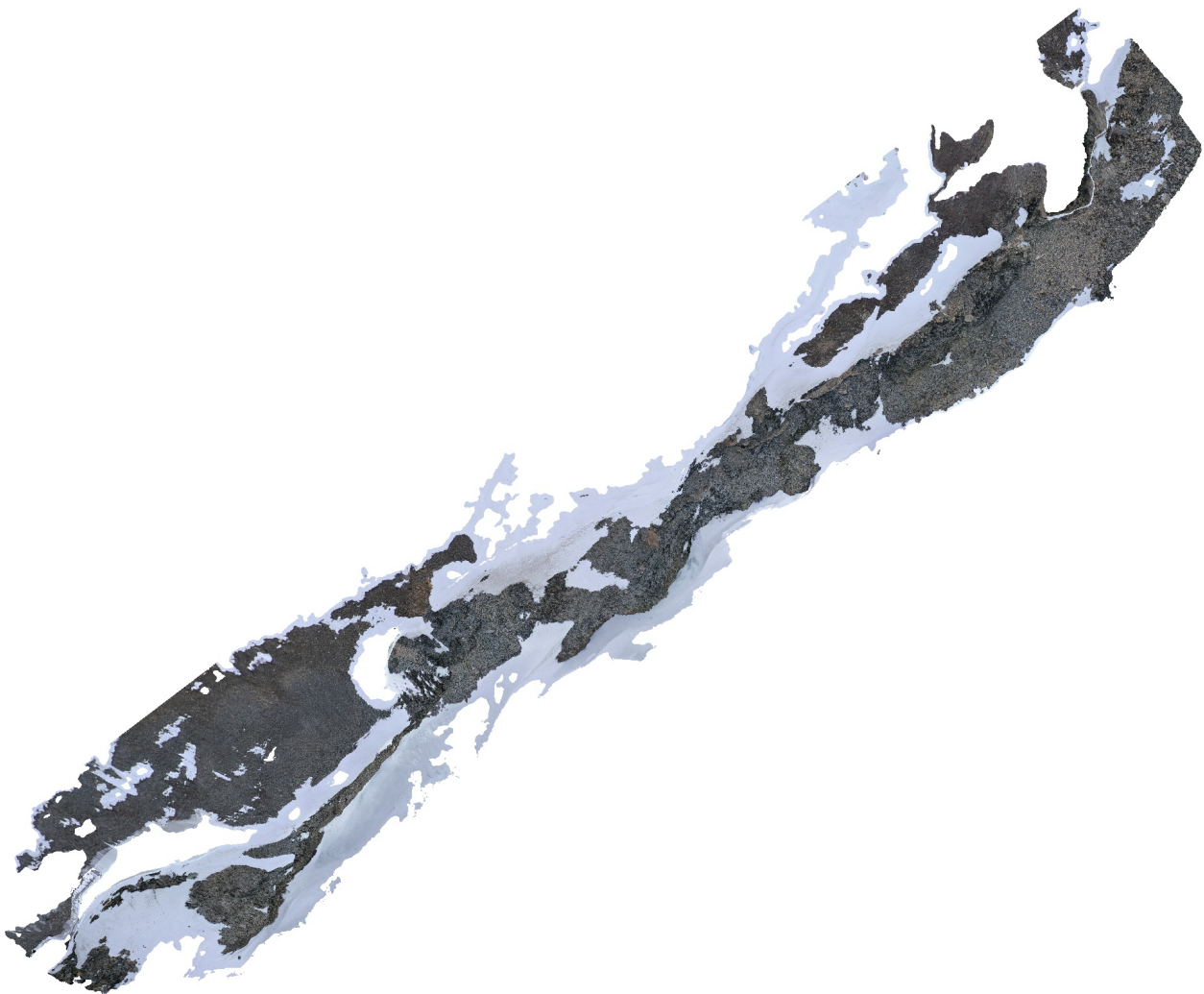


Ytterdalselva

Dense Cloud Confidence 2-255

Filter component size 99%

07 March 2022



Survey Data

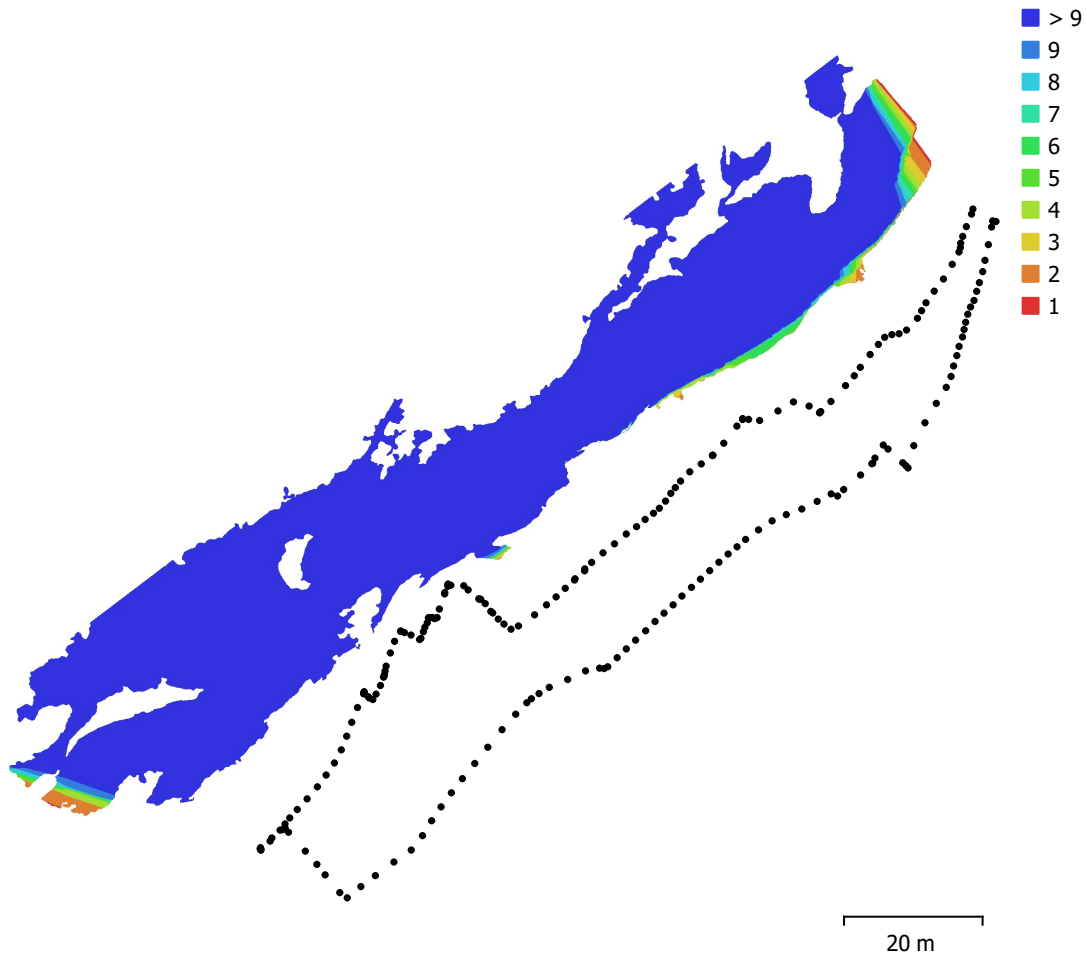


Fig. 1. Camera locations and image overlap.

| | | | |
|--------------------|-------------------------|---------------------|----------|
| Number of images: | 212 | Camera stations: | 212 |
| Flying altitude: | 22.2 m | Tie points: | 95,164 |
| Ground resolution: | 4.69 mm/pix | Projections: | 684,583 |
| Coverage area: | 2.97e+03 m ² | Reprojection error: | 0.69 pix |

| Camera Model | Resolution | Focal Length | Pixel Size | Precalibrated |
|--------------------|-------------|--------------|---------------------|---------------|
| Test_Pro (10.26mm) | 5472 x 3648 | 10.26 mm | 2.41 x 2.41 μ m | No |

Table 1. Cameras.

Camera Calibration

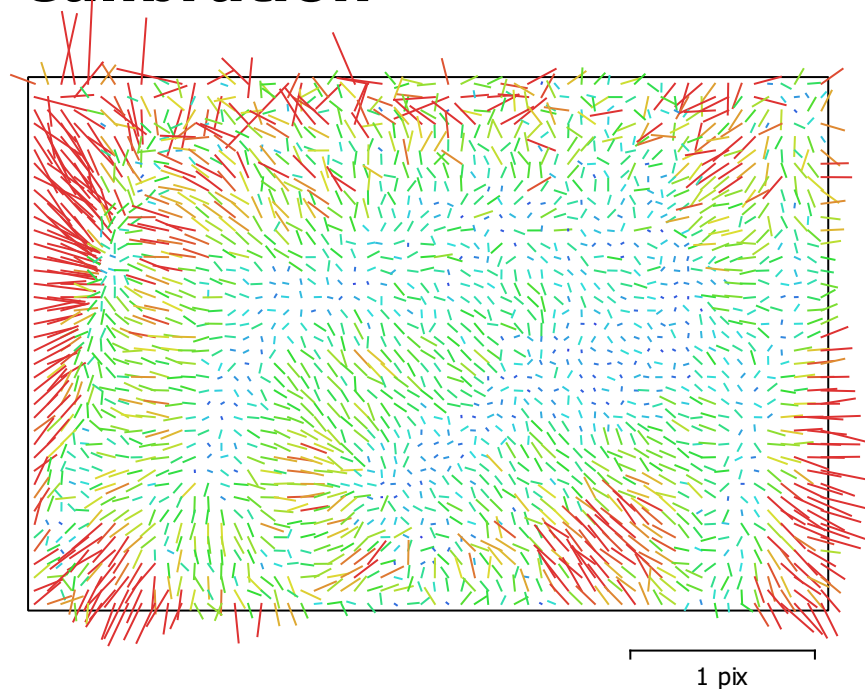


Fig. 2. Image residuals for Test_Pro (10.26mm).

Test_Pro (10.26mm)

212 images

| | | | |
|--------------|--------------------|-----------------|---|
| Type | Resolution | Focal Length | Pixel Size |
| Frame | 5472 x 3648 | 10.26 mm | 2.41 x 2.41 μm |

| | Value | Error | F | Cx | Cy | B1 | B2 | K1 | K2 | K3 | P1 | P2 |
|-----------|--------------------|---------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| F | 4356.92 | 0.11 | 1.00 | 0.10 | 0.12 | -0.77 | 0.01 | -0.05 | 0.06 | -0.05 | 0.03 | -0.03 |
| Cx | 39.0246 | 0.14 | | 1.00 | 0.06 | -0.15 | -0.16 | -0.02 | -0.01 | 0.01 | 0.93 | -0.03 |
| Cy | -37.4849 | 0.14 | | | 1.00 | -0.50 | 0.09 | -0.08 | 0.01 | -0.01 | -0.05 | 0.60 |
| B1 | -3.31435 | 0.14 | | | | 1.00 | -0.12 | 0.06 | 0.01 | -0.02 | -0.02 | -0.19 |
| B2 | 28.0667 | 0.099 | | | | | 1.00 | -0.04 | 0.01 | -0.01 | -0.26 | 0.09 |
| K1 | 0.00714184 | 3.4e-05 | | | | | | 1.00 | -0.93 | 0.87 | -0.00 | -0.16 |
| K2 | 0.035936 | 0.00014 | | | | | | | 1.00 | -0.98 | -0.00 | 0.02 |
| K3 | -0.0365478 | 0.00019 | | | | | | | | 1.00 | 0.01 | -0.02 |
| P1 | 0.00138402 | 1e-05 | | | | | | | | | 1.00 | -0.08 |
| P2 | -0.00383036 | 4.8e-06 | | | | | | | | | | 1.00 |

Table 2. Calibration coefficients and correlation matrix.

Camera Locations

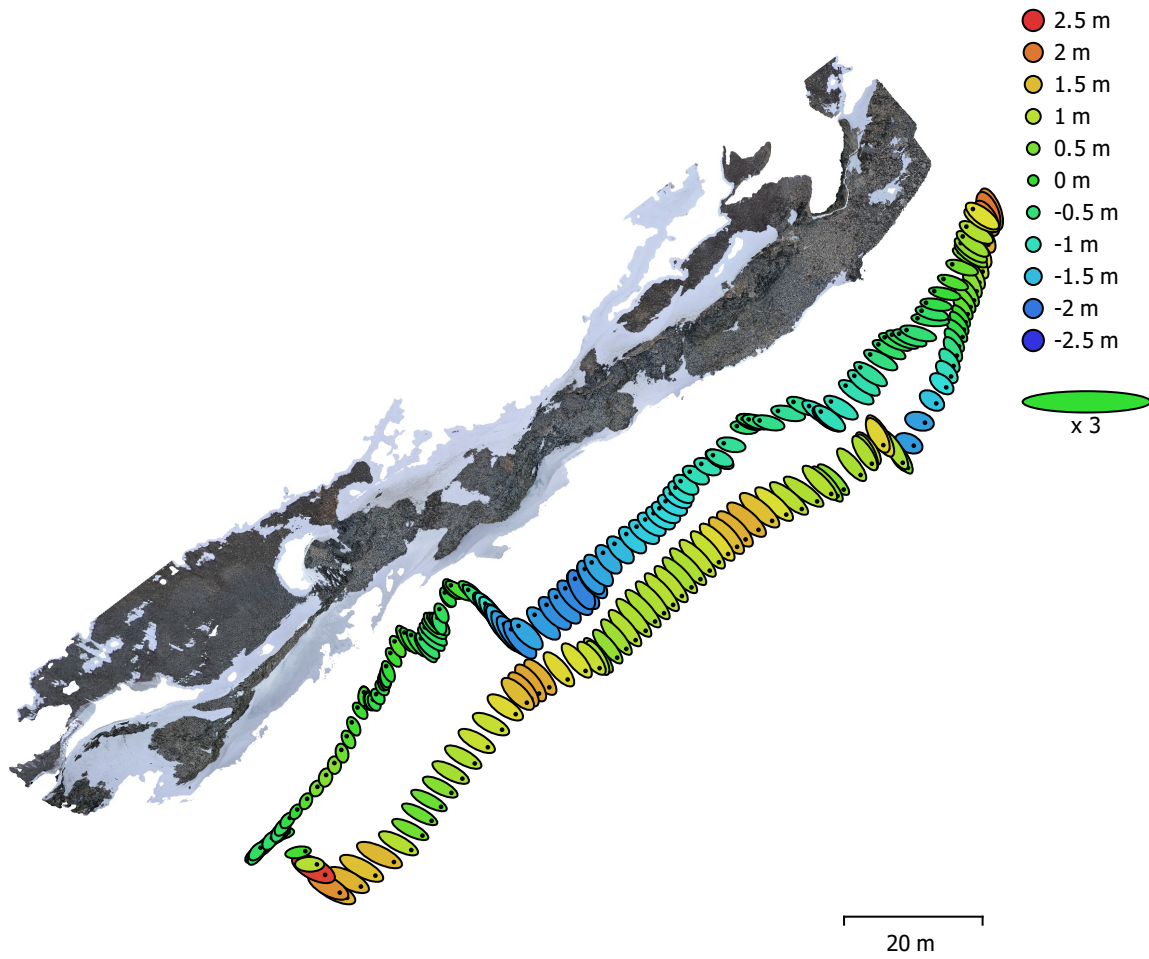


Fig. 3. Camera locations and error estimates.

Z error is represented by ellipse color. X,Y errors are represented by ellipse shape.

Estimated camera locations are marked with a black dot.

| X error (m) | Y error (m) | Z error (m) | XY error (m) | Total error (m) |
|-------------|-------------|-------------|--------------|-----------------|
| 0.763972 | 0.702372 | 0.977714 | 1.03778 | 1.4258 |

Table 3. Average camera location error.

X - Longitude, Y - Latitude, Z - Altitude.

Digital Elevation Model

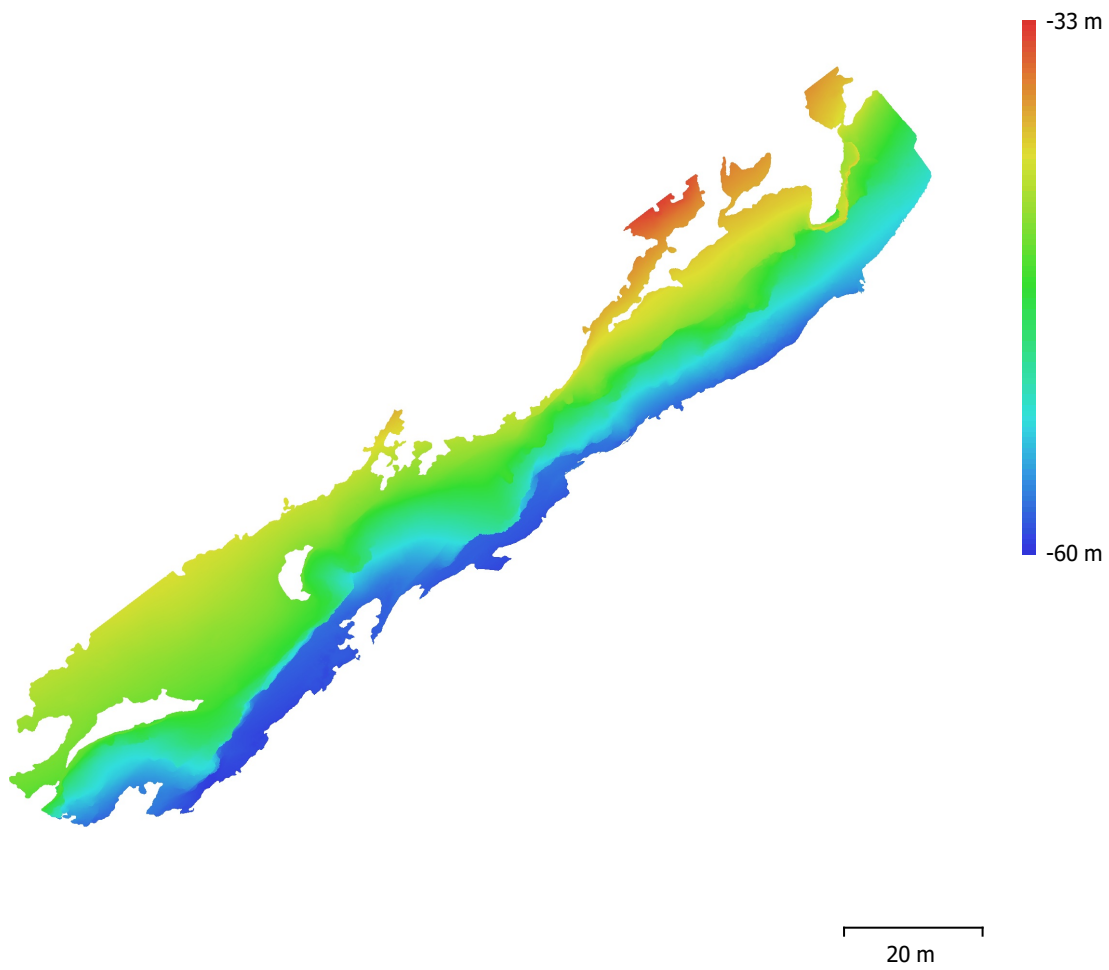


Fig. 4. Reconstructed digital elevation model.

Resolution: 9.38 mm/pix
Point density: 1.14 points/cm²

Processing Parameters

General

| | |
|-------------------|---------------------|
| Cameras | 212 |
| Aligned cameras | 212 |
| Coordinate system | WGS 84 (EPSG::4326) |
| Rotation angles | Yaw, Pitch, Roll |

Point Cloud

| | |
|--------------------------------|-------------------------|
| Points | 95,164 of 117,444 |
| RMS reprojection error | 0.315618 (0.689985 pix) |
| Max reprojection error | 1.15427 (29.3908 pix) |
| Mean key point size | 1.99802 pix |
| Point colors | 3 bands, uint8 |
| Key points | No |
| Average tie point multiplicity | 8.13789 |

Alignment parameters

| | |
|-------------------------------|-----------------------|
| Accuracy | Highest |
| Generic preselection | Yes |
| Reference preselection | Source |
| Key point limit | 40,000 |
| Tie point limit | 4,000 |
| Exclude stationary tie points | Yes |
| Guided image matching | No |
| Adaptive camera model fitting | Yes |
| Matching time | 23 minutes 16 seconds |
| Matching memory usage | 492.74 MB |
| Alignment time | 1 hours 5 minutes |
| Alignment memory usage | 173.59 MB |

Optimization parameters

| | |
|-------------------------------|--------------------------|
| Parameters | f, cx, cy, k1-k3, p1, p2 |
| Adaptive camera model fitting | Yes |
| Optimization time | 4 seconds |
| Software version | 1.7.3.12473 |
| File size | 17.13 MB |

Depth Maps

| | |
|-------|-----|
| Count | 212 |
|-------|-----|

Depth maps generation parameters

| | |
|------------------|----------------------|
| Quality | High |
| Filtering mode | Mild |
| Max neighbors | 100 |
| Processing time | 54 minutes 7 seconds |
| Memory usage | 6.67 GB |
| Software version | 1.7.3.12473 |
| File size | 1.40 GB |

Dense Point Cloud

| | |
|--------------|----------------|
| Points | 57,920,398 |
| Point colors | 3 bands, uint8 |

Depth maps generation parameters

| | |
|-----------------|----------------------|
| Quality | High |
| Filtering mode | Mild |
| Max neighbors | 100 |
| Processing time | 54 minutes 7 seconds |

| | |
|--|------------------------------------|
| Memory usage | 6.67 GB |
| Dense cloud generation parameters | |
| Processing time | 3 hours 0 minutes |
| Memory usage | 9.75 GB |
| Software version | 1.7.3.12473 |
| File size | 956.84 MB |
| Model | |
| Faces | 3,781,317 |
| Vertices | 1,903,734 |
| Vertex colors | 3 bands, uint8 |
| Texture | 4,096 x 4,096 x 10, 4 bands, uint8 |
| Depth maps generation parameters | |
| Quality | High |
| Filtering mode | Mild |
| Max neighbors | 100 |
| Processing time | 54 minutes 7 seconds |
| Memory usage | 6.67 GB |
| Reconstruction parameters | |
| Surface type | Arbitrary |
| Source data | Dense cloud |
| Interpolation | Enabled |
| Strict volumetric masks | No |
| Processing time | 21 minutes 37 seconds |
| Memory usage | 31.42 GB |
| Texturing parameters | |
| Mapping mode | Generic |
| Blending mode | Mosaic |
| Texture size | 4,096 |
| Enable hole filling | Yes |
| Enable ghosting filter | Yes |
| UV mapping time | 4 minutes 51 seconds |
| UV mapping memory usage | 3.40 GB |
| Blending time | 9 minutes 41 seconds |
| Blending memory usage | 5.84 GB |
| Software version | 1.7.2.12040 |
| File size | 379.29 MB |
| Tiled Model | |
| Texture | 3 bands, uint8 |
| Depth maps generation parameters | |
| Quality | High |
| Filtering mode | Mild |
| Max neighbors | 100 |
| Processing time | 54 minutes 7 seconds |
| Memory usage | 6.67 GB |
| Reconstruction parameters | |
| Source data | Dense cloud |
| Tile size | 256 |
| Face count | Medium |
| Enable ghosting filter | No |
| Processing time | 1 hours 18 minutes |
| Memory usage | 3.58 GB |
| Software version | 1.7.2.12040 |
| File size | 349.70 MB |
| System | |
| Software name | Agisoft Metashape Professional |
| Software version | 1.7.2 build 12040 |

OS
RAM
CPU
GPU(s)

Windows 64 bit
127.78 GB
Intel(R) Core(TM) i9-9900K CPU @ 3.60GHz
GeForce RTX 2080