



ARISTOTLE UNIVERSITY OF THESSALONIKI, GREECE

3D Reconstruction Using Agisoft Metashape

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Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Workshop on Documentation of
Ecclesiastical Heritage

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Introduction



Presentation Structure

- ❑ Data Sets
- ❑ Image based processing workflow
- ❑ Instructions for Building
- ❑ Instructions for Small Object
- ❑ Results
- ❑ Conclusions



Data sets

Small object



Building façade



Data sets

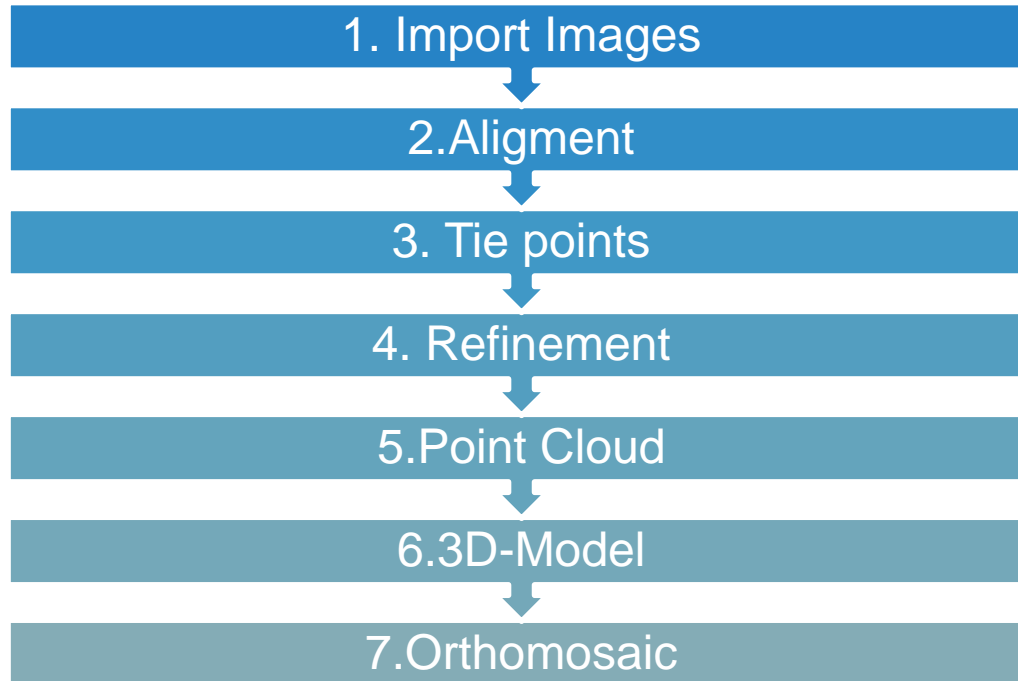
Small object

- ❑ 26 images
- ❑ Liturgical object
- ❑ Equipment: Sony Alpha a7ii Mirrorless Camera
- ❑ Measuring tape
- ❑ Agisoft Targets

Building façade

- ❑ 30 images
- ❑ Didymoteichon Castle in Thrace, Greece
- ❑ Equipment: UAV DJI Mavic 3 Enterprise
- ❑ UAV(Unmanned aerial vehicle) with RTK (Real-time kinematic positioning)

General Workflow

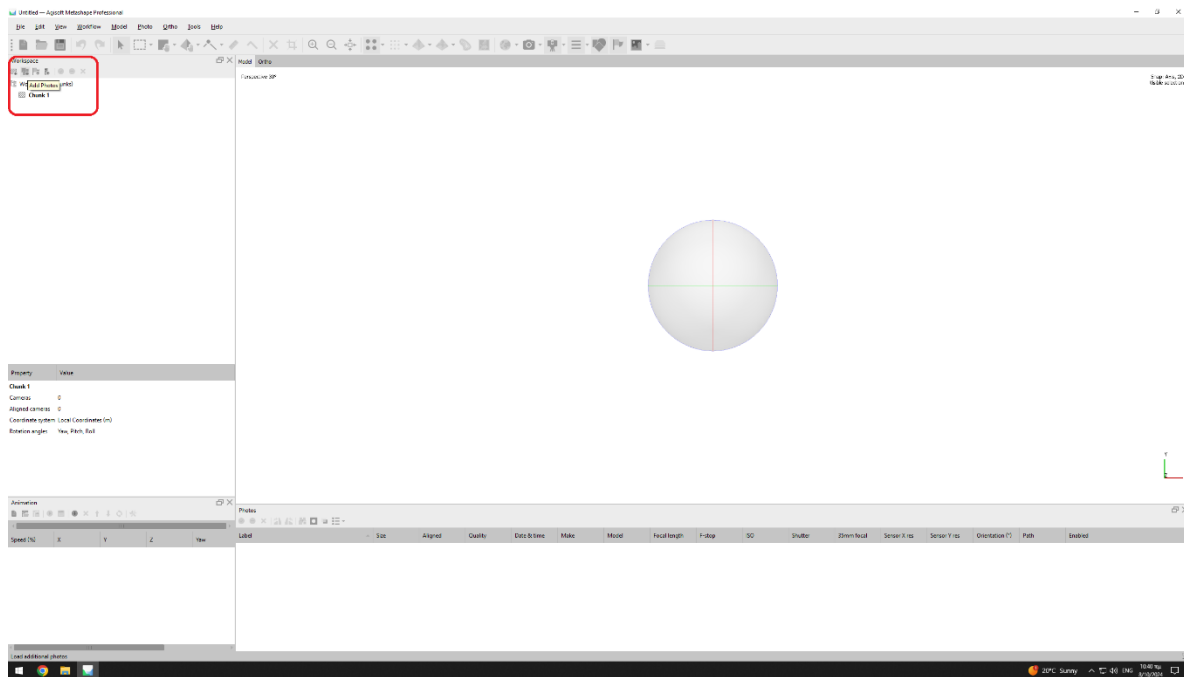


Step by step Building façade



New Project

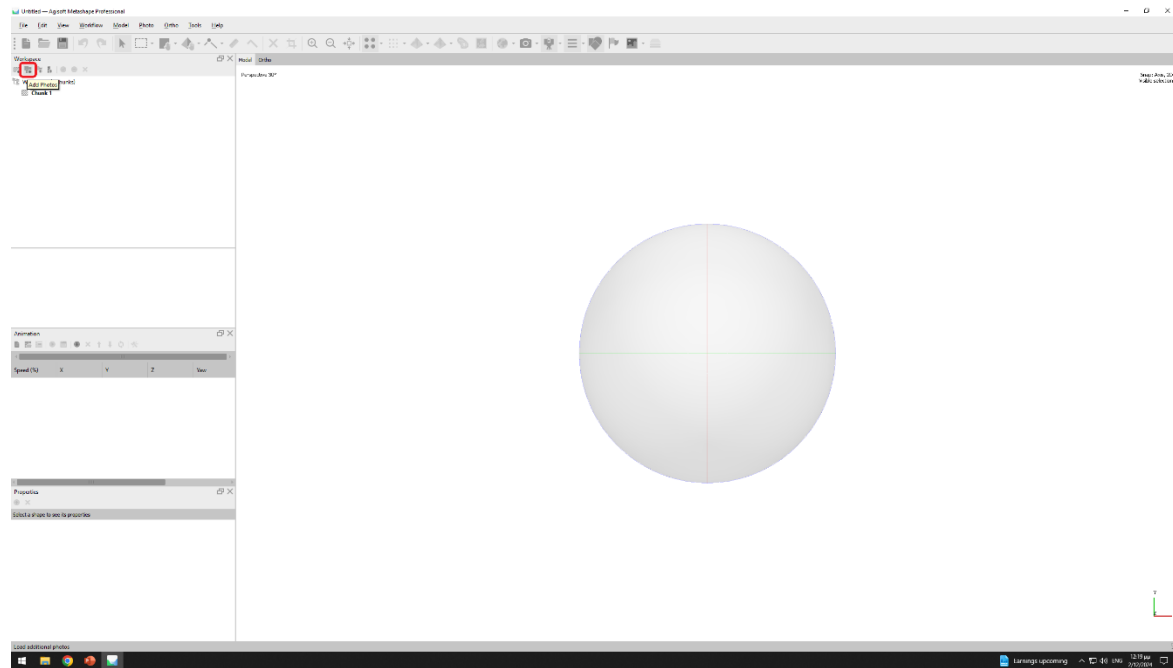
Open the Agisoft Metashape software and create a new project.



Add photos into the project

1. From the Workspace panel -> Add Photos

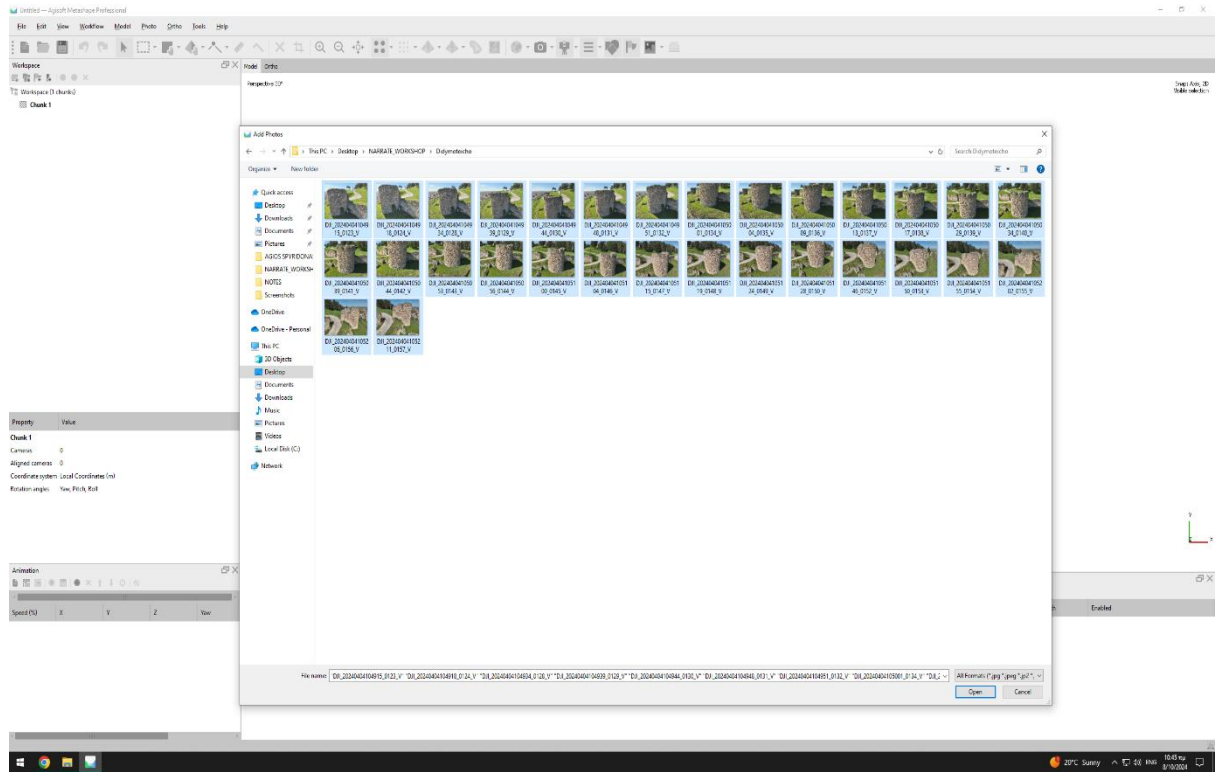
find the photos from the folder where you have saved them.



Add photos into the project

1. From the Workspace panel -> Add Photos

find the photos from the folder where you have saved them.



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Alignment

2. Workflow -> Align Photos

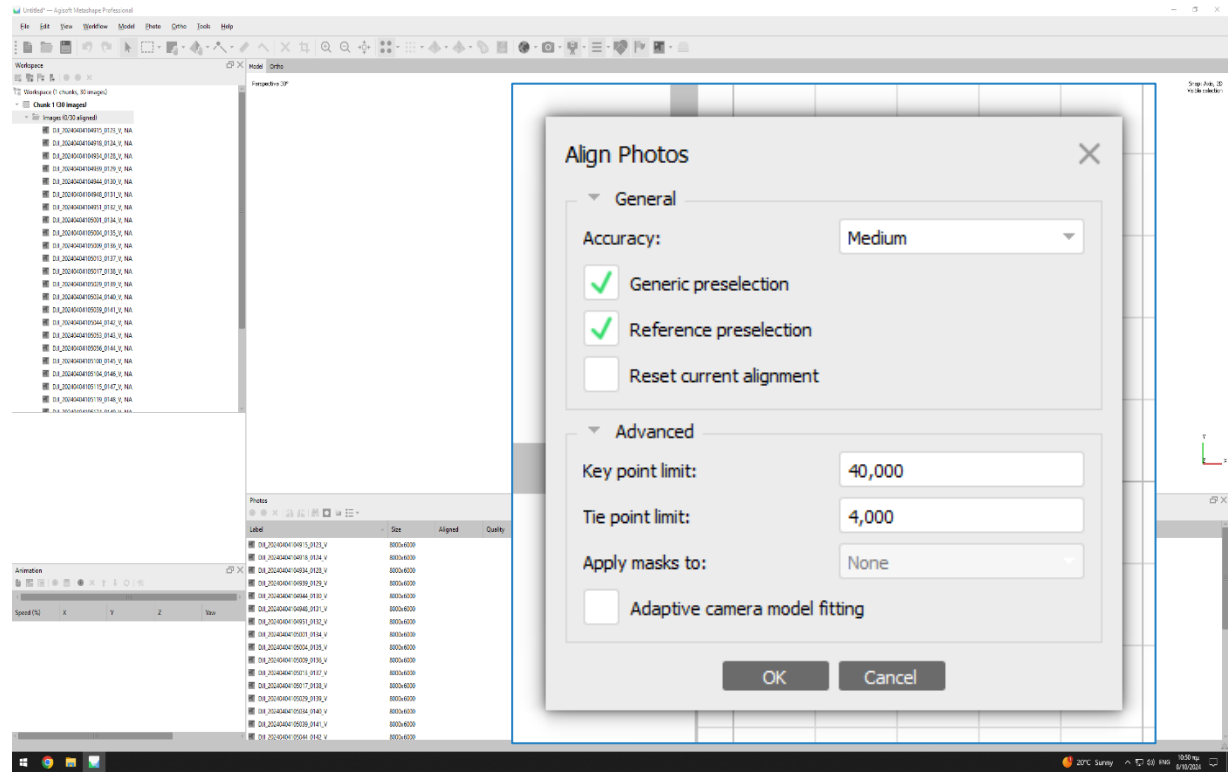
The screenshot displays the Agisoft Metashape Professional interface. The 'Workflow' menu is open, highlighting the 'Align Photos...' option. The 'Reference' panel shows a list of photos with their respective coordinates and a 'Total Error' section. The 'Cameras' panel shows a list of cameras with their respective parameters. The 'Photos' panel shows a table of photo data.

Label	Size	Aligned	Quality	Date/Time	Make	Model	Focal length	F stop	ISO	Shutter	Shim focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DA_2024041048131021_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1000	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131024_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/800	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131026_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1200	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131029_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1200	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131031_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1200	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131032_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1000	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131034_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/720	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131035_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/720	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131036_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/800	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131037_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/800	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131038_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/1000	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131039_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/720	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131040_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131041_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131042_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131043_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131044_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131045_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131046_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131047_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131048_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131049_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓
DA_2024041048131050_V	8000-8000			20240410 10:48:13	DAI	M1T	4.4	F1.8	100	1/900	24	0	0	0	C:\Users\Nelli...	✓

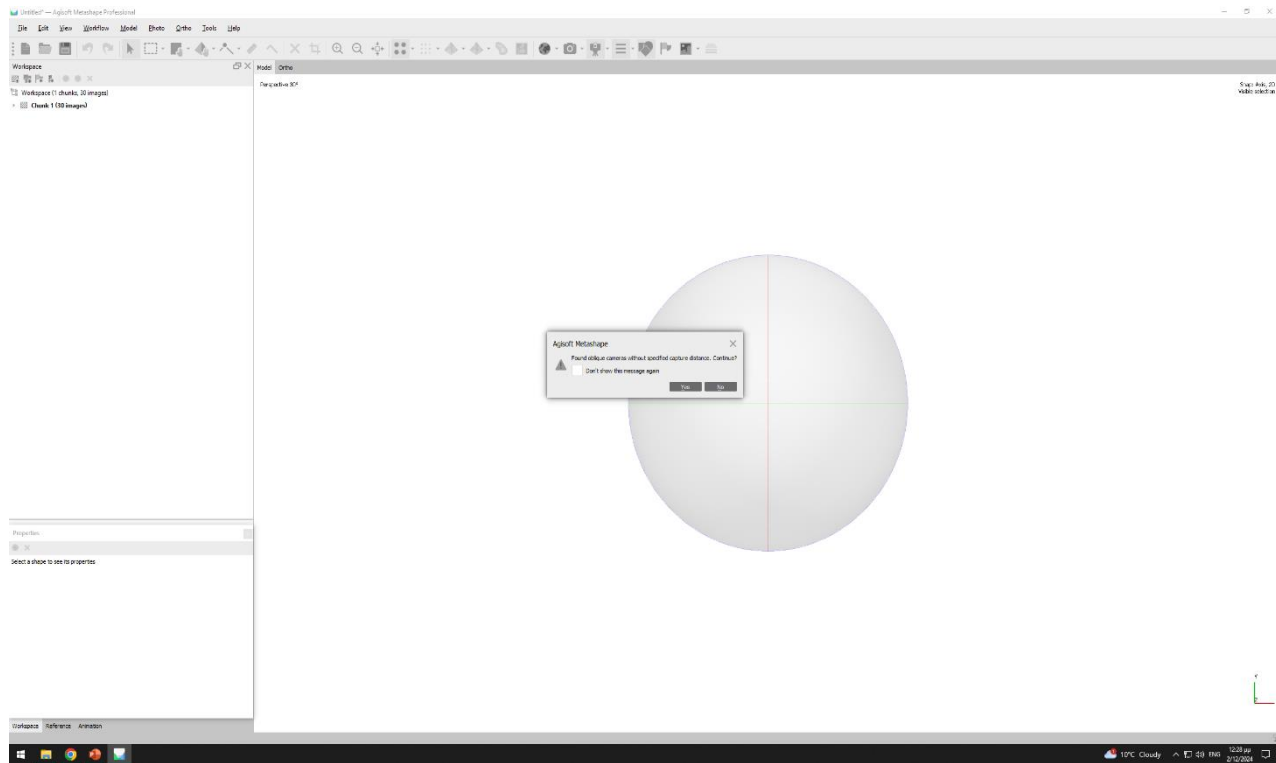


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Alignment parameters



Oblique images



Tie points cleaning

3. Model -> Gradual Selection

➤ Exclude 10% of your points

The screenshot shows the Autodesk ReCap software interface. The 'Model' menu is open, and 'Gradual Selection' is highlighted. The 3D view shows a point cloud of a building facade with a yellow bounding box. Below the 3D view, there is a metadata table with the following columns: Label, Size, Aligned, Quality, Date & time, Make, Model, Focal length, F stop, ISO, Shutter, 35mm focal, Sensor X res, Sensor Y res, Orientation (°), Path, and Enabled.

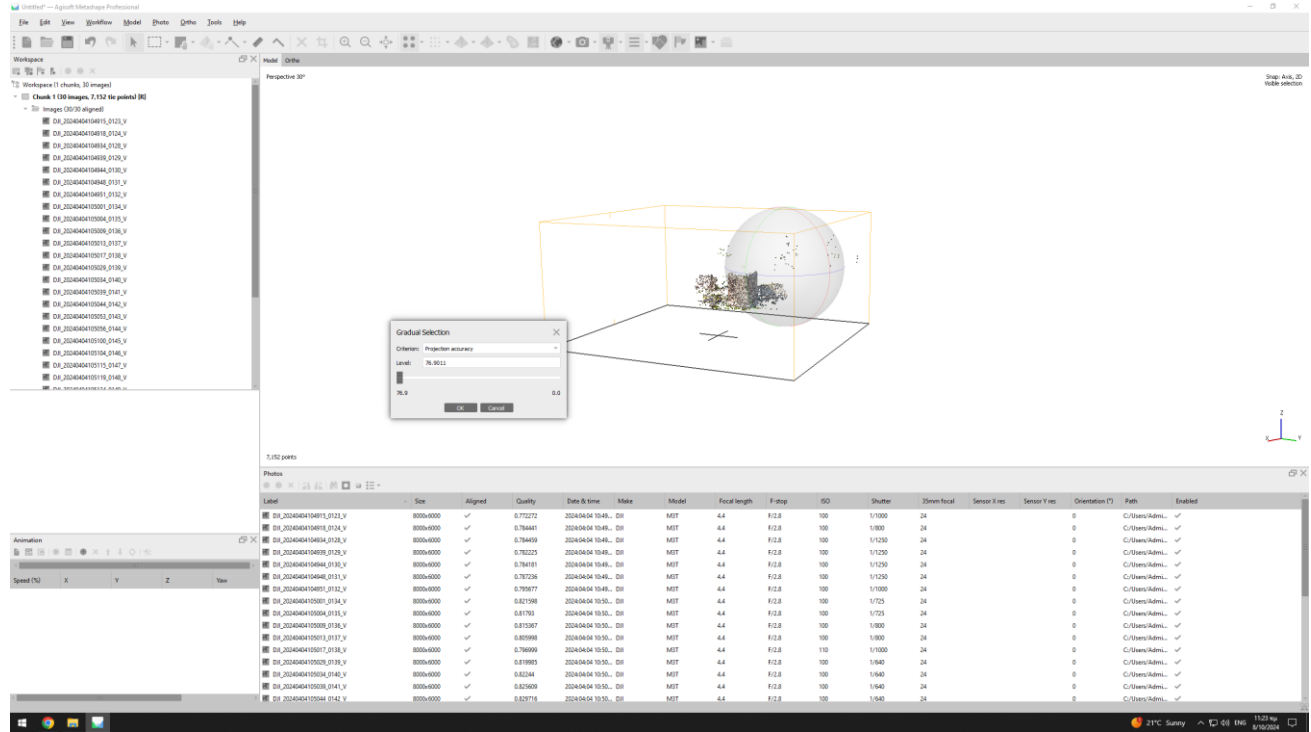
Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
01E_202404010401_012L_V	800x4000	✓	0.772272	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1000	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.766461	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/800	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.726469	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1200	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.762225	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1200	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.764381	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1200	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.707229	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1200	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.750277	2024-04-04 10:48:01	DAI	M1T	4.4	F2.0	100	1/1000	24	0	0	0	C:\Users\Adm...	✓
01E_202404010401_012L_V	800x4000	✓	0.821566	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/720	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.81780	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/720	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.815967	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/800	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.807568	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/800	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.798989	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/1000	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.819685	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/840	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.82144	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/840	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.828409	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/840	24	0	0	0	C:\Users\Adm...	✓
01E_202404010504_012L_V	800x4000	✓	0.822715	2024-04-04 10:55:01	DAI	M1T	4.4	F2.0	100	1/840	24	0	0	0	C:\Users\Adm...	✓



Noise filtering 1/3

3. Model -> Gradual Selection

Projection Accuracy:
10-30



Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	Zmm focal	Sensor 2 mm	Sensor 2 cm	Orientation (°)	Path	Enabled
DIR_20240404104819_0123.V	8000x6000	✓	0.72272	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1000	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0124.V	8000x6000	✓	0.78441	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0125.V	8000x6000	✓	0.78459	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0126.V	8000x6000	✓	0.78223	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0127.V	8000x6000	✓	0.76181	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0128.V	8000x6000	✓	0.78236	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DIR_20240404104819_0129.V	8000x6000	✓	0.79577	20240404 10:48...	DI	MIST	4.4	F/2.8	100	1/1000	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105001_0130.V	8000x6000	✓	0.82198	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/725	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105001_0131.V	8000x6000	✓	0.81793	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/725	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105001_0132.V	8000x6000	✓	0.81587	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105001_0133.V	8000x6000	✓	0.80998	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105001_0134.V	8000x6000	✓	0.79699	20240404 10:50...	DI	MIST	4.4	F/2.8	110	1/1000	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105029_0135.V	8000x6000	✓	0.81995	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105029_0136.V	8000x6000	✓	0.82244	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105029_0141.V	8000x6000	✓	0.82900	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓
DIR_20240404105044_0142.V	8000x6000	✓	0.82876	20240404 10:50...	DI	MIST	4.4	F/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓



Noise filtering 2/3

Reconstruction
Uncertainty ~ 10

Label	Size	Aligned	Quality	Date & Time	Make	Model	Focal length	F-stop	ISO	Shutter	Zoom focal	Sensor size	Sensor res.	Orientation (°)	Path	Enabled
DA_20240404104611_0123_V	8000x6000	✓	0.72272	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1000	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0124_V	8000x6000	✓	0.78441	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0125_V	8000x6000	✓	0.78459	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0126_V	8000x6000	✓	0.78223	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0127_V	8000x6000	✓	0.78181	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0131_V	8000x6000	✓	0.78128	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1250	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0132_V	8000x6000	✓	0.79577	2024-04-04 10:46	DS	MIT	4.4	f/2.8	100	1/1000	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0133_V	8000x6000	✓	0.82139	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/725	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0135_V	8000x6000	✓	0.81791	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/725	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0136_V	8000x6000	✓	0.81367	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0137_V	8000x6000	✓	0.82998	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/800	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0138_V	8000x6000	✓	0.78699	2024-04-04 10:50	DS	MIT	4.4	f/2.8	110	1/1000	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0139_V	8000x6000	✓	0.81985	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/650	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0140_V	8000x6000	✓	0.82344	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/650	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0141_V	8000x6000	✓	0.82560	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓
DA_20240404104611_0142_V	8000x6000	✓	0.82719	2024-04-04 10:50	DS	MIT	4.4	f/2.8	100	1/640	24	0	C:\Users\Admin...	✓		✓



Noise filtering 3/3

Reprojection error
<1

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	15mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Evaluated
DS_20240404104811_P12_V	8000x8000	✓	0.72272	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/1000	24	0	0	0	C:\Users\adem...	✓
DS_20240404104814_P12_V	8000x8000	✓	0.78441	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/800	24	0	0	0	C:\Users\adem...	✓
DS_20240404104819_P12_V	8000x8000	✓	0.78429	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/1200	24	0	0	0	C:\Users\adem...	✓
DS_20240404104823_P12_V	8000x8000	✓	0.70223	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/1200	24	0	0	0	C:\Users\adem...	✓
DS_20240404104844_P12_V	8000x8000	✓	0.76481	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/1200	24	0	0	0	C:\Users\adem...	✓
DS_20240404104848_P12_V	8000x8000	✓	0.78738	2024-04-04 10:48:...	DA	M3T	4.4	f/2.8	100	1/1200	24	0	0	0	C:\Users\adem...	✓
DS_20240404104911_P12_V	8000x8000	✓	0.79977	2024-04-04 10:49:...	DA	M3T	4.4	f/2.8	100	1/1000	24	0	0	0	C:\Users\adem...	✓
DS_20240404105011_P12_V	8000x8000	✓	0.82188	2024-04-04 10:50:...	DA	M3T	4.4	f/2.8	100	1/120	24	0	0	0	C:\Users\adem...	✓
DS_20240404105048_P12_V	8000x8000	✓	0.81783	2024-04-04 10:50:...	DA	M3T	4.4	f/2.8	100	1/720	24	0	0	0	C:\Users\adem...	✓
DS_20240404105048_P12_V	8000x8000	✓	0.81387	2024-04-04 10:50:...	DA	M3T	4.4	f/2.8	100	1/800	24	0	0	0	C:\Users\adem...	✓
DS_20240404105111_P12_V	8000x8000	✓	0.80789	2024-04-04 10:51:...	DA	M3T	4.4	f/2.8	100	1/800	24	0	0	0	C:\Users\adem...	✓



Optimizing cameras

4. Tools -> Optimize cameras

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	25mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DJI_20240404104815_0123_V	8000x6000	✓	0.722272	2024-04-04 10:48:15	DJI	M1T	4.4	F2.8	100	1/1000	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104816_0124_V	8000x6000	✓	0.764441	2024-04-04 10:48:16	DJI	M1T	4.4	F2.8	100	1/800	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104817_0125_V	8000x6000	✓	0.754449	2024-04-04 10:48:17	DJI	M1T	4.4	F2.8	100	1/1200	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104818_0126_V	8000x6000	✓	0.722223	2024-04-04 10:48:18	DJI	M1T	4.4	F2.8	100	1/1200	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104819_0127_V	8000x6000	✓	0.781811	2024-04-04 10:48:19	DJI	M1T	4.4	F2.8	100	1/1200	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104820_0128_V	8000x6000	✓	0.727226	2024-04-04 10:48:20	DJI	M1T	4.4	F2.8	100	1/1200	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104821_0129_V	8000x6000	✓	0.756677	2024-04-04 10:48:21	DJI	M1T	4.4	F2.8	100	1/1000	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104822_0130_V	8000x6000	✓	0.827226	2024-04-04 10:48:22	DJI	M1T	4.4	F2.8	100	1/1200	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104823_0131_V	8000x6000	✓	0.813367	2024-04-04 10:48:23	DJI	M1T	4.4	F2.8	100	1/800	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104824_0132_V	8000x6000	✓	0.819968	2024-04-04 10:48:24	DJI	M1T	4.4	F2.8	100	1/800	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104825_0133_V	8000x6000	✓	0.796699	2024-04-04 10:48:25	DJI	M1T	4.4	F2.8	110	1/1000	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104826_0134_V	8000x6000	✓	0.819965	2024-04-04 10:48:26	DJI	M1T	4.4	F2.8	100	1/640	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104827_0135_V	8000x6000	✓	0.82184	2024-04-04 10:48:27	DJI	M1T	4.4	F2.8	100	1/640	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104828_0141_V	8000x6000	✓	0.823469	2024-04-04 10:48:28	DJI	M1T	4.4	F2.8	100	1/640	24	0	0	0	C:\Users\Admin\...	✓
DJI_20240404104829_0142_V	8000x6000	✓	0.823715	2024-04-04 10:48:29	DJI	M1T	4.4	F2.8	100	1/640	24	0	0	0	C:\Users\Admin\...	✓



NARRATE
Needs for Digital Recording and Documentation of Ecclesiastical Cultural Sites in Monasteries and Temples

Optimizing cameras

4. Tools -> Optimize cameras

The screenshot displays the Agisoft Metashape Professional interface. On the left, a file browser shows a list of image files. The main 3D view shows a point cloud of a chalice with a camera alignment dialog box open. The dialog box has the following settings:

- General:**
 - REF
 - Fit to line
 - Fit to plane
 - Fit to volume
 - Fit to point cloud
 - Fit to additional corrections
- Advanced:**
 - Adaptive camera model fitting
 - Estimate to point covariance
 - Fit additional corrections

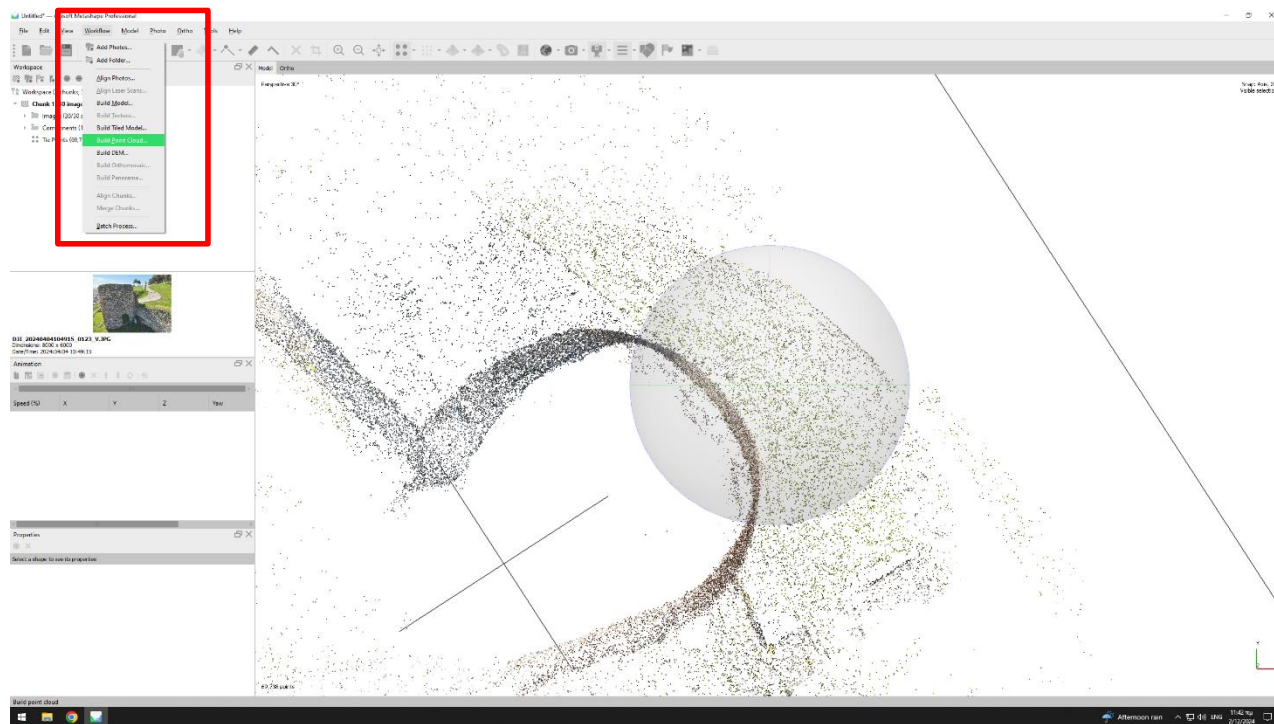
At the bottom, a 'Photos' table lists the camera parameters for each image:

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	Zoom focal	Sensor 1 res	Sensor 2 res	Orientation (°)	Path	Existed
EA_202404010415_0132_V	8000x6000	✓	0.71732	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1000	24	0	0	0	C:\Users\Adem...	✓
EA_202404010416_0134_V	8000x6000	✓	0.78441	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/800	24	0	0	0	C:\Users\Adem...	✓
EA_202404010417_0136_V	8000x6000	✓	0.78429	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1250	24	0	0	0	C:\Users\Adem...	✓
EA_202404010418_0138_V	8000x6000	✓	0.78223	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1250	24	0	0	0	C:\Users\Adem...	✓
EA_202404010419_0139_V	8000x6000	✓	0.76181	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1250	24	0	0	0	C:\Users\Adem...	✓
EA_202404010420_0142_V	8000x6000	✓	0.78738	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1250	24	0	0	0	C:\Users\Adem...	✓
EA_202404010421_0144_V	8000x6000	✓	0.75977	2024/04/01 10:48:00	DS	MIST	4.4	F12.0	100	1/1000	24	0	0	0	C:\Users\Adem...	✓
EA_202404010422_0146_V	8000x6000	✓	0.82158	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/725	24	0	0	0	C:\Users\Adem...	✓
EA_202404010423_0148_V	8000x6000	✓	0.81789	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/725	24	0	0	0	C:\Users\Adem...	✓
EA_202404010424_0150_V	8000x6000	✓	0.81587	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/800	24	0	0	0	C:\Users\Adem...	✓
EA_202404010425_0152_V	8000x6000	✓	0.80598	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/800	24	0	0	0	C:\Users\Adem...	✓
EA_202404010426_0154_V	8000x6000	✓	0.79699	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	110	1/1000	24	0	0	0	C:\Users\Adem...	✓
EA_202404010427_0156_V	8000x6000	✓	0.81985	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/640	24	0	0	0	C:\Users\Adem...	✓
EA_202404010428_0158_V	8000x6000	✓	0.82244	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/640	24	0	0	0	C:\Users\Adem...	✓
EA_202404010429_0162_V	8000x6000	✓	0.82589	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/640	24	0	0	0	C:\Users\Adem...	✓
EA_202404010430_0164_V	8000x6000	✓	0.83778	2024/04/01 10:50:00	DS	MIST	4.4	F12.0	100	1/640	24	0	0	0	C:\Users\Adem...	✓



(Dense) Point Cloud creation

5. Workflow -> Build Point Cloud



(Dense) Point Cloud creation

5. Workflow -> Build Point Cloud

The screenshot displays the Agisoft Metashape Professional interface. The main window shows a 3D point cloud of a stone structure, possibly a wall or a small building, with a yellow bounding box around it. The workspace on the left lists 16 photos. The property panel on the left shows the point cloud's statistics: 16,648,954 points and a coordinate precision of 3.17 mm. The photo alignment table at the bottom lists 16 photos with their respective camera parameters.

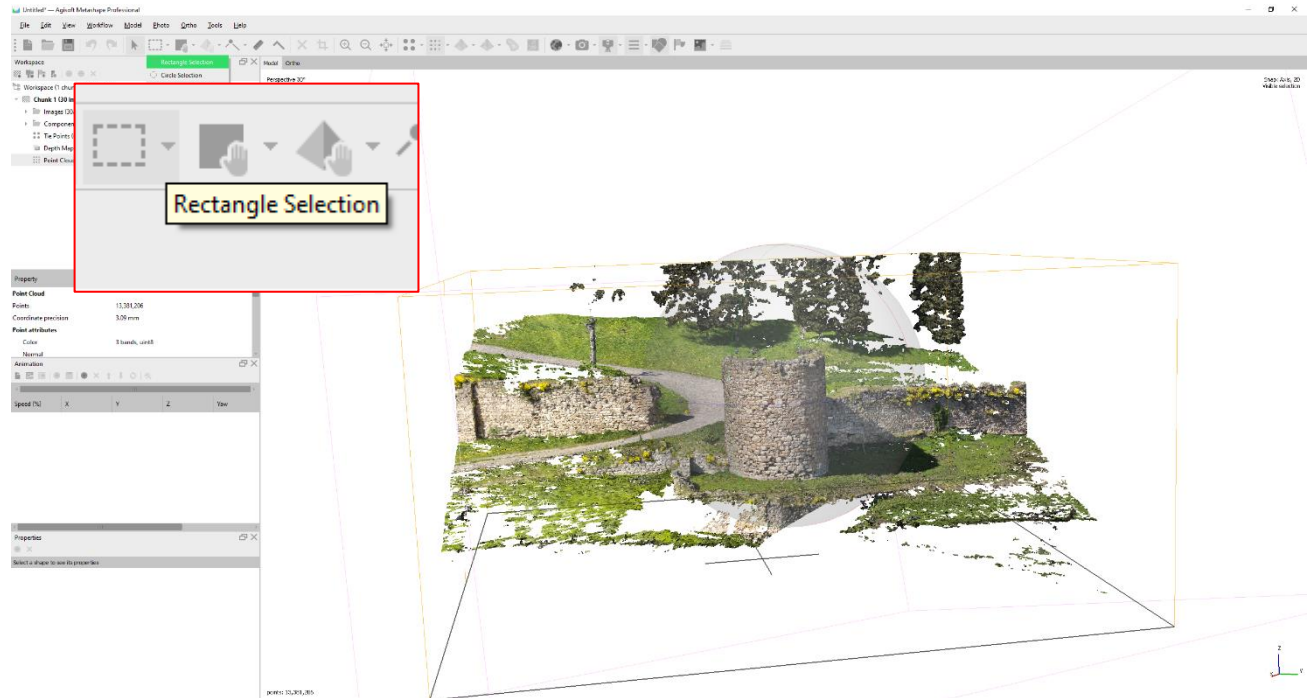
Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	3Dmm focal	Sensor X mm	Sensor Y mm	Orientation (°)	Path	Enabled
DL_202404041800L_F12L_V	800x800	✓	0.77221	2024-04-04 18:00:00	DAI	M12	4.4	F12.5	100	1/1000	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.78441	2024-04-04 18:02:00	DAI	M12	4.4	F12.5	100	1/1000	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.78429	2024-04-04 18:04:00	DAI	M12	4.4	F12.5	100	1/1250	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.78222	2024-04-04 18:04:00	DAI	M12	4.4	F12.5	100	1/1250	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.78411	2024-04-04 18:04:00	DAI	M12	4.4	F12.5	100	1/1250	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.80735	2024-04-04 18:04:00	DAI	M12	4.4	F12.5	100	1/1250	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.79547	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/1000	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.82195	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/725	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.81793	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/725	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.81501	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/800	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.81994	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/800	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.79899	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	110	1/1000	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.81981	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/840	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.82214	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/840	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.82869	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/840	24	0	0	0	C:\Users\ademl...	✓
DL_202404041800L_F12L_V	800x800	✓	0.82715	2024-04-04 18:05:00	DAI	M12	4.4	F12.5	100	1/840	24	0	0	0	C:\Users\ademl...	✓



Clean the background

6. Select the rectangle button -> with your mouse hold and select the unwanted background

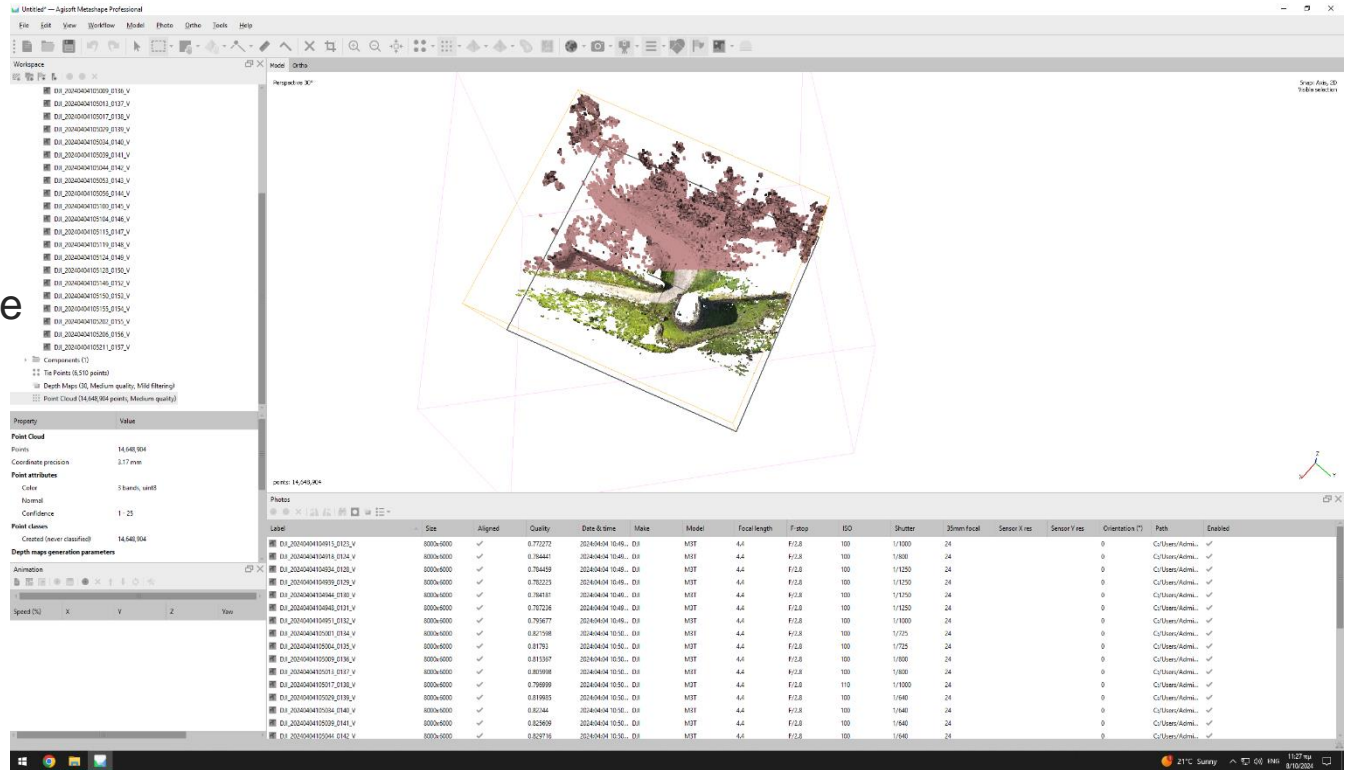
➤ Press **Delete**



Clean the background

6. Select the rectangle button -> with your mouse hold and select the unwanted background

➤ Press Delete



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Model creation

7. Workflow -> Build Model

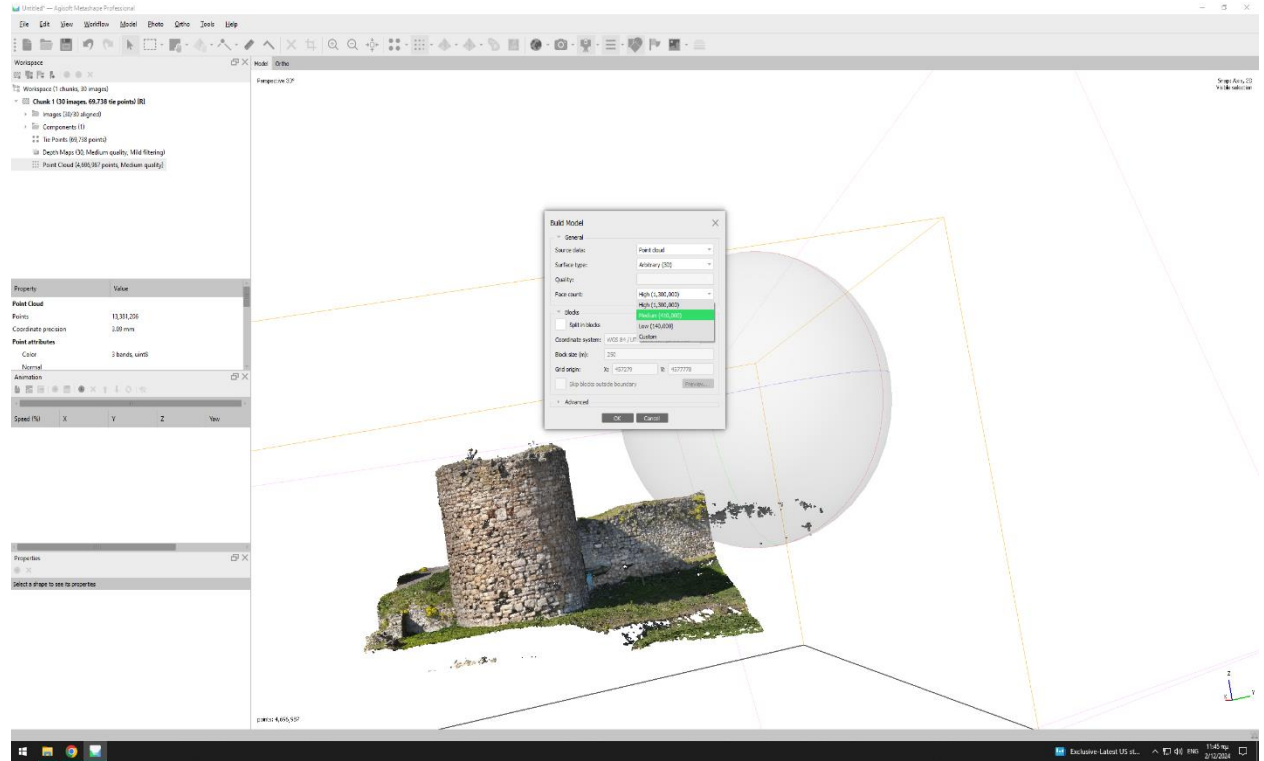
Label	Sec	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	Zoom focal	Sensor F rcs	Shutter F rcs	Orientation (°)	Path	Enabled
EP_202404051911_0121_V	30004000	✓	0.72272	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/1000	24			0	C:\Users\Adm...	✓
EP_202404051911_0122_V	30004000	✓	0.70441	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/800	24			0	C:\Users\Adm...	✓
EP_202404051911_0123_V	30004000	✓	0.75459	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/250	24			0	C:\Users\Adm...	✓
EP_202404051911_0124_V	30004000	✓	0.70225	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/250	24			0	C:\Users\Adm...	✓
EP_202404051911_0125_V	30004000	✓	0.78431	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/250	24			0	C:\Users\Adm...	✓
EP_202404051911_0126_V	30004000	✓	0.83758	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/250	24			0	C:\Users\Adm...	✓
EP_202404051911_0127_V	30004000	✓	0.75077	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/100	24			0	C:\Users\Adm...	✓
EP_202404051911_0128_V	30004000	✓	0.81198	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/725	24			0	C:\Users\Adm...	✓
EP_202404051911_0129_V	30004000	✓	0.81781	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/725	24			0	C:\Users\Adm...	✓
EP_202404051911_0130_V	30004000	✓	0.81987	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/800	24			0	C:\Users\Adm...	✓
EP_202404051911_0131_V	30004000	✓	0.80988	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/800	24			0	C:\Users\Adm...	✓
EP_202404051911_0132_V	30004000	✓	0.79699	20240404 10:08...	DS	M3T	4.4	f/2.8	110	1/1000	24			0	C:\Users\Adm...	✓
EP_202404051911_0133_V	30004000	✓	0.81993	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/840	24			0	C:\Users\Adm...	✓
EP_202404051911_0134_V	30004000	✓	0.8224	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/840	24			0	C:\Users\Adm...	✓
EP_202404051911_0135_V	30004000	✓	0.82598	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/840	24			0	C:\Users\Adm...	✓
EP_202404051911_0136_V	30004000	✓	0.82716	20240404 10:08...	DS	M3T	4.4	f/2.8	100	1/840	24			0	C:\Users\Adm...	✓



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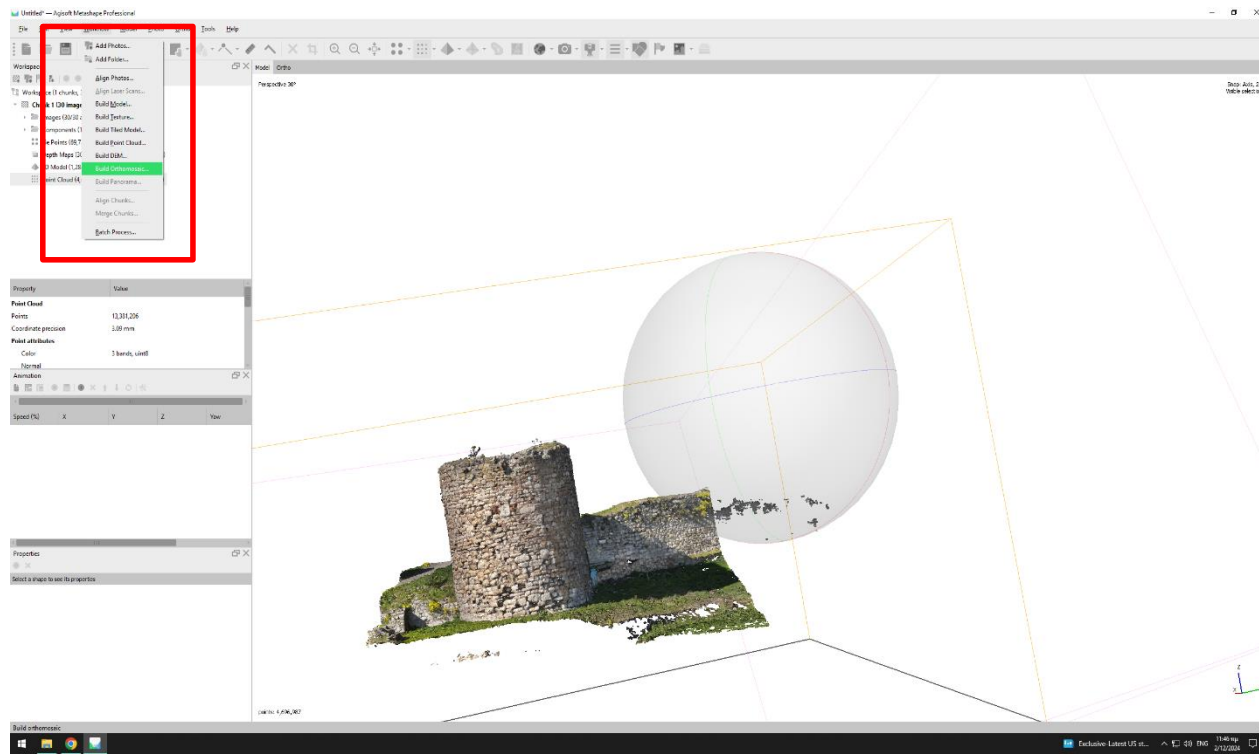
Model creation

7. Workflow -> Build Model



Orthomosaic creation

7. Workflow -> Build Orthomosaic



Orthomosaic creation

8. File -> Export -> Export Orthomosaic

Property

Property	Value
Orthomosaic	
Size	5,170 x 3,684
Coordinate system	WGS 84 (EPSG:4326)
Colors	3 bands, sRGB
Reconstruction parameters	
Blending mode	Mosaic
Surface	Model
Enable hole filling	Yes
Enable ghosting filter	No
Processing time	21 seconds
Animation	
Speed (f/s)	X Y Z New

Export Orthomosaic - TIFF

Coordinate System: [None]

Name: [0.20238916]

Resolution: [0.20238916]

Max. dimension (px): [4096]

Split in blocks (px): [3000 x 1000]

Raster transform: [None]

Background color: [Black]

Region: [Selected bounding box]

Selection bounding box: [-4.370 x 4.485]

Origin: [-4.634 x 5.375]

Total size (px): [5170 x 3684]

Clip to bounding box shapes: []

Write HTML file: []

Write to screen: []

Write world file: [x]

Metadata: [Image descriptors]

Image descriptors: []

Compression: [LZW]

TIFF compression: [LZW]

JPEG quality: [90]

Write as TIFF: [x] Write as TIFF file

Generate TIFF overview: [x]

Save as a thumbnail: [x]

[OK] [Cancel]

Photos

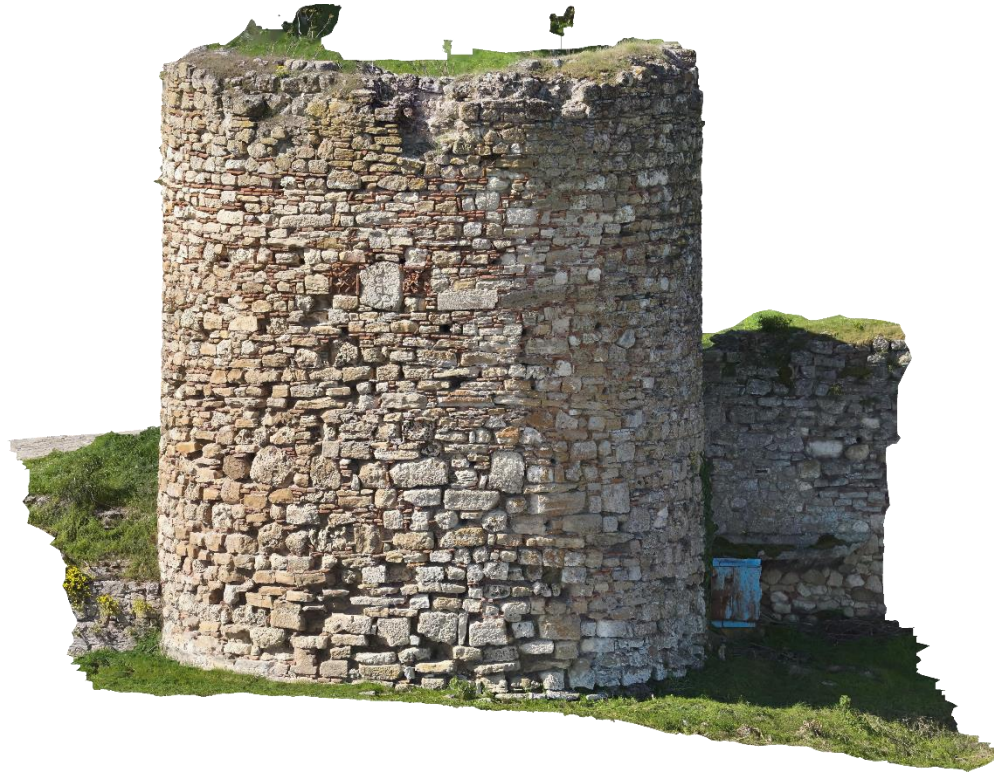
Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F-stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Paths	Enabled
D:_2024\04\10\015_0123_V	8000x6000	✓	0.772272	2024-04-04 10:45... 01	M01	4.4	F7.8	100	1/1000	24				0	C:\Users\Admin...	✓
D:_2024\04\10\018_0124_V	8000x6000	✓	0.764441	2024-04-04 10:45... 01	M01	4.4	F7.8	100	1/800	24				0	C:\Users\Admin...	✓



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Final Orthomosaic



Small Object Step by step

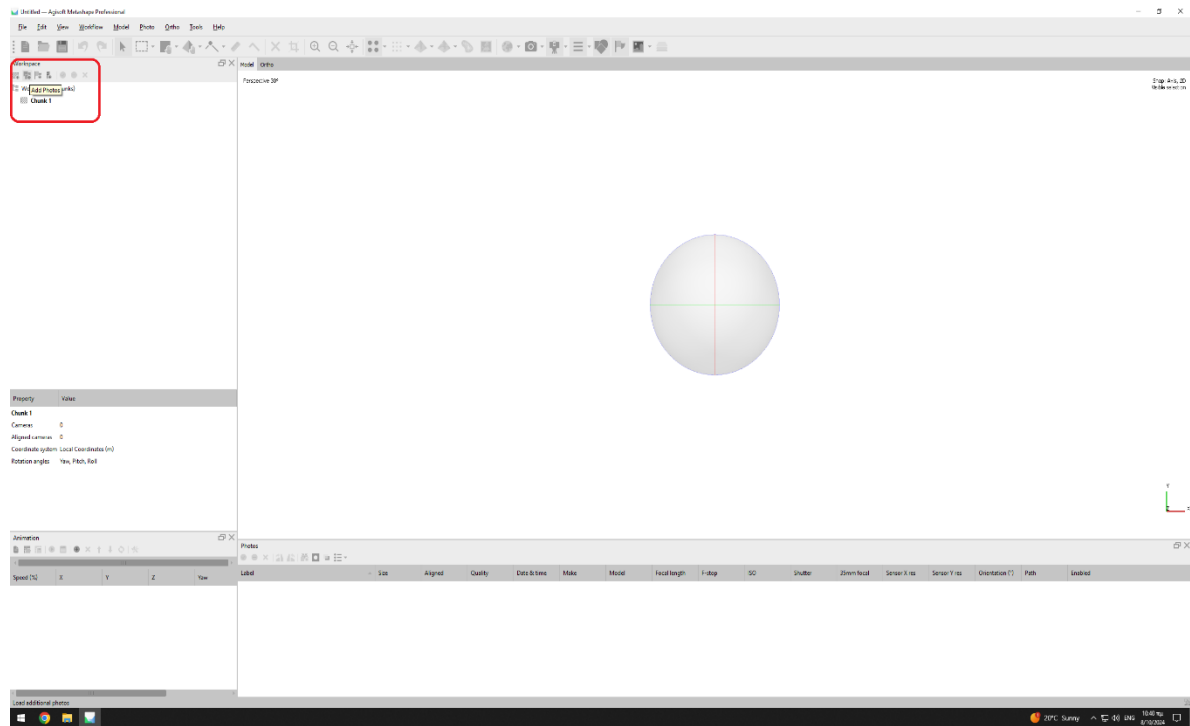


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New Project

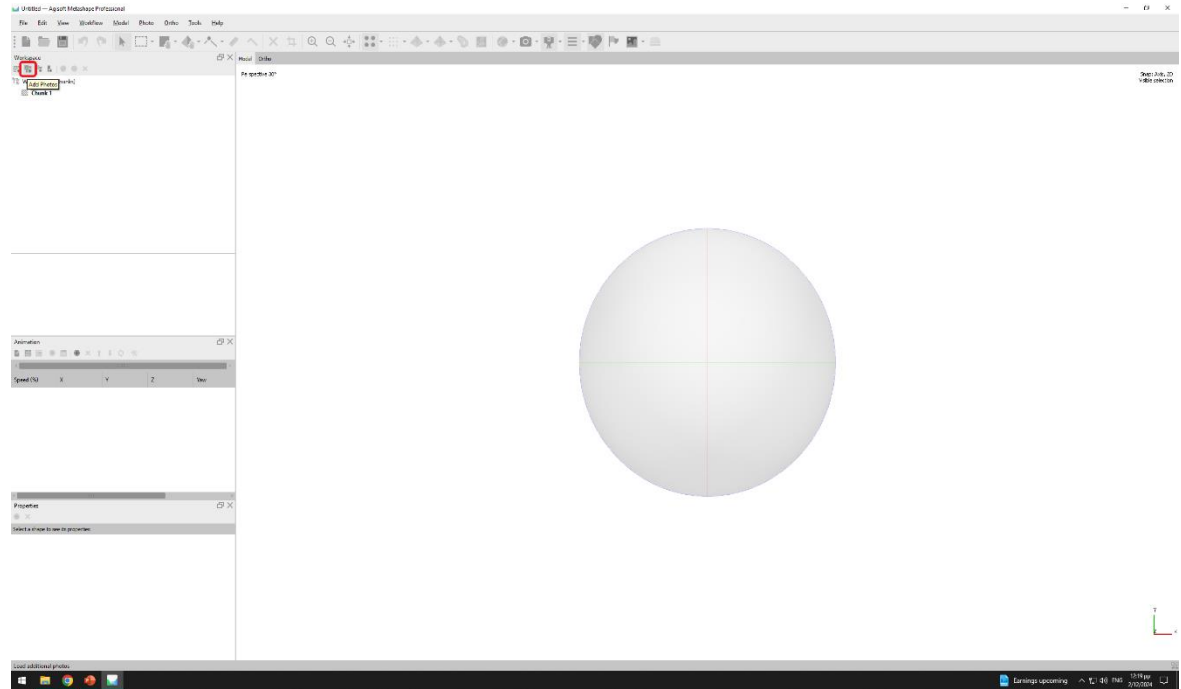
Open the Agisoft Metashape software and create a new project.



Add photos into the project

1. From the Workspace panel -> Add Photos

find the photos from the folder where you have saved them.



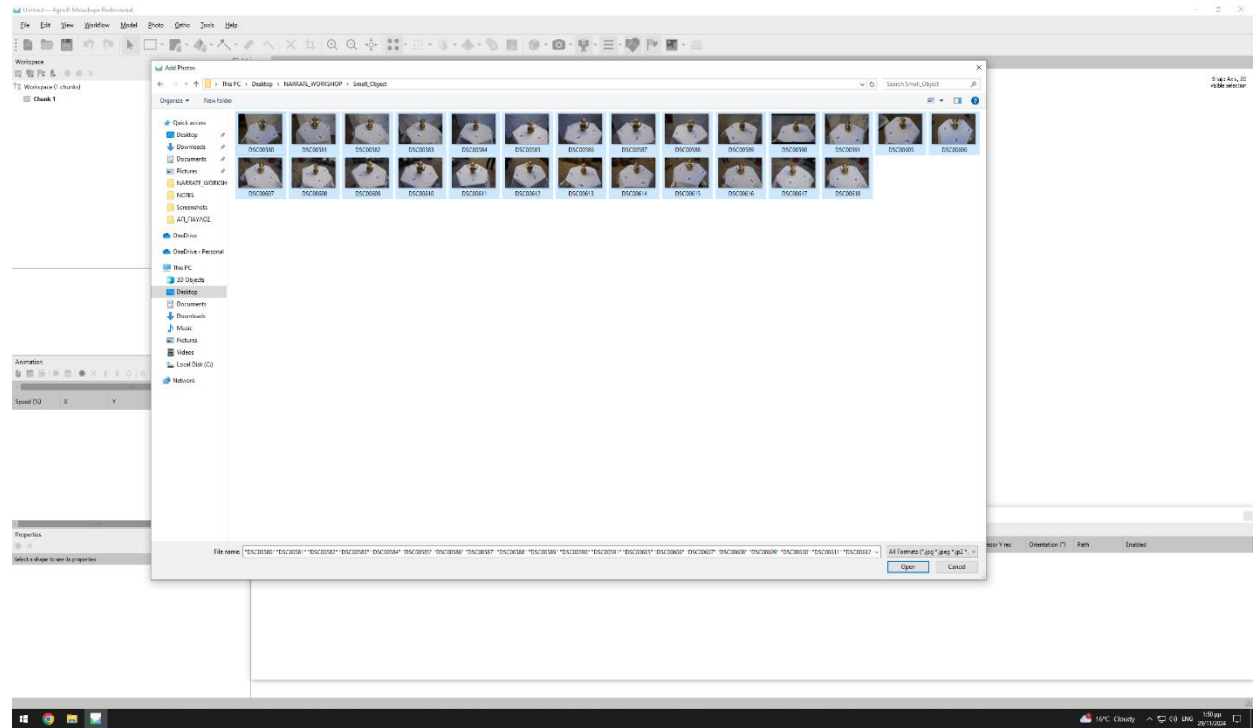
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Needs for Digital Recording and Documentation of Ecclesiastical Cultural Heritage in Monasteries and Temples

Add photos into the project

1. From the Workspace panel -> Add Photos

find the photos from the folder where you have saved them.



Alignment

2. Workflow -> Align Photos

The screenshot displays the Agisoft Metashape Professional interface. The 'Workflow' menu is open, highlighting the 'Align Photos...' option. The 'Reference' and 'Cameras' panels are visible, showing a list of photos with their respective coordinates and a 'Total Error' section. The 'Photos' panel at the bottom shows a detailed table of photo metadata.

Label	Size	Aligned	Quality	Date/Time	Make	Model	Focal length	F stop	ISO	Shutter	Shim focal	Sensor / res	Sensor Y res	Orientation (°)	Path	Enabled
EA_202404041048131021_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1000	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131024_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/800	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131026_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1200	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131028_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1200	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131030_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1200	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131032_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1200	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131034_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/720	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131036_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/720	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131038_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/800	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131040_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/800	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131042_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/1000	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131044_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/720	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131046_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/940	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131048_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/940	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓
EA_202404041048131050_V	8000-8000			20240404 10:48:13	MST	4.4	f1.8	100	1/940	24	0	C:\Users\Nelli...		0	C:\Users\Nelli...	✓

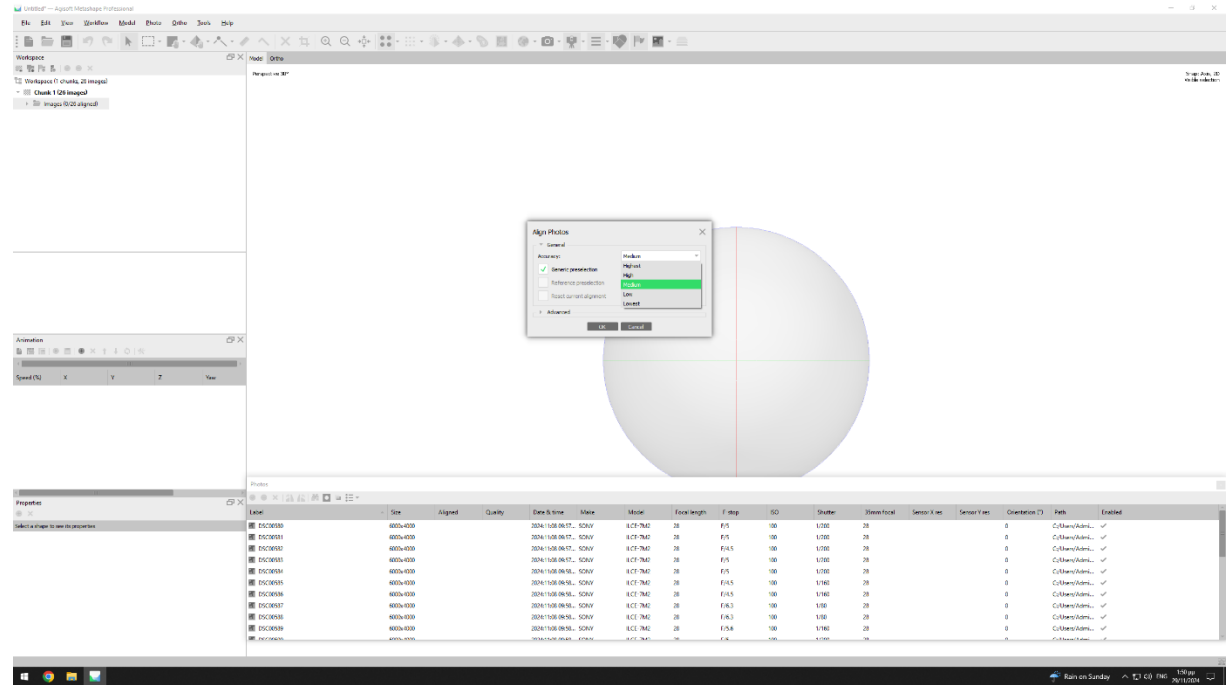


NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

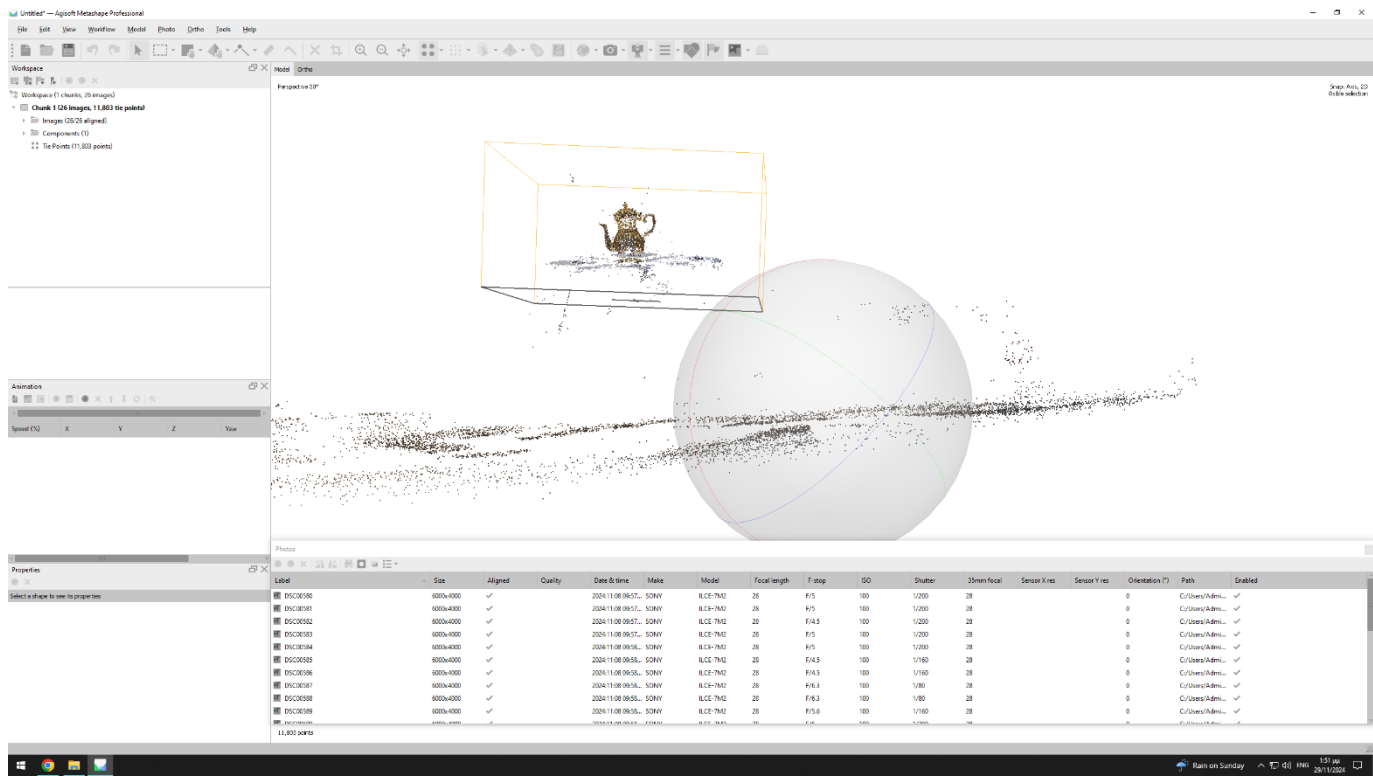
Alignment parameters

2. Workflow -> Align Photos



Tie points creation

3. Workflow -> Build Tiled model



Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Tie points cleaning

4. Model -> Gradual Selection

➤ Exclude **10%** of your points

The screenshot shows the Agisoft Meshape Professional interface. The main workspace displays a 3D model of a teapot with a yellow bounding box around it. To the right, a point cloud of a sphere is visible. The left sidebar contains a menu with options like 'Draw Point', 'Draw Polyline', and 'Draw Polygon'. The bottom panel shows a 'Photos' table with columns for Label, Size, Aligned, Quality, Date & time, Make, Model, Focal length, F stop, ISO, Shutter, 35mm focal, Sensor X res, Sensor Y res, Orientation (?), Path, and Enabled.

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (?)	Path	Enabled
DSC00308	6000x4000	✓		2024:11:08:09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:57...	SONY	ILCE-7M2	28	F14.5	100	1/2000	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSC00304	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSC00305	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DSC00306	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DSC00307	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F16.3	100	1/800	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F16.3	100	1/800	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F15.6	100	1/1600	28			0	C:\Users\Admin...	✓
DSC00308	6000x4000	✓		2024:11:08:09:56...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓



Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Noise filtering 1/3

Projection Accuracy

Projection Accuracy
10-30

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	Format	ISO	Shutter	X-axis focal	Sensor X mm	Sensor Y mm	Orientation (°)	Path	Enabled
ESC02080	600x400	✓		2024-11-09 09:57	SONY	LCR-7642	28	F15	100	1/200	28	0	0	0	C:\Users\Adem...	✓
ESC02081	600x400	✓		2024-11-09 09:57	SONY	LCR-7642	28	F15	100	1/200	28	0	0	0	C:\Users\Adem...	✓
ESC02082	600x400	✓		2024-11-09 09:57	SONY	LCR-7642	28	F14.5	100	1/200	28	0	0	0	C:\Users\Adem...	✓
ESC02083	600x400	✓		2024-11-09 09:57	SONY	LCR-7642	28	F15	100	1/200	28	0	0	0	C:\Users\Adem...	✓
ESC02084	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F15	100	1/200	28	0	0	0	C:\Users\Adem...	✓
ESC02085	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F14.5	100	1/160	28	0	0	0	C:\Users\Adem...	✓
ESC02086	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F14.5	100	1/160	28	0	0	0	C:\Users\Adem...	✓
ESC02087	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F16.5	100	1/80	28	0	0	0	C:\Users\Adem...	✓
ESC02088	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F16.5	100	1/80	28	0	0	0	C:\Users\Adem...	✓
ESC02089	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F15.6	100	1/160	28	0	0	0	C:\Users\Adem...	✓
ESC02090	600x400	✓		2024-11-09 09:56	SONY	LCR-7642	28	F15	100	1/200	28	0	0	0	C:\Users\Adem...	✓



Noise filtering 2/3

Reconstruction uncertainty

Reconstruction
Uncertainty
~10

Property Value

Tie Points

Points 11,002 of 17,275

Point colors 3 bands, uint8

Key points 85,50 kbit

Average tie point multiplicity 2.3051

Alignment parameters

Automation

Speed (%) X Y Z View

Photos

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
ESC00380	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
ESC00381	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
ESC00382	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F4.5	100	1/200	28			0	C:\Users\Admin\...	✓
ESC00383	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
ESC00384	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
ESC00385	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F4.5	100	1/160	28			0	C:\Users\Admin\...	✓
ESC00386	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F4.5	100	1/160	28			0	C:\Users\Admin\...	✓
ESC00387	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F4.5	100	1/80	28			0	C:\Users\Admin\...	✓
ESC00388	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F4.3	100	1/80	28			0	C:\Users\Admin\...	✓
ESC00389	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5.6	100	1/160	28			0	C:\Users\Admin\...	✓
ESC00390	6000x4000	✓		2024-11-08 09:57	SONY	RJCE-TM2	28	F/5.6	100	1/200	28			0	C:\Users\Admin\...	✓



Noise filtering 3/3

Reprojection error

Reprojection
error < 1

The screenshot displays the Agisoft Metashape Professional interface. The main workspace shows a 3D point cloud of a teapot, with a yellow bounding box around it. A 'Gradual Selection' dialog box is open, showing 'Criterion: Reprojection error' and 'Level: 0.418163'. The software interface includes a menu bar, toolbar, workspace, and a 'Photos' table at the bottom.

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DSMC0380	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSMC0381	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSMC0382	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/2000	28			0	C:\Users\Admin...	✓
DSMC0383	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSMC0384	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DSMC0385	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DSMC0386	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DSMC0387	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/800	28			0	C:\Users\Admin...	✓
DSMC0388	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/800	28			0	C:\Users\Admin...	✓
DSMC0389	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/1600	28			0	C:\Users\Admin...	✓
DSMC0390	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓



NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Optimizing cameras

5. Tools -> Optimize cameras

Property Value

Tie Points

Points 11,803 of 17,279

Point colors 3 bands, uint8

Key points 85.58 MB

Average tie point multiplicity 2.201

Alignment parameters

Automation

Speed (m/s) X Y Z yaw

Optimize Camera Alignment

General

Fit F Fit 0, 0y

Fit 1 Fit 1z

Fit 2 Fit 2z

Fit 3 Fit 3z

Fit 4 Fit 4z

Advanced

Adaptive camera model fitting

Estimate tie point covariance

Fit additional corrections

OK Cancel

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (?)	Path	Enabled
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/80	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/80	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓



NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Heritages in Monasteries and Temples

Clean the background

6. Select the rectangle button -> with your mouse hold and select the unwanted background

➤ Press **Delete**

The screenshot shows the Agisoft Metashape Professional interface. A red box highlights the 'Rectangle Selection' tool in the toolbar. The main workspace displays a 3D model of a chalice with a rectangular selection box around it. The Properties panel on the left shows the 'Depth Maps' section with 'Count' set to 25 and 'Depth map generation parameters' set to 'Ultra High'. The 'Properties' panel at the bottom shows a table of metadata for the selected object.

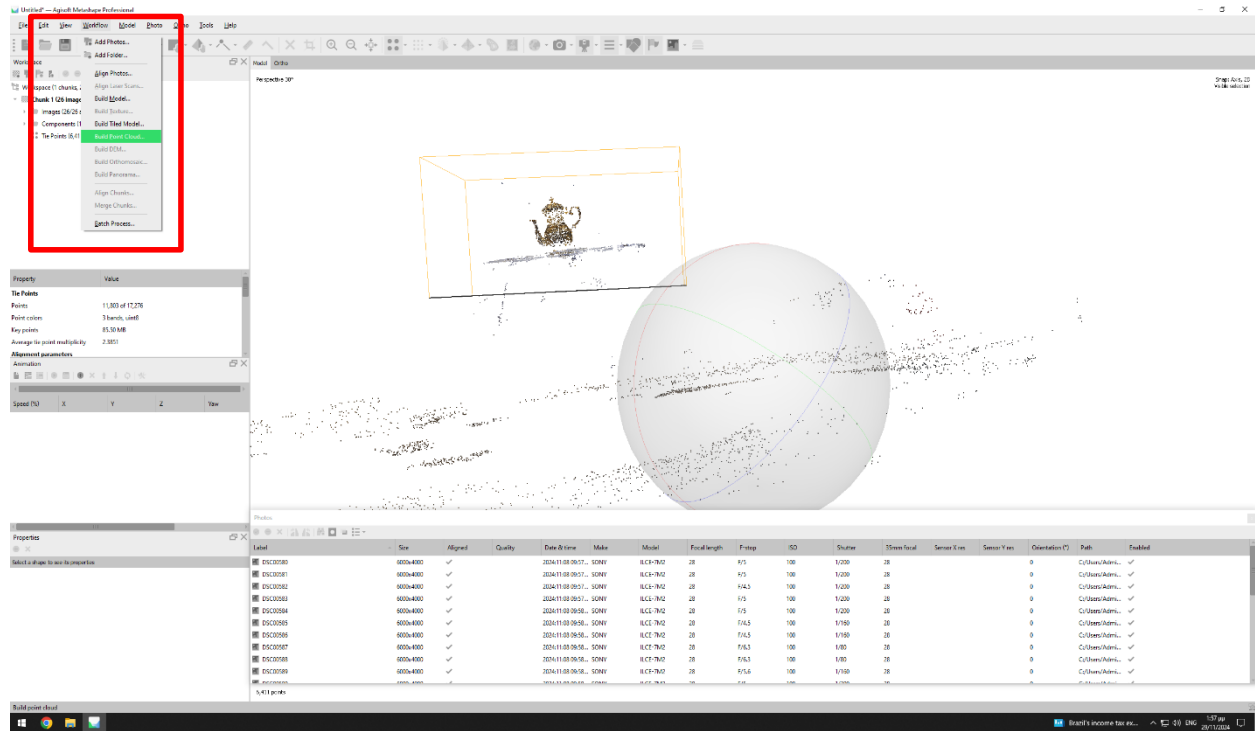
Label	Size	Aligned	Quality	Date Range	Make	Model	Focal length	F-stop	ISO	Shutter	Shutter Speed	Sensor Size	Sensor Type	Orientation	RAW	Enabled
DSC00581	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5	100	1/200	28	0	C/Usps/AdmL	✓	✓	✓
DSC00581	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5	100	1/200	28	0	C/Usps/AdmL	✓	✓	✓
DSC00582	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/4.5	100	1/200	28	0	C/Usps/AdmL	✓	✓	✓
DSC00582	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5	100	1/200	28	0	C/Usps/AdmL	✓	✓	✓
DSC00583	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5	100	1/200	28	0	C/Usps/AdmL	✓	✓	✓
DSC00583	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/4.5	100	1/160	23	0	C/Usps/AdmL	✓	✓	✓
DSC00586	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/4.5	100	1/160	23	0	C/Usps/AdmL	✓	✓	✓
DSC00587	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/4.5	100	1/80	23	0	C/Usps/AdmL	✓	✓	✓
DSC00588	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/4.5	100	1/160	23	0	C/Usps/AdmL	✓	✓	✓
DSC00589	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5.6	100	1/160	23	0	C/Usps/AdmL	✓	✓	✓
DSC00590	6000-4000	✓	✓	2024-11-09 08:51	SONY	LCR-TM2	28	F/5	100	1/160	23	0	C/Usps/AdmL	✓	✓	✓



NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Point Cloud creation

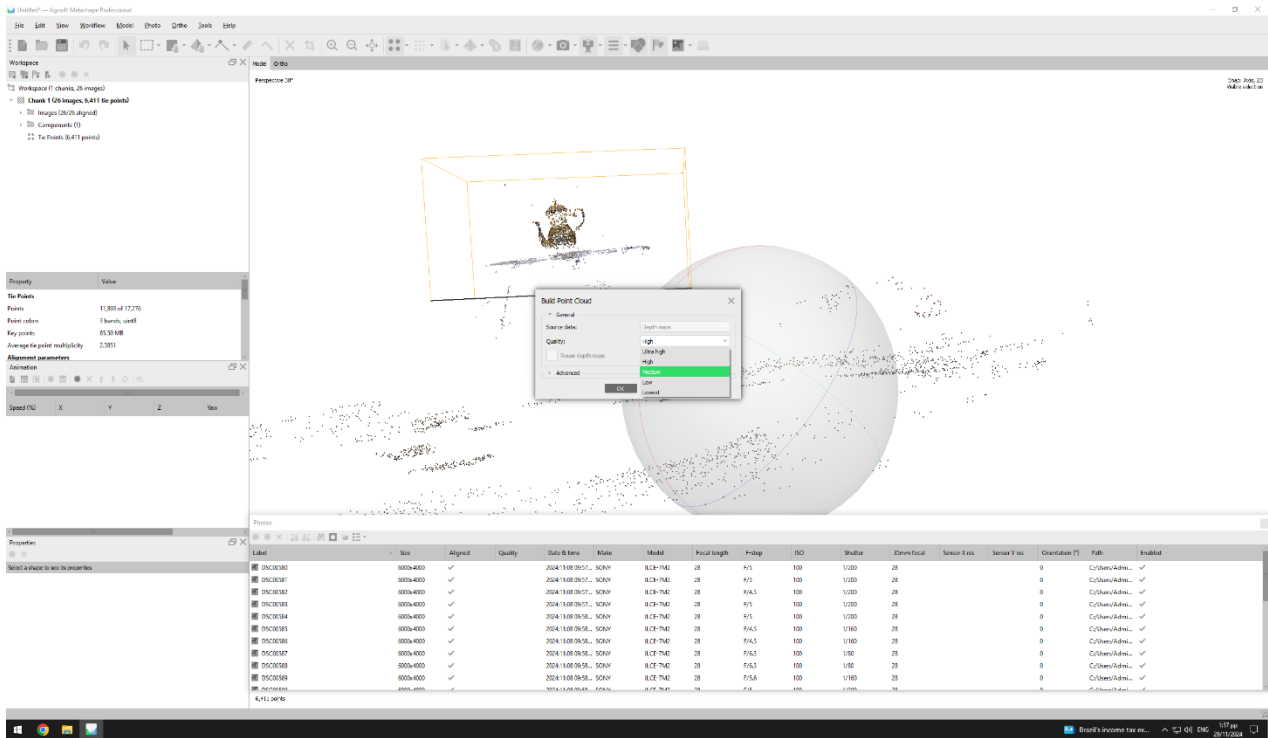


7. Workflow -> Build Point Cloud

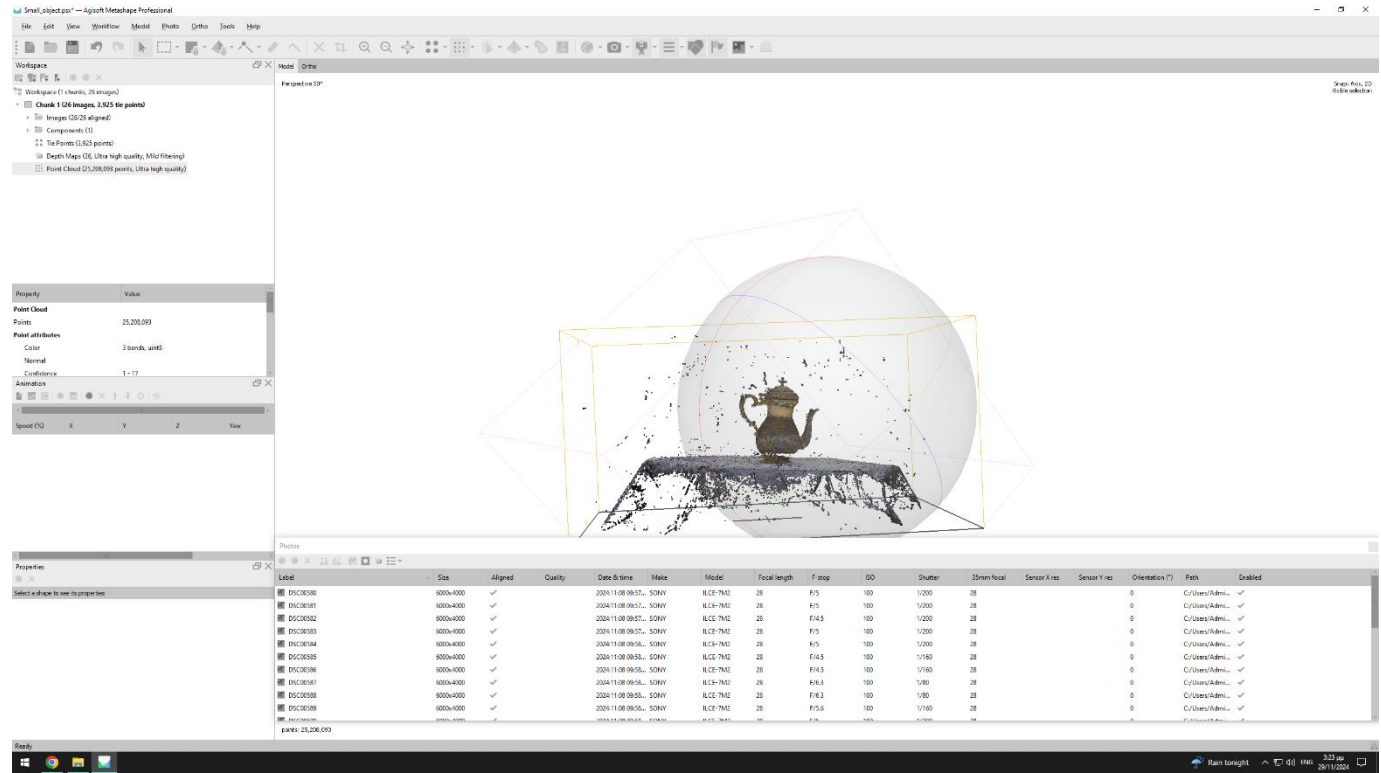


Point Cloud creation

7. Workflow -> Build Point Cloud



Point Cloud creation



Markers' detection

8. Tools -> Markers -> Detect Markers

The screenshot displays the Agisoft Metashape Professional interface. The 'Tools' menu is open, and the 'Markers' sub-menu is selected, showing the 'Detect Markers' option. The main 3D view shows a point cloud of a chalice with several white markers placed on its surface. The 'Properties' panel at the bottom shows a table of detected markers.

Label	Size	Aligned	Quality	Date & Time	Make	Model	Focal length	F-stop	ISO	Shutter	32mm focal	Sensor X mm	Sensor Y mm	Orientation (°)	Path	Enabled
DSC00380	8000x4000	✓		20241108 08:57	SONY	LCE-7M2	25	F/5	100	1/200	25			0	C:\Users\Admin\...	✓
DSC00381	8000x4000	✓		20241108 08:57	SONY	LCE-7M2	25	F/5	100	1/200	25			0	C:\Users\Admin\...	✓
DSC00382	8000x4000	✓		20241108 08:57	SONY	LCE-7M2	28	F/4.5	100	1/200	28			0	C:\Users\Admin\...	✓
DSC00383	8000x4000	✓		20241108 08:57	SONY	LCE-7M2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
DSC00384	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/5	100	1/200	28			0	C:\Users\Admin\...	✓
DSC00385	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/4.5	100	1/160	28			0	C:\Users\Admin\...	✓
DSC00386	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/4.5	100	1/160	28			0	C:\Users\Admin\...	✓
DSC00387	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/5.6	100	1/80	28			0	C:\Users\Admin\...	✓
DSC00388	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/4.5	100	1/80	28			0	C:\Users\Admin\...	✓
DSC00389	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/5.6	100	1/160	28			0	C:\Users\Admin\...	✓
DSC00390	8000x4000	✓		20241108 08:58	SONY	LCE-7M2	28	F/4.5	100	1/200	28			0	C:\Users\Admin\...	✓



Markers' detection

8. Tools -> Markers -> Detect Markers

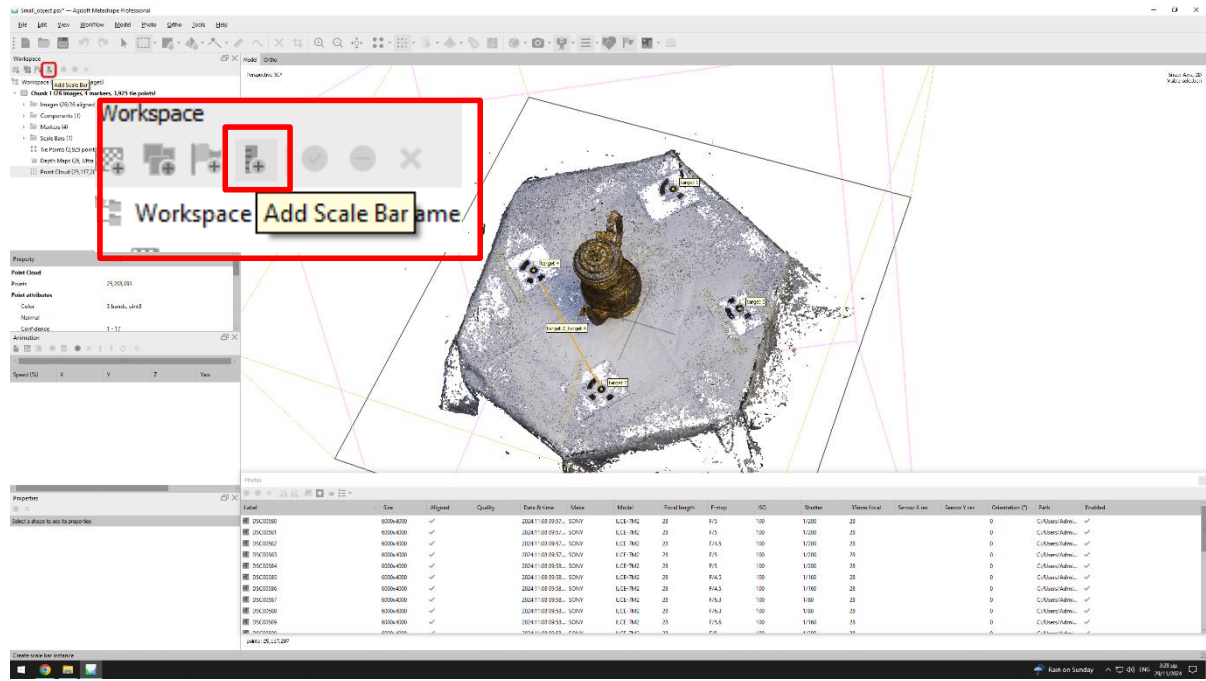
The screenshot displays the Agisoft Metashape Professional interface. The main workspace shows a 3D point cloud of a metal object, likely a chalice, with three markers detected and labeled 'marker'. The Properties panel on the left shows the 'Point Cloud' settings, including 'Points' (25,200,965) and 'Confidence' (1.17). The bottom panel shows a table of detected markers.

Label	Size	Aligned	Quality	Date & Time	Make	Model	Focal length	F-stop	ISO	Shutter	Stem focal	Series X cm	Series Y cm	Distortion (%)	Roll	Enabled
0XC0090	800x-400	✓		2024-11-06 06:57	SONY	ILCE 7M2	28	F15	100	1/200	28	0	0	0	0	✓
0XC0091	800x-400	✓		2024-11-06 06:57	SONY	ILCE 7M2	28	F/5	100	1/200	28	0	0	0	0	✓
0XC0092	800x-400	✓		2024-11-06 06:57	SONY	ILCE 7M2	28	F14.5	100	1/200	28	0	0	0	0	✓
0XC0093	800x-400	✓		2024-11-06 06:57	SONY	ILCE 7M2	28	F/5	100	1/200	28	0	0	0	0	✓
0XC0094	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F15	100	1/200	28	0	0	0	0	✓
0XC0095	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F14.5	100	1/160	28	0	0	0	0	✓
0XC0096	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F14.5	100	1/160	28	0	0	0	0	✓
0XC0097	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F14.5	100	1/80	28	0	0	0	0	✓
0XC0098	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F14.5	100	1/80	28	0	0	0	0	✓
0XC0099	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F15.5	100	1/160	28	0	0	0	0	✓
0XC0099	800x-400	✓		2024-11-06 06:56	SONY	ILCE 7M2	28	F15.5	100	1/160	28	0	0	0	0	✓



Scale bar

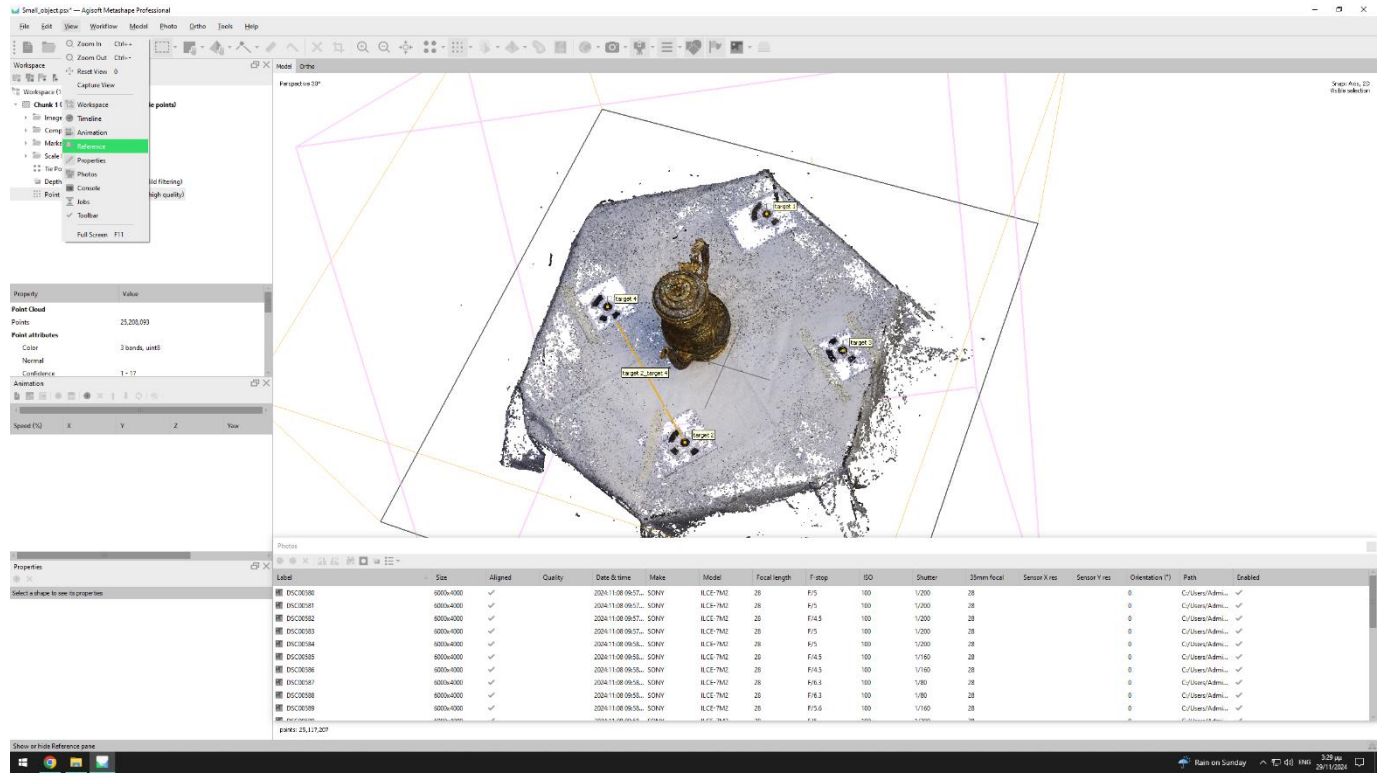
9. From Workspace menu
-> Add scale bar



Reference menu

9. Go to Reference menu

(you can add it from View->Reference)

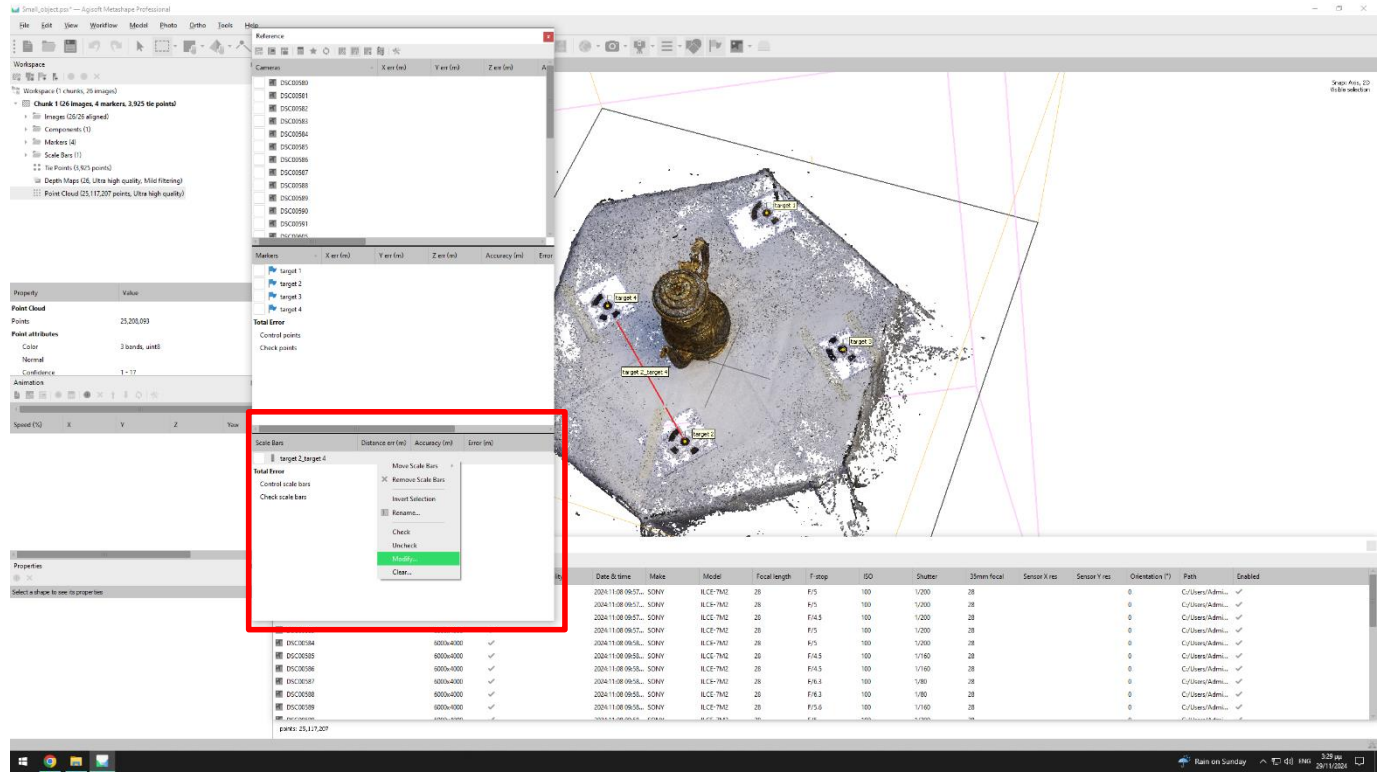


NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Heritages in Monasteries and Temples

Modify Reference

Target	Distance (m)
1-4	0.390 m
1-3	0.362 m
2-3	0.370 m
2-4	0.355 m



NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Distance between points

10. Type the measured distance between marker points

The screenshot displays the Agisoft Meshape Professional interface. The main view shows a 3D point cloud of a chalice with four marker points labeled 'target 1', 'target 2', 'target 3', and 'target 4'. A 'Modify Reference' dialog box is open, showing a 'Distance (m)' field with a red box around it. The software interface includes a workspace, camera settings, markers list, and a table of camera data.

Camera	X (m)	Y (m)	Z (m)	Accuracy (m)	Error
DSC05880					
DSC05881					
DSC05882					
DSC05883					
DSC05884					
DSC05885					
DSC05886					
DSC05887					
DSC05888					
DSC05889					
DSC05890					
DSC05891					
not named					

target_2_target_4	Distance (m)	Accuracy (m)	Error (m)
Total Error			
Control points			
Check points			

Camera	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DSC05883	2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05884	2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05885	2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05886	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05887	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05888	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05889	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05890	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
DSC05891	2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28	0	0	0	C:\Users\Admin...	✓
not named													



Distance between points

10. Type the measured distance between marker points

The screenshot shows the Autodesk Metashape Professional interface. A point cloud of a chalice is visible in the center. A 'Measure' dialog box is open, showing 'Column: Distance (m)' and 'Value: 0.335'. The 'Measure' dialog has a 'Modify Reference' dropdown and 'OK' and 'Cancel' buttons. Below the dialog, a table lists various points and their properties.

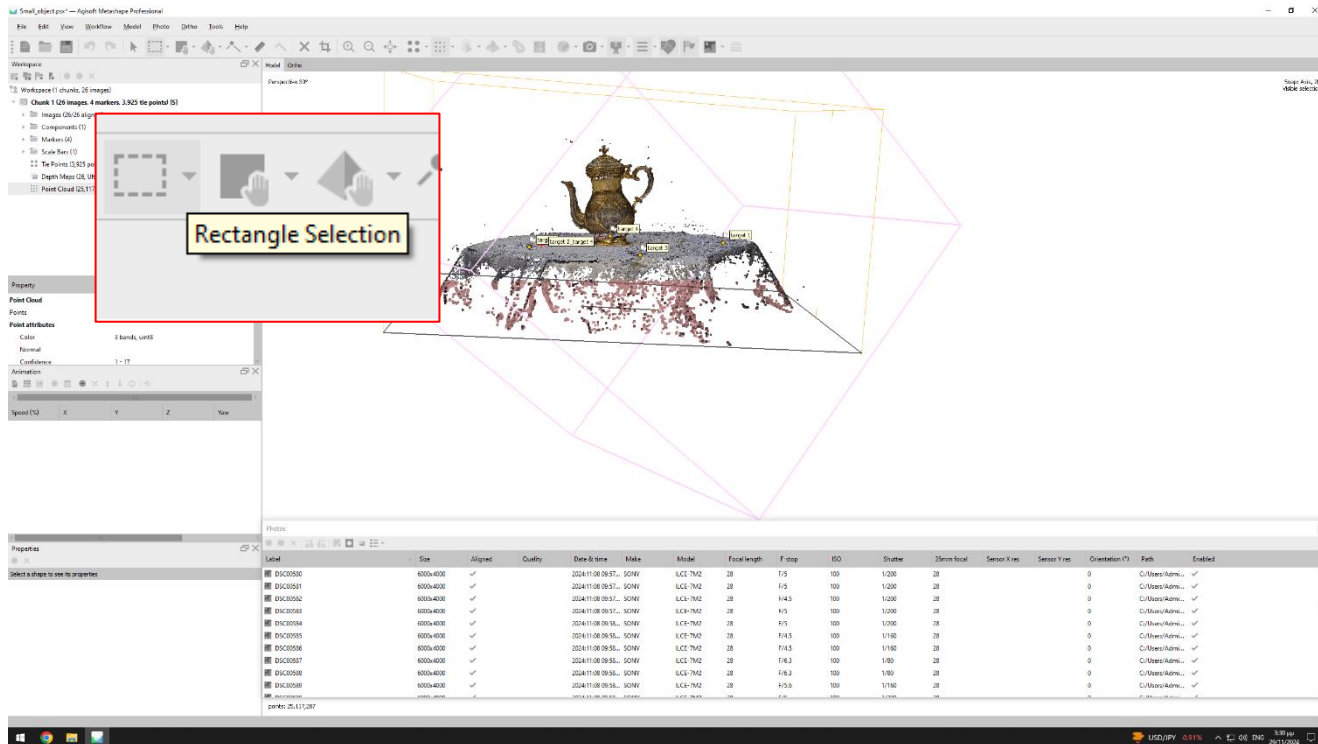
ID	Distance (m)	Accuracy (mm)	Line (m)
target 1			
target 2			
target 3			
target 4			
Scale base			
target 2 - target 4			
Total Error			
Control scale base			
Check scale base			



Point cloud cleaning

11. Select the rectangle button -> with your mouse hold and select the unwanted background

➤ Press **Delete**

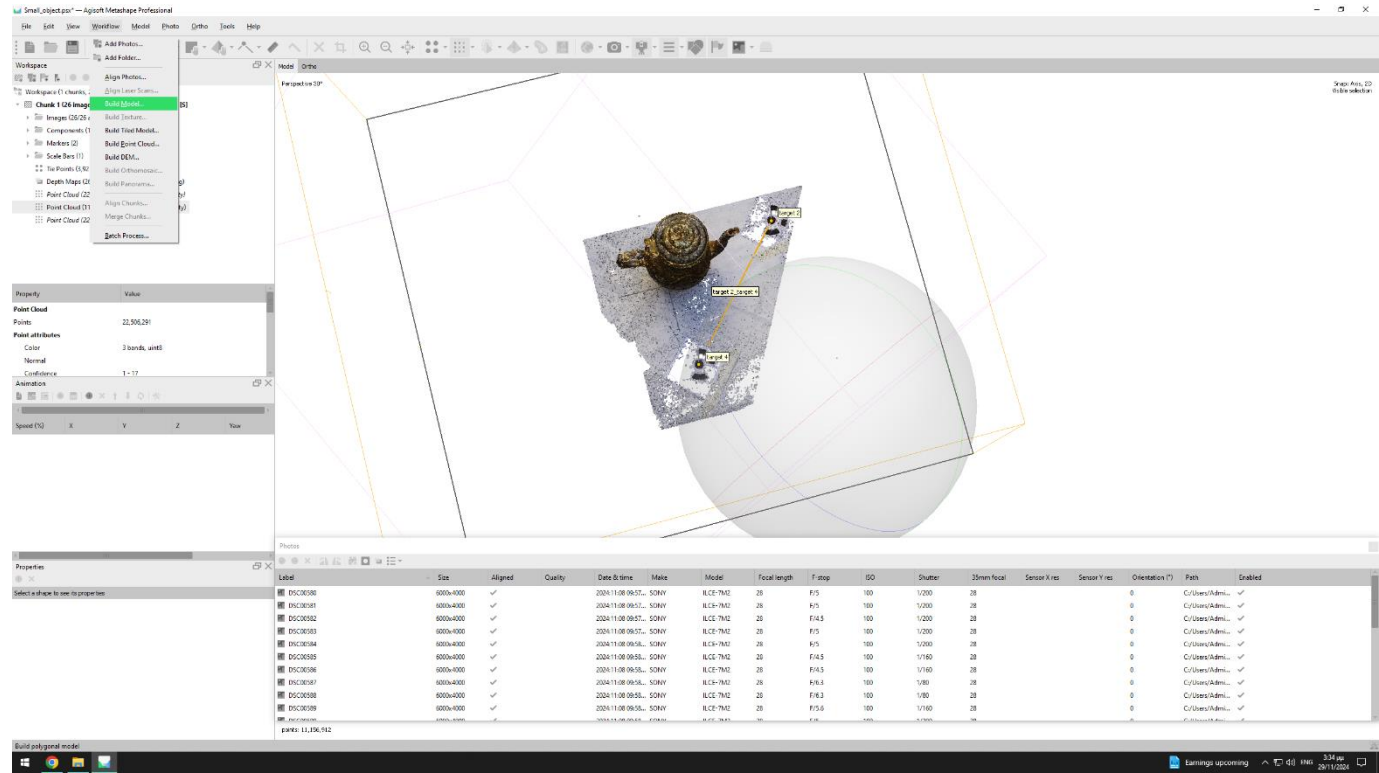


NARRATE

Needs for Digital Recording and Documenta-
tion of Ecclesiastical Cultural Treasures in
Monasteries and Temples

Model creation

12. Workflow -> Build Model



NARRATE

Needs for Digital Recording and Documentation of Ecclesiastical Cultural Treasures in Monasteries and Temples

Model creation

12. Workflow -> Build Model

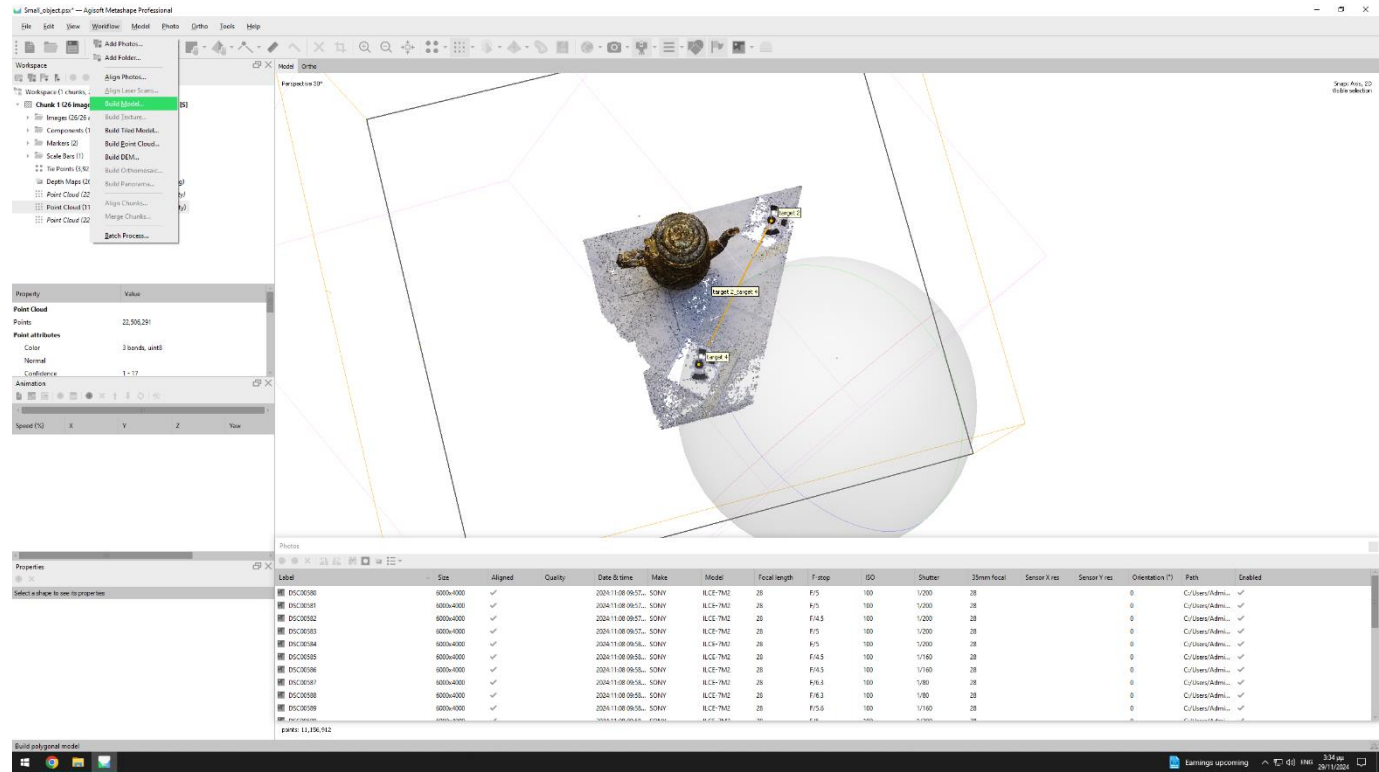
The screenshot displays the Agisoft Meshape Professional software interface. The main workspace shows a 3D model of a chalice with a grid overlay. A 'Build Model' dialog box is open, showing settings for 'Point cloud' source data, 'Arbitrary (D3)' surface type, and 'Medium (50,000)' face count. The 'Advanced' section is also visible.

Below the main workspace, a 'Photos' table lists the source images used for the model. The table includes columns for Label, Size, Aligned, Quality, Date & time, Make, Model, Focal length, F stop, ISO, Shutter, 35mm focal, Sensor X res, Sensor Y res, Orientation (?), Path, and Enabled.

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (?)	Path	Enabled
ESC0308	800x400	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
ESC03081	800x400	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
ESC03082	800x400	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/200	28			0	C:\Users\Admin...	✓
ESC03083	800x400	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
ESC03084	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
ESC03085	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
ESC03086	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
ESC03087	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/80	28			0	C:\Users\Admin...	✓
ESC03088	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/80	28			0	C:\Users\Admin...	✓
ESC03089	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/160	28			0	C:\Users\Admin...	✓
ESC03090	800x400	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓



Model creation



The screenshot shows the Agisoft Meshape Professional software interface. The main workspace displays a 3D model of a chalice, which is a point cloud with a mesh overlay. The interface includes a menu bar, a toolbar, a workspace with a point cloud and a mesh, a properties panel, and a photo log table.

Properties Panel:

- Property: Value
- Point Cloud
- Points: 21,506,291
- Point attributes
- Color: 3 bands, uint8
- Normal
- Confidence: 1 - 17
- Animation
- Speed (m/s): X, Y, Z, New

Photo Log Table:

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/80	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/80	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/160	28			0	C:\Users\Admin...	✓
DSC03038	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/160	28			0	C:\Users\Admin...	✓
pano_11_08_09_52	8000x4000	✓		2024-11-08 09:52...	SONY	ILCE-7M2	35	F15	100	1/200	35			0	C:\Users\Admin...	✓



Model creation

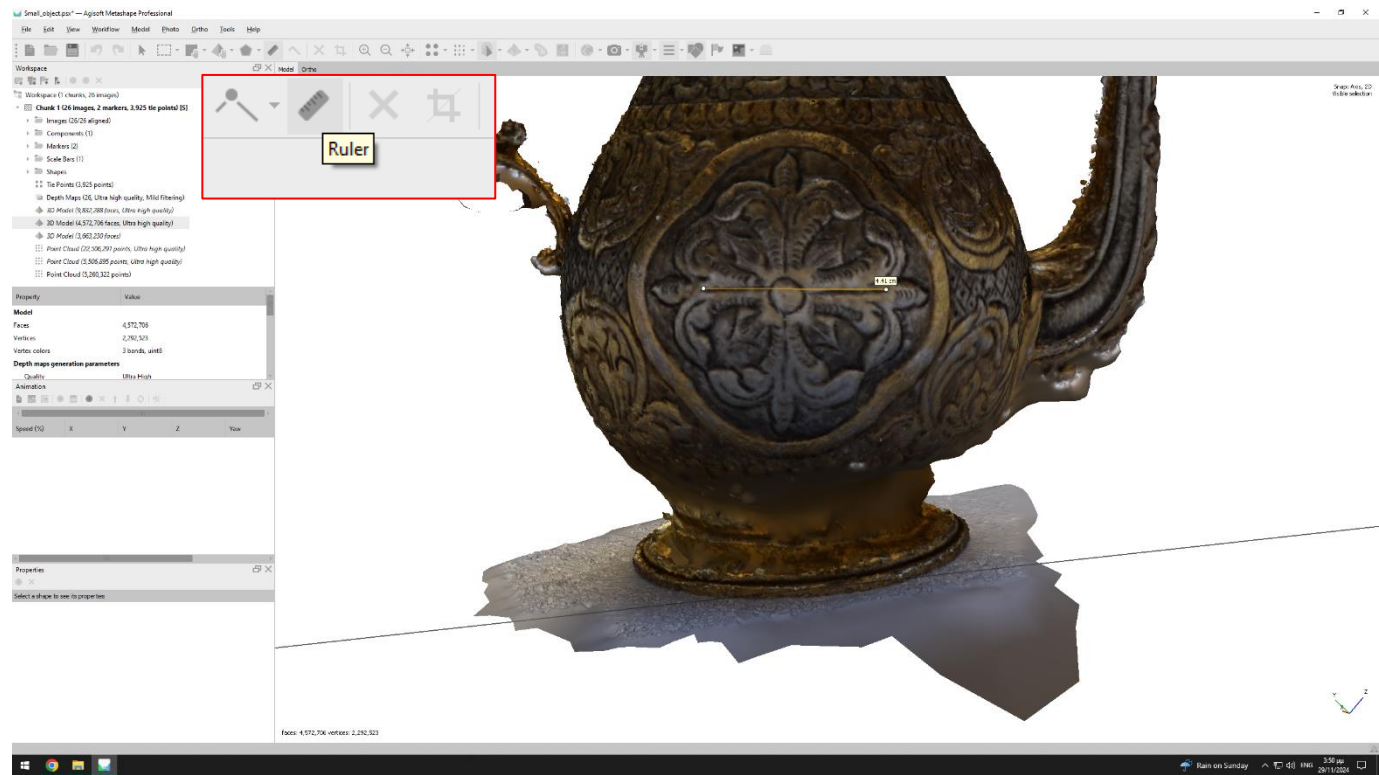
The screenshot displays the Agisoft Meshape Professional interface. The central 3D view shows a highly detailed golden chalice model positioned on a white sphere within a perspective view. The left-hand panel contains a project tree on the left and a properties panel on the right. The project tree lists various processing steps such as 'Chunk 1 (24 images, 2 markers, 3,925 tie points B1)', 'Ineages (5/25) aligned', 'Component (1)', 'Markers (2)', 'Scale Bars (1)', 'Shapes', 'Tie Points (3,825 points)', 'Depth Maps (24, Ultra high quality, Mid filtering)', '3D Model (1,862,388 faces, Ultra high quality)', '3D Model (1,862,388 faces, Ultra high quality)', 'Point Cloud (22,506,797 points, Ultra high quality)', and 'Point Cloud (2,505,885 points, Ultra high quality)'. The properties panel shows details for the selected '3D Model (1,862,388 faces, Ultra high quality)', including 'Faces: 4,372,705', 'Vertices: 2,781,323', and 'Vertex colors: 3 bands, uint8'. The bottom panel features a 'Photos' table with the following columns: Label, Size, Aligned, Quality, Date & time, Make, Model, Focal length, F stop, ISO, Shutter, 35mm focal, Sensor X res, Sensor Y res, Orientation (°), Path, and Enabled. The table lists 12 photos with their respective metadata.

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DSXC0308	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/200	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSXC0304	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/160	28			0	C:\Users\Admin...	✓
DSXC0307	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/80	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/80	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/160	28			0	C:\Users\Admin...	✓
DSXC0308	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/200	28			0	C:\Users\Admin...	✓



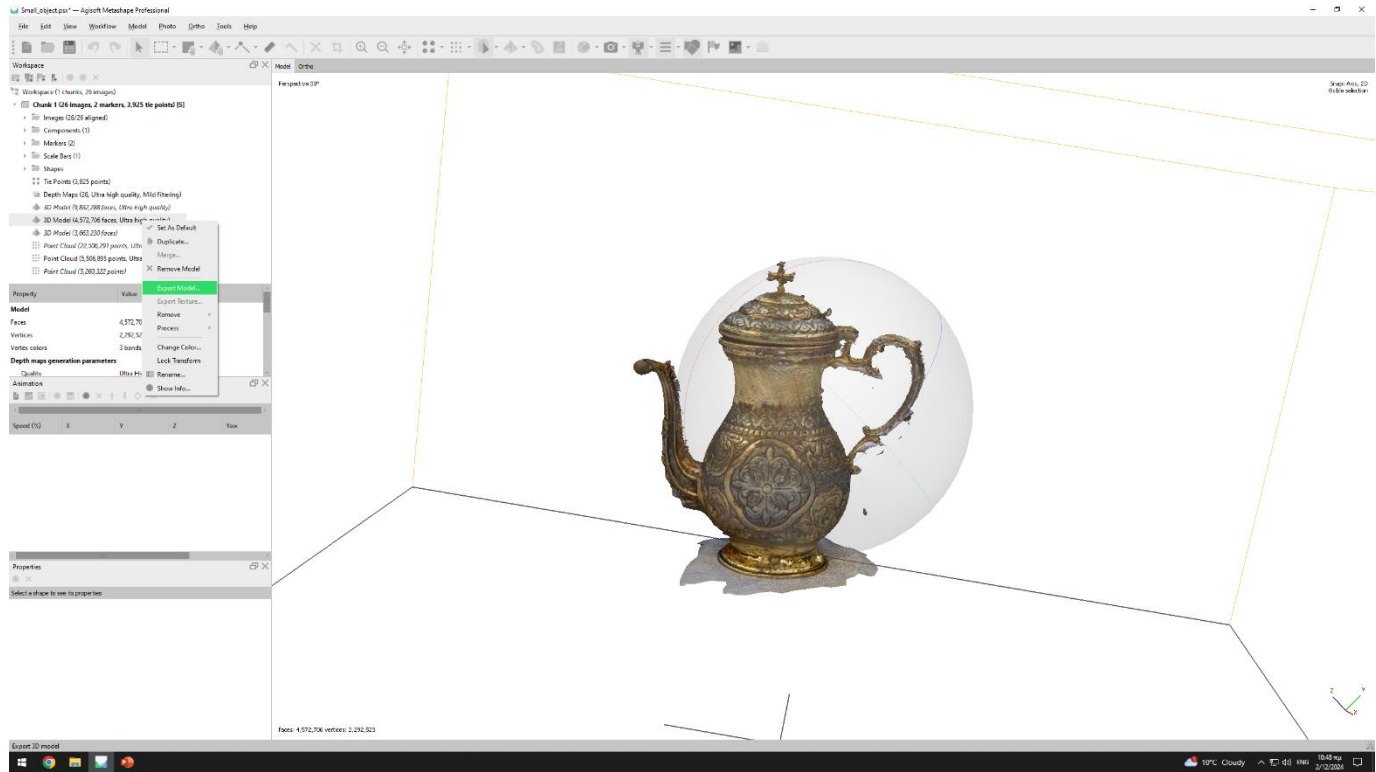
Measuring

12. Select the Ruler button -> with your mouse define on the model the distance you want to measure



Export model

12. File -> Export
-> Export Model



Export model

Exporting parameters

The screenshot displays the Agisoft MeshLab Professional interface. The main workspace shows a 3D model of a chalice. A dialog box titled "Export Model - Binary glTF" is open, with a red border. The dialog contains the following sections:

- Coordinate System:** Local Coordinates (X, Y, Z) with values 0, 0, 0.
- Export Parameters:**
 - Vertices colors
 - Vertices normals
 - Vertex colorface
 - Export texture
 - Convert to a flat file
 - Camera
 - Material
 - PBR
 - TGP
 - EXR
- Texture transfer:** None
- Other options:**
 - Binary encoding
 - Use LODM texture layout
 - Save alpha channel
 - Clip to bounding shapes
 - Write metadata and file
 - Use glTF Trp conversion

Buttons for "OK" and "Cancel" are at the bottom of the dialog.

At the bottom of the software window, a "Photos" panel shows a list of imported photos:

Label	Size	Aligned	Quality	Date & time	Make	Model	Focal length	F stop	ISO	Shutter	35mm focal	Sensor X res	Sensor Y res	Orientation (°)	Path	Enabled
DS0C0080	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DS0C0081	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DS0C0082	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F14.5	100	1/2000	28			0	C:\Users\Admin...	✓
DS0C0083	8000x4000	✓		2024-11-08 09:57...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DS0C0084	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15	100	1/2000	28			0	C:\Users\Admin...	✓
DS0C0085	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DS0C0086	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F14.5	100	1/1600	28			0	C:\Users\Admin...	✓
DS0C0087	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.2	100	1/800	28			0	C:\Users\Admin...	✓
DS0C0088	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F16.3	100	1/800	28			0	C:\Users\Admin...	✓
DS0C0089	8000x4000	✓		2024-11-08 09:58...	SONY	ILCE-7M2	28	F15.6	100	1/1600	28			0	C:\Users\Admin...	✓



Results: 3D Models





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December 9-11, 2024 Istanbul, Turkey

Thank you!