



Data Collection & Product Report for 2022 Seed Project: Detecting Changes in Hillslope Geomorphology Due to Thawing Permafrost in Interior Alaska, USA

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Data Collection Summary:

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|-------------------------------|---|
| Collection Dates, Flights: | 1 flight on July 27, 2023 (DOY 208) |
| Aircraft, Equipment: | Piper PA-31 Navajo (C-GJMT), Leica TerrainMapper-2 (92528) |
| Nominal Flight Parameters: | Flying Height: 1550–1900 m AGL, Speed: 160 kt, Overlap: 20% |
| Nominal Equipment Parameters: | Pulse Rate: 937.7 kHz, Scan Rate: 130 Hz, FOV: 40° |
| Collected Area: | 71.9 km ² |

GNSS Reference Station Summary:

| Station Name | Operating Agency | Coordinates (ITRF2014 Epoch 2023.5685 / Ellipsoid) |
|--------------|------------------|--|
| CLGO | UNAVCO | 64°52'25.57470" N, 147°51'37.76407" W, 196.133 m |

Data Processing Summary:

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| Data Adjustments: | HxMap line-by-line Lidar Matching, no project elevation shift |
| Ground Classification: | Two iterations of moderate ground determination, manual classification of misclassified ground |
| Elevation Model Generation: | Elevation values calculated from Kriging |

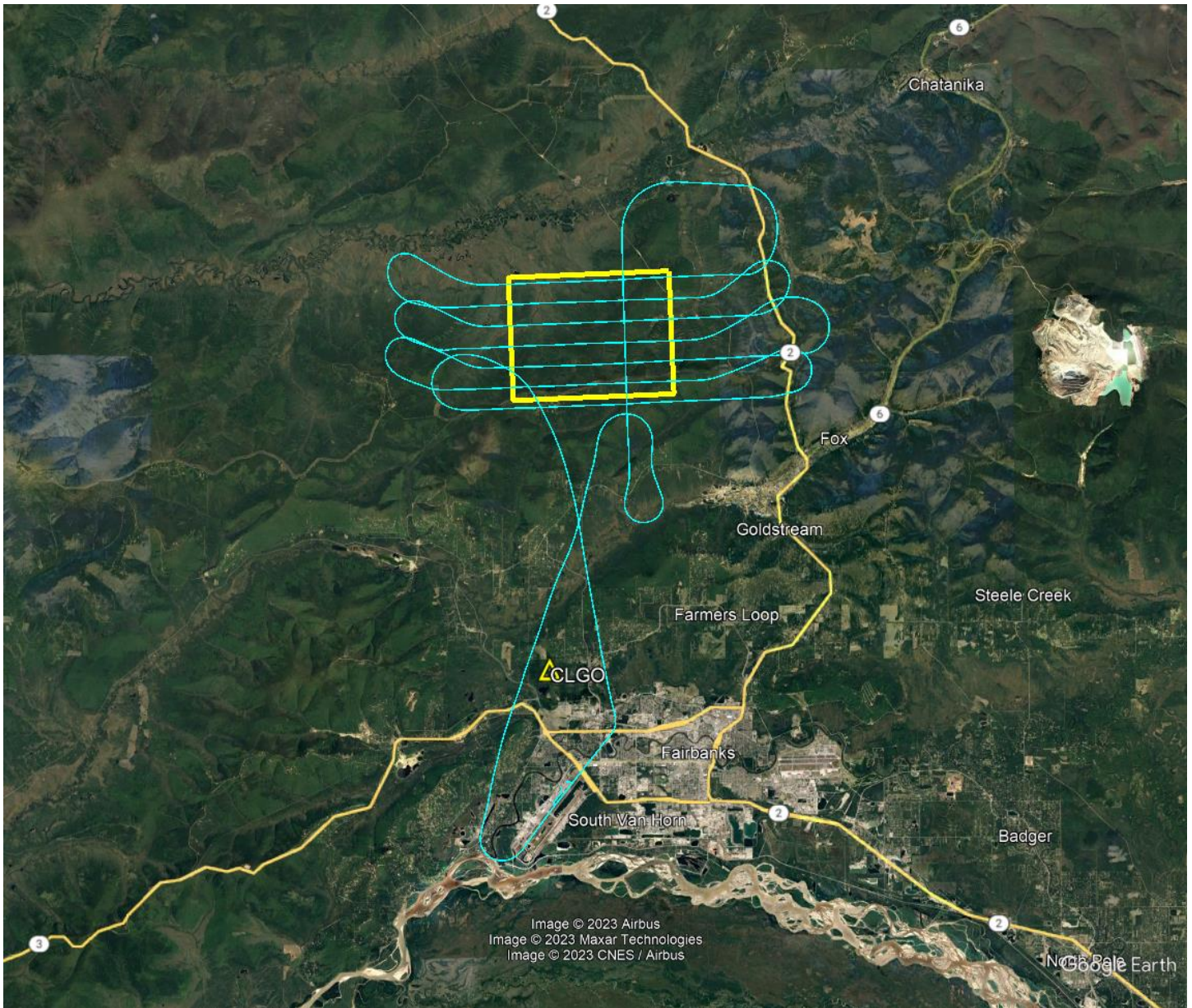
Data Accuracy Summary

| | |
|------------------------|---------------------------------------|
| Strip-to-Strip Average | 0.024 m |
| GCP Residual RMS | 0.078 m (in the 2023 Alaska campaign) |

Data Product Summary:

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|--------------------------------|--|
| Horizontal / Vertical Datum: | WGS 84 (ITRF2014) epoch 2023.5685 / ellipsoid |
| Projection / Units: | UTM Zone 6N / meters |
| Point Cloud Tiles: | 1000-m × 1000-m tiles in LAS format (Version 1.4) with non-ground (1), ground (2), and outlier (7) returns |
| Bare-Earth Elevation Model: | GeoTIFF @ 1-m resolution from classified ground |
| First-Surface Elevation Model: | GeoTIFF @ 1-m resolution with canopy and buildings included |

Area of Interest:



Location of survey polygon, aircraft trajectory, and GNSS reference station

The requested survey area consisted of one polygon located north of Fairbanks, AK. The polygon enclosed approximately 39.7 km² (15.3 mi²).