

IWCMS_2019_9841

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Newport
Isloe of Wight
Skeletons 1207 and 1210
04 October 2024**



Survey Data

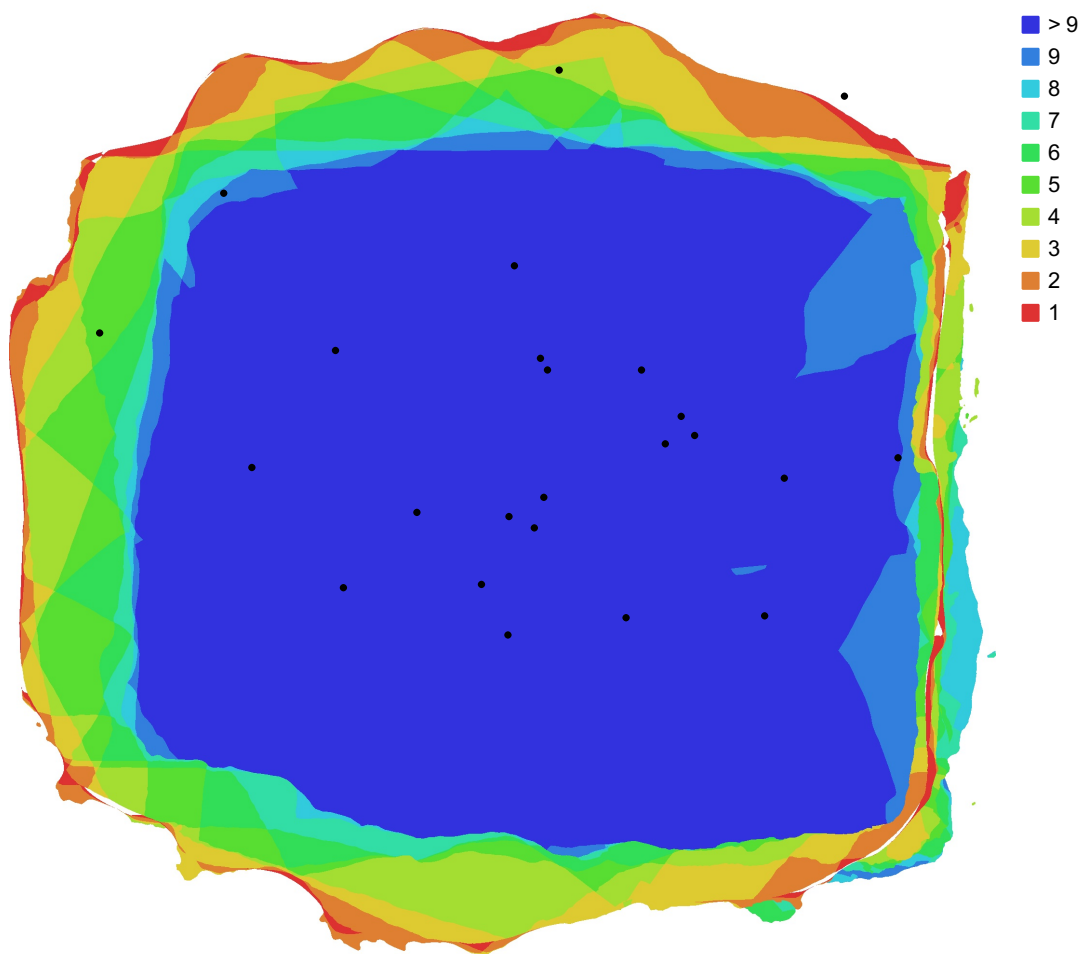


Fig. 1. Camera locations and image overlap.

Number of images: 24

Camera stations: 24

Tie points: 33,429

Projections: 93,988

Reprojection error: 1.1 pix

Camera Model	Resolution	Focal Length	Pixel Size	Precalibrated
RICOH WG-5 GPS (4.5mm)	4608 x 2592	4.5 mm	1.47 x 1.47 μ m	No

Table 1. Cameras.

Camera Calibration

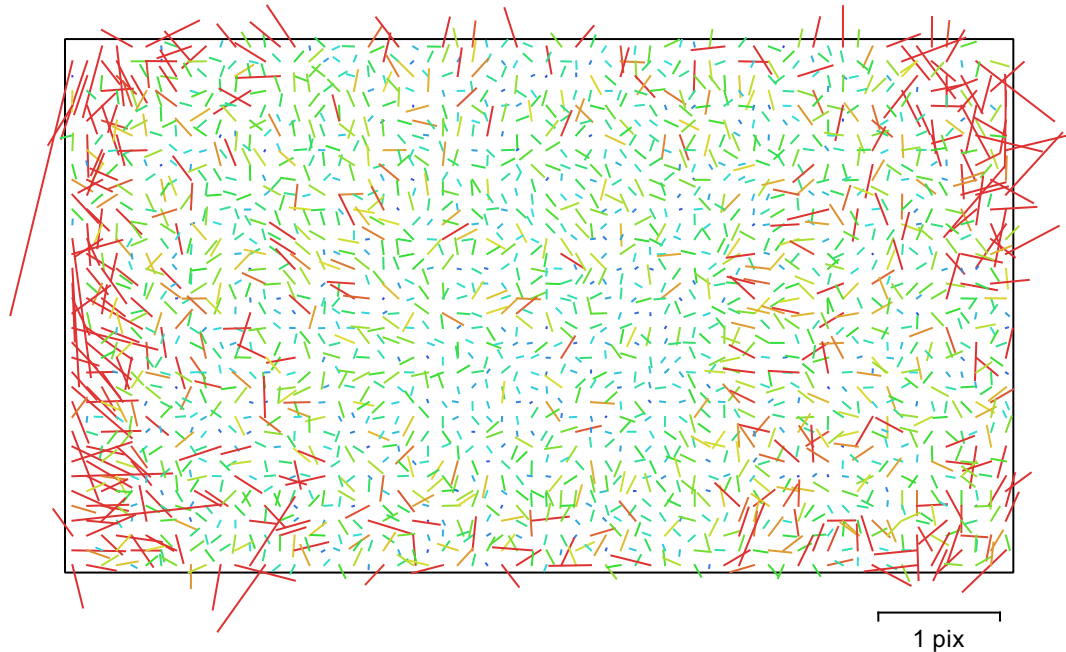


Fig. 2. Image residuals for RICOH WG-5 GPS (4.5mm).

RICOH WG-5 GPS (4.5mm)

24 images

Type	Resolution	Focal Length	Pixel Size
Frame	4608 x 2592	4.5 mm	1.47 x 1.47 μm

	Value	Error	F	B1	B2	K1	P1	P2
F	3484.31	0.31	1.00	-0.10	0.00	0.79	0.06	0.21
B1	-5.30326	0.044		1.00	0.02	-0.23	-0.14	0.53
B2	-0.458345	0.032			1.00	-0.02	0.01	0.04
K1	0.021231	7.8e-05				1.00	0.08	-0.06
P1	-0.00122032	5.9e-06					1.00	-0.06
P2	0.00458531	1.3e-05						1.00

Table 2. Calibration coefficients and correlation matrix.

Digital Elevation Model

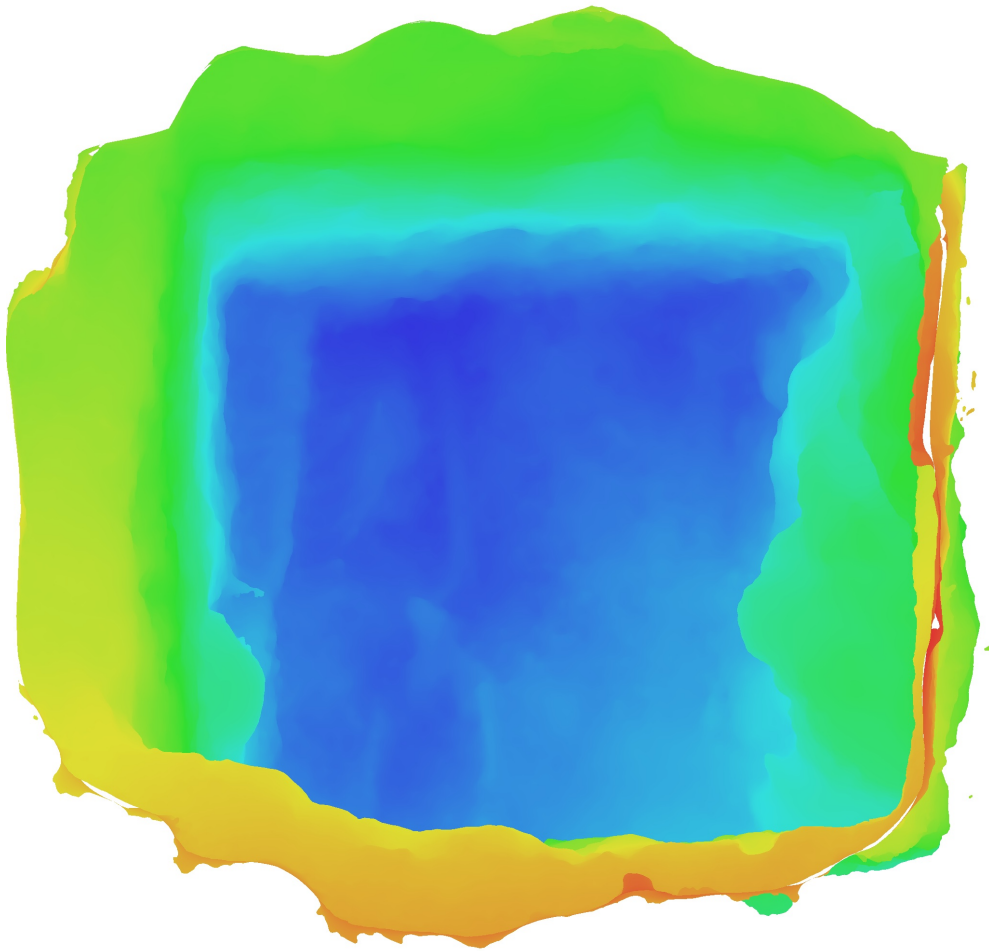


Fig. 3. Reconstructed digital elevation model.

Processing Parameters

General

Cameras	24
Aligned cameras	24
Coordinate system	WGS 84 (EPSG::4326)
Rotation angles	Yaw, Pitch, Roll

Point Cloud

Points	33,429 of 35,037
RMS reprojection error	0.114827 (1.09653 pix)
Max reprojection error	0.34554 (27.5298 pix)
Mean key point size	7.94554 pix
Point colors	3 bands, uint8
Key points	No
Average tie point multiplicity	2.92713

Alignment parameters

Accuracy	Medium
Generic preselection	Yes
Key point limit	60,000
Tie point limit	8,000
Adaptive camera model fitting	Yes
Matching time	10 seconds
Alignment time	5 seconds
Date created	2019:09:19 12:53:28
Software version	1.5.4.8885
File size	2.43 MB

Depth Maps

Count	24
Depth maps generation parameters	
Quality	Medium
Filtering mode	Aggressive
Processing time	54 seconds
Date created	2019:09:19 12:54:46
Software version	1.5.4.8885
File size	24.26 MB

Dense Point Cloud

Points	2,877,909
Point colors	3 bands, uint8
Depth maps generation parameters	
Quality	Medium
Filtering mode	Aggressive
Processing time	54 seconds
Dense cloud generation parameters	
Processing time	37 seconds
Date created	2019:09:19 12:55:26
Software version	1.5.4.8885
File size	37.63 MB

Model

Faces	191,860
Vertices	96,525
Vertex colors	3 bands, uint8
Texture	8,096 x 8,096, 4 bands, uint8
Depth maps generation parameters	

Quality	Medium
Filtering mode	Aggressive
Processing time	54 seconds
Reconstruction parameters	
Surface type	Arbitrary
Source data	Dense cloud
Interpolation	Enabled
Strict volumetric masks	No
Processing time	2 minutes 24 seconds
Texturing parameters	
Mapping mode	Adaptive orthophoto
Blending mode	Mosaic
Texture size	8,096
Enable hole filling	Yes
Enable ghosting filter	No
UV mapping time	5 seconds
Blending time	55 seconds
Date created	2019:09:19 12:55:54
Software version	1.5.4.8885
File size	82.13 MB
Orthomosaic	
Size	4,700 x 4,541
Coordinate system	WGS 84 (EPSG::4978)
Colors	3 bands, uint8
Reconstruction parameters	
Blending mode	Mosaic
Surface	Mesh
Enable hole filling	Yes
Processing time	29 seconds
Date created	2019:09:19 13:03:24
Software version	1.5.4.8885
File size	210.01 MB
System	
Software name	Agisoft Metashape Professional
Software version	1.7.3 build 12473
OS	Windows 64 bit
RAM	63.95 GB
CPU	AMD Ryzen 9 5900X 12-Core Processor
GPU(s)	NVIDIA GeForce RTX 3070