0

k2: 0 p2: 0

k3: 0 b1: 0

k4: 0 b2: 0

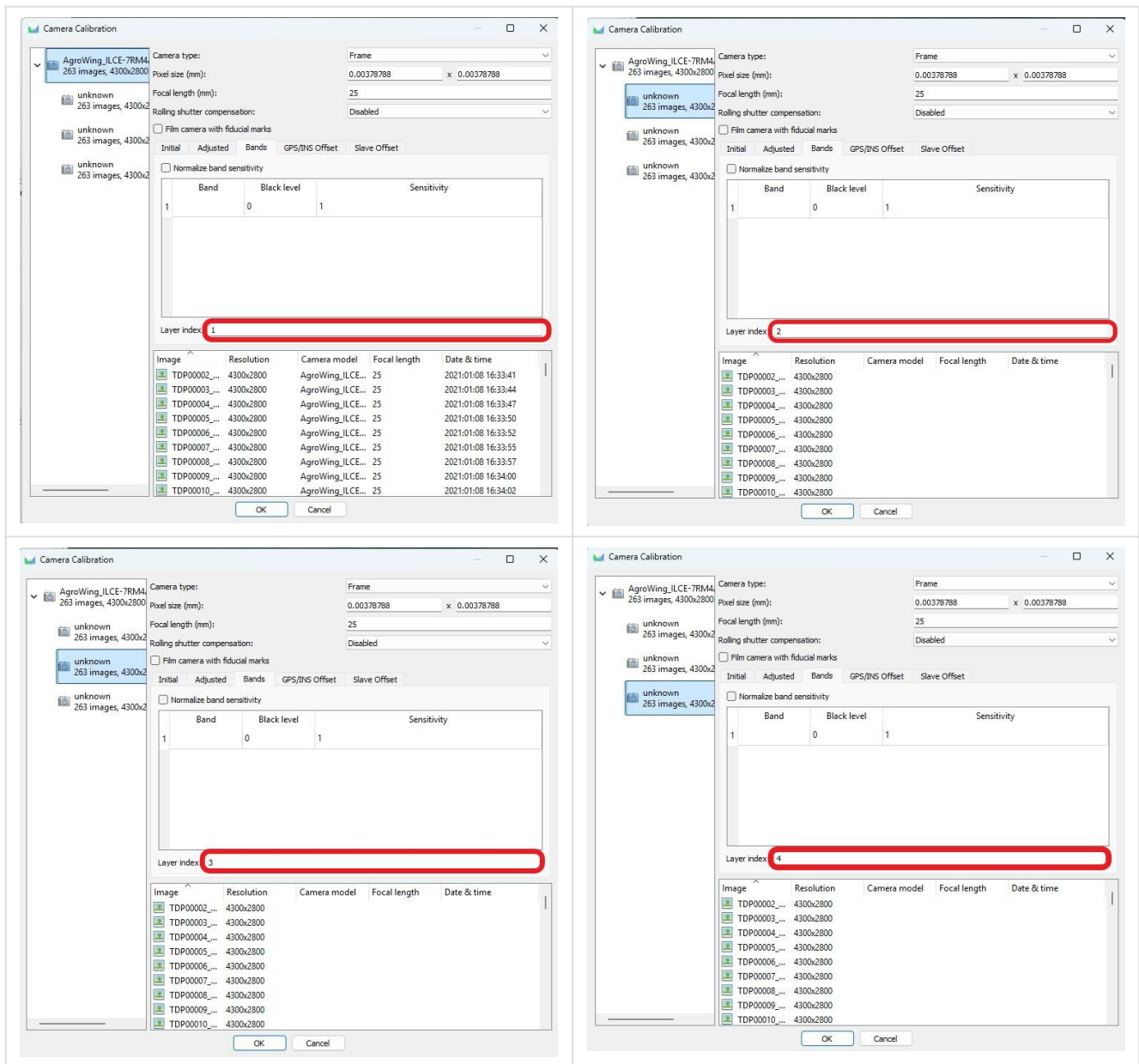
Fixed parameters: None Select...

Image-variant parameters: None Select...

Image	Resolution	Camera model	Focal length	Date & time
TDP00002_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:41
TDP00003_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:44
TDP00004_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:47
TDP00005_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:50
TDP00006_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:52
TDP00007_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:55
TDP00008_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:33:57
TDP00009_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:34:00
TDP00010_...	4300x2800	AgroWing_ILCE...	25	2021:01:08 16:34:02

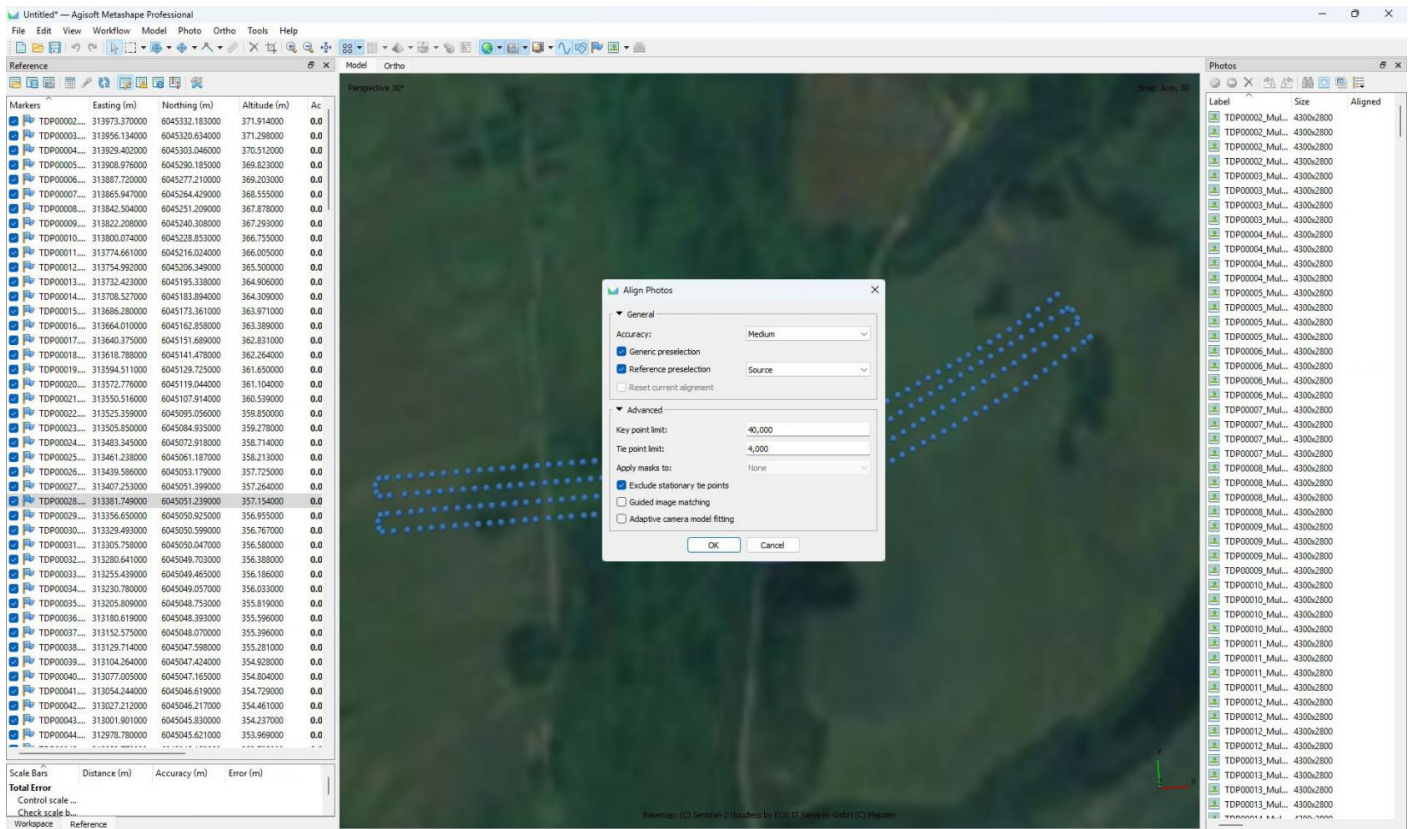
OK Cancel

- Set the sequence numbers of all multispectral channels.



5. When camera calibration is complete, perform the aerotriangulation process. This process includes:

- Create tie points based on the data from the cameras;
- Defining and refining aerotriangulation parameters to improve model accuracy.



After the aerotriangulation stage you can filter points based on the selected parameter using the “Model” tab, “Smooth selection” item.

6. Open the “Bounding” window and perform the following actions:

- Import control points in the project coordinate system;

Import CSV

×

Coordinate System

WGS 84 / UTM zone 36N (EPSG::32636)

Rotation angles: Yaw, Pitch, Roll

☐ Ignore labels
 Threshold (m): 0.1

Delimiter

☒ Tab
 ☐ Semicolon
 ☐ Comma
 ☐ Space
 ☐ Other:

☐ Combine consecutive delimiters

Columns

Label: 1
 ☒ Accuracy
 ☐ Rotation
 ☐ Accuracy

Easting: 13 7
 Yaw: 5 9

Northing: 12 6
 Pitch: 6 9

Altitude: 14 8
 Roll: 7 9

☐ Enabled flag: 10

Start import at row: 2

Items: All

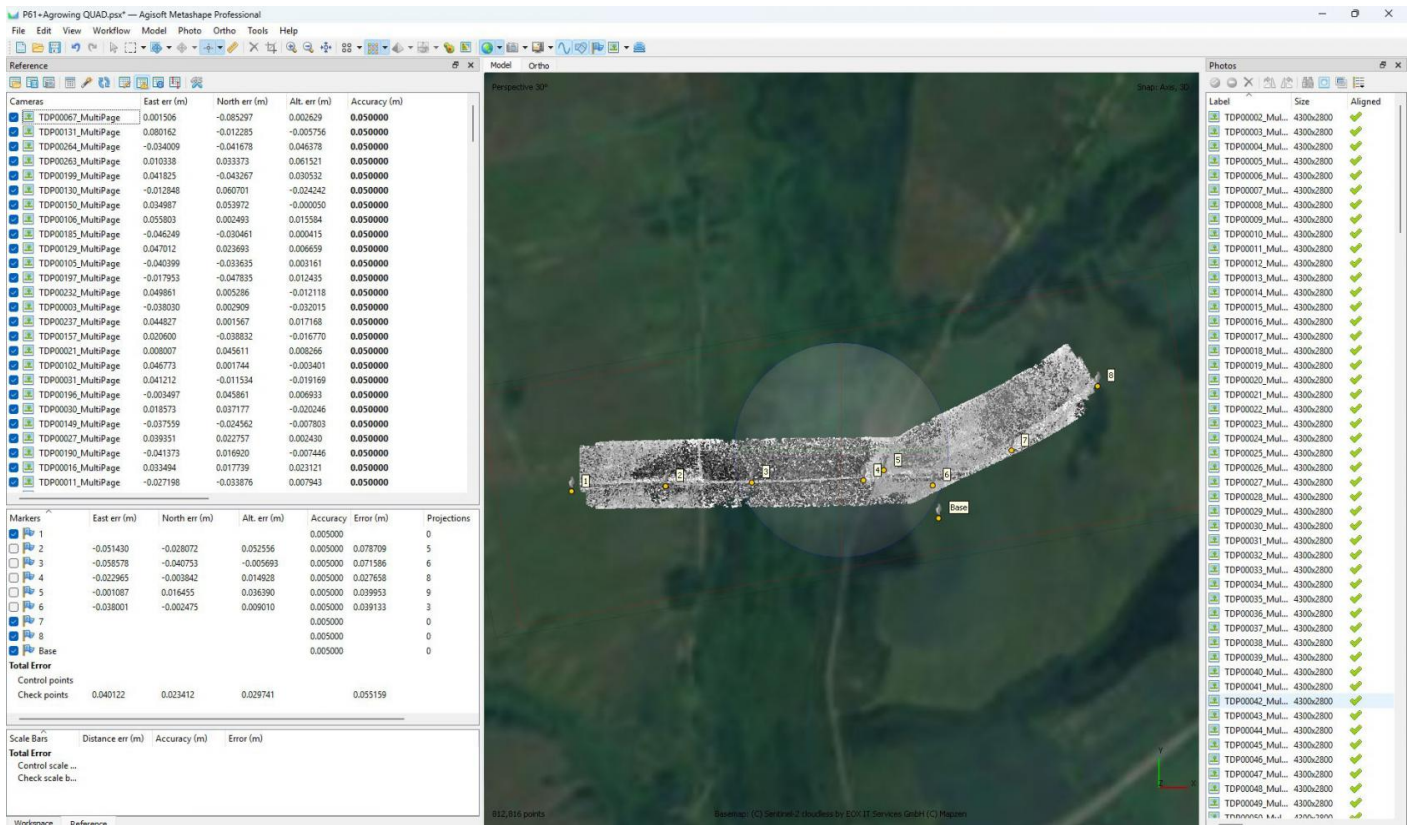
First 20 lines preview:

	icy	North	East	Elevation	Northing	Easting	Altitude
1		North	East	Elevation			
2		0	0	0	6045332.183	313973.37	371.914
3		0	0	0	6045320.634	313956.134	371.298
4		0	0	0	6045303.046	313929.402	370.512
5		0	0	0	6045290.185	313908.976	369.823
6		0	0	0	6045277.21	313887.72	369.203

OK

Cancel

- Perform control point measurements on at least 6-9 images.



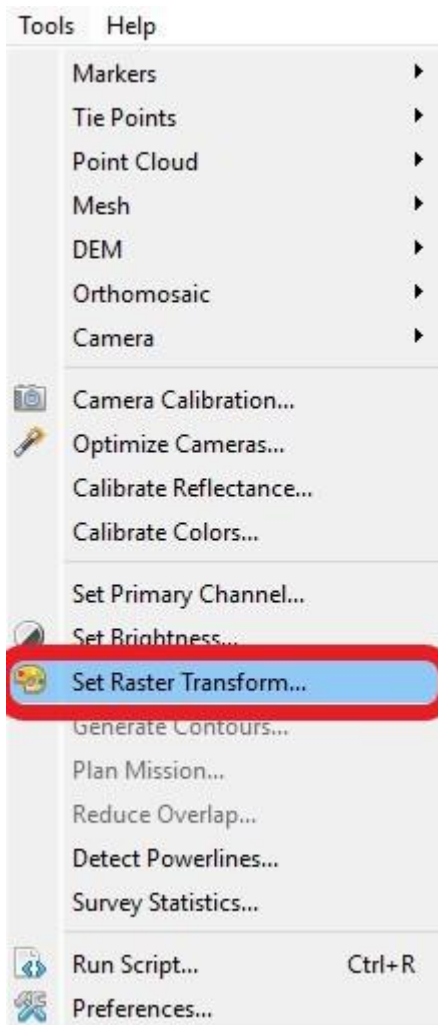
Adjust the focal length if necessary.

If the measurement accuracy meets the specified criteria, proceed to point cloud creation. Otherwise, analyze all steps of the process, from data collection to data processing, to identify and eliminate possible errors.

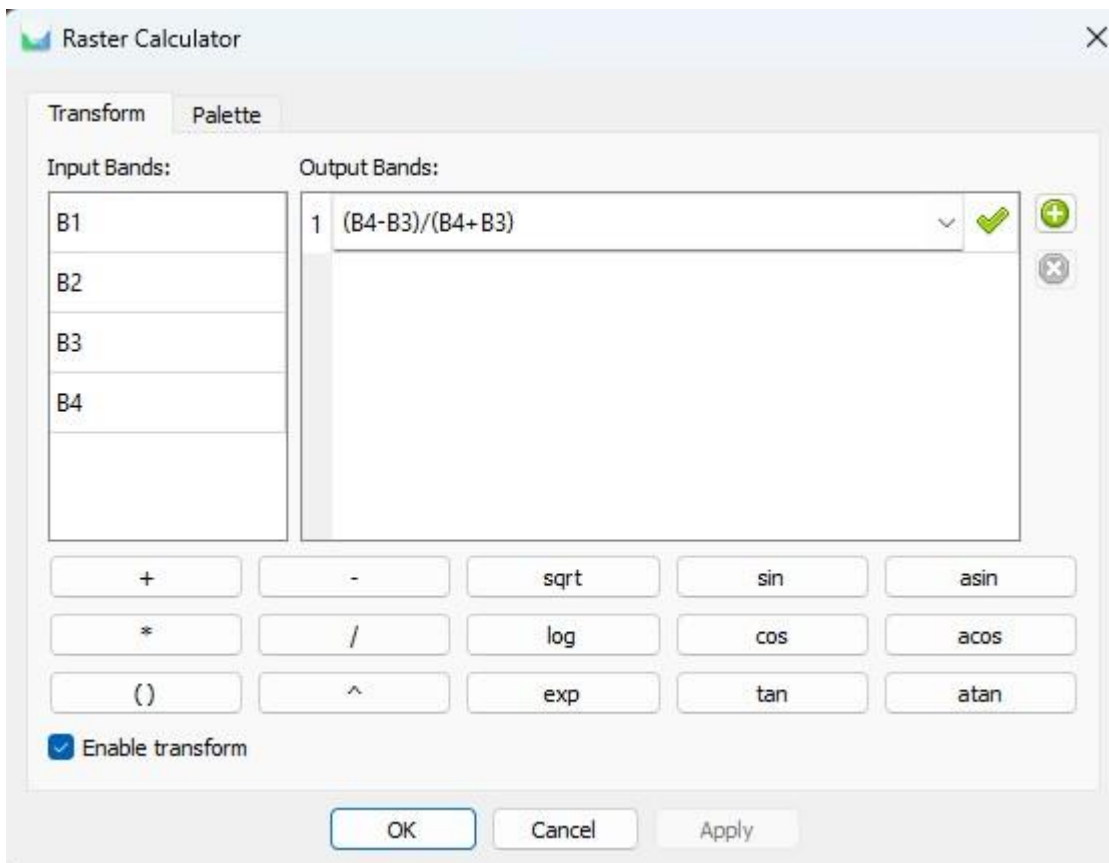
7. Construct a dense point cloud and digital elevation model.

8. Compute the required index information.

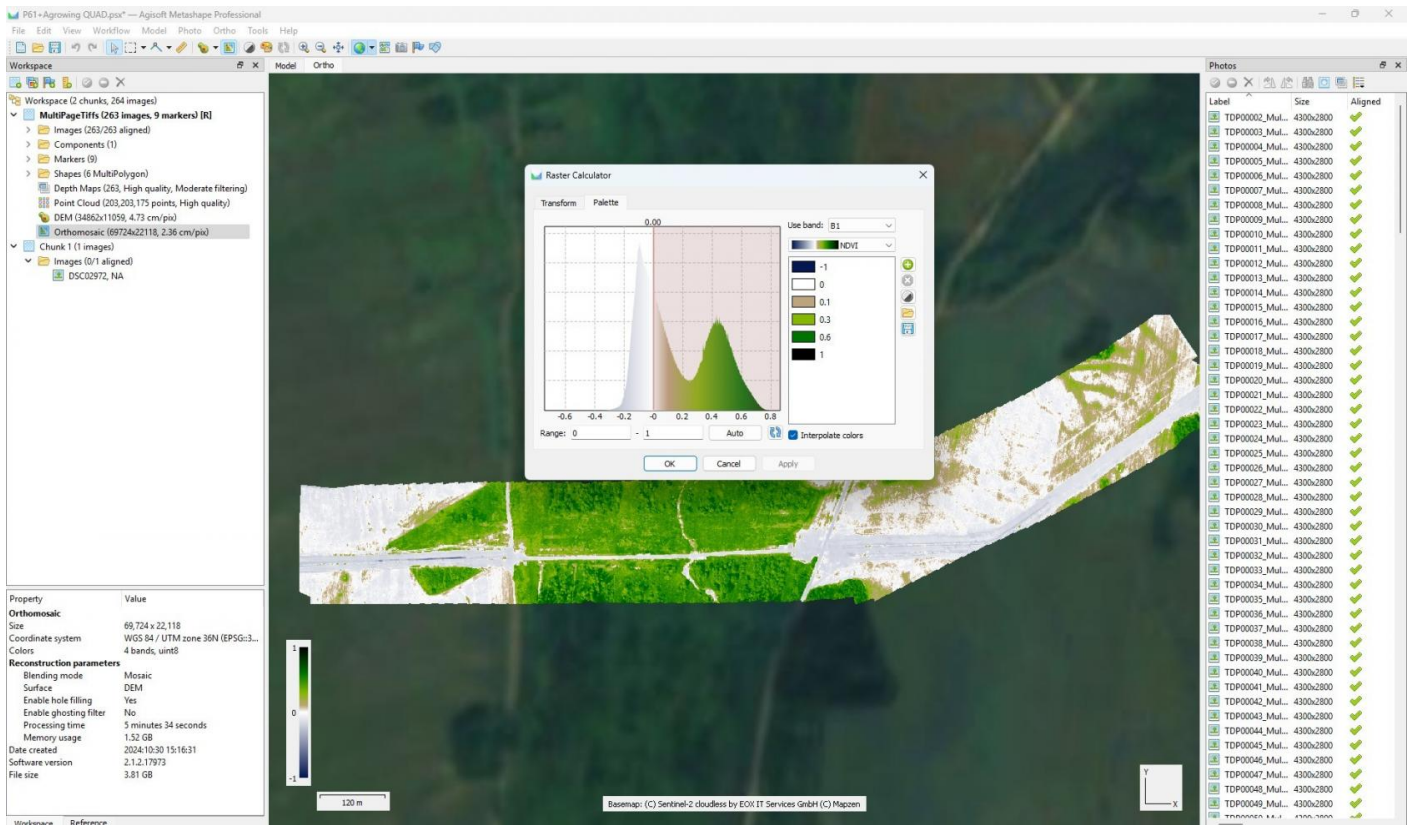
- In the toolbar, use the “Set Raster Transform” button;



- In the raster calculator, enter the formula that will calculate your index;

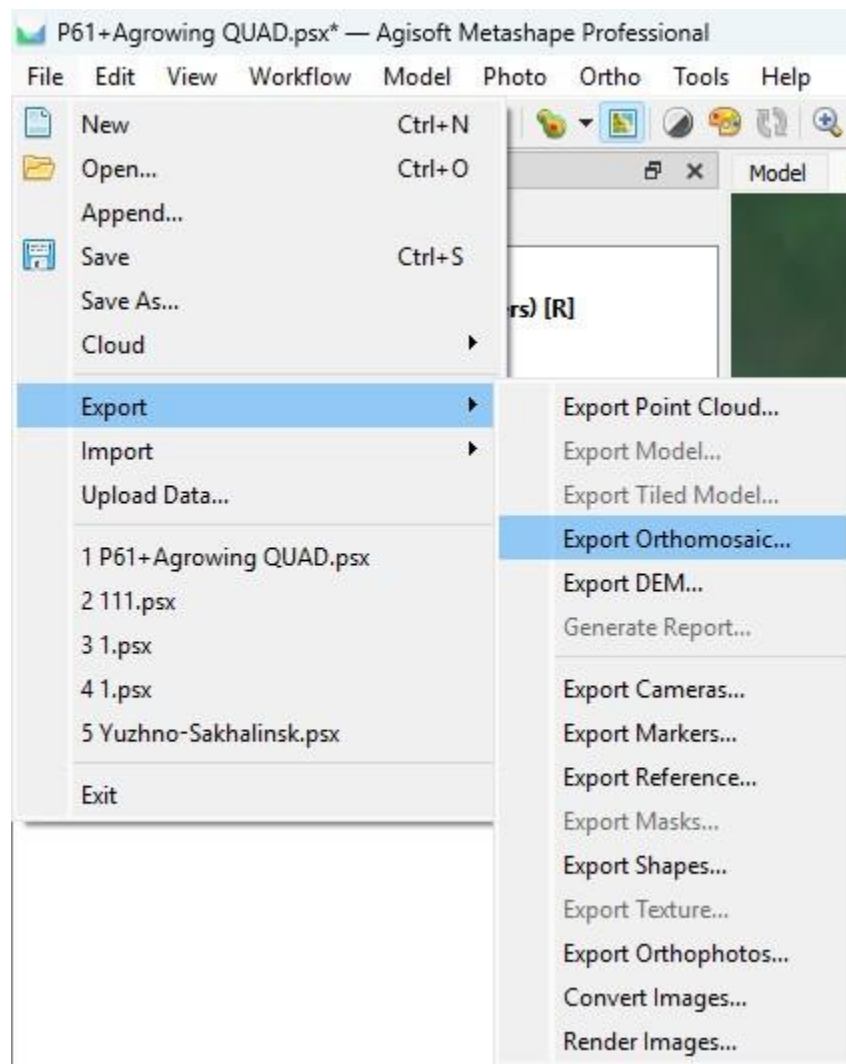


- Go to the “Palette” tab, set the desired range, select the appropriate palette and click “OK”.



9. To export an orthomosaic, follow the steps below:

- Select “File” - “Export” - “Export Orthomosaic”



- Select the path and file name for saving the orthomosaic;
- Configure export settings following the recommendations on the screenshot. If necessary, divide the orthomosaic into blocks for convenient further use.

 Export Orthomosaic - TIFF

Coordinate System

WGS 84 / UTM zone 36N (EPSG::32636)



Raster

☒ Pixel size (m):

0.0236351

X

Metres...

0.0236351

Y

☐ Max. dimension (pix):

4096

☐ Split in blocks (pix):

10000

x

10000

Raster transform:

Index color

Background color:

White

Region

☐ Setup boundaries:

312428.738

-

314076.671

X

Reset

6044874.545

-

6045397.307

Y

Total size (pix):

69723

x

22118

☐ Clip to boundary shapes

☐ Write KML file

☒ Write World file

☐ Write tile scheme

Metadata

Image description:

Compression

TIFF compression:

LZW

JPEG quality:

90

☒ Write tiled TIFF

☐ Write BigTIFF file

☒ Generate TIFF overviews

☒ Save alpha channel

OK

Cancel

This completes the processing. All necessary materials can be exported in the same way as written in point 9.

Revision #5

Created 10 February 2025 13:00:00 by Tatiana

Updated 14 February 2025 08:19:18 by Tatiana