

Otago - Queenstown LiDAR 1m DEM (2016)

Title

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Creator

LINZ - Land Information New Zealand

Date

2016-03-02

Description

This layer contains the DEM for LiDAR data from the Queenstown Area of the Otago District captured in 2016. - The DSM is available as layer [Otago - Queenstown LiDAR 1m DSM (2016)](<https://data.linz.govt.nz/layer/99119-otago-queenstown-lidar-1m-dsm-2016/>). - The index tiles are available as layer [Otago - Queenstown LiDAR Index Tiles (2016)](<https://data.linz.govt.nz/layer/99121-otago-queenstown-lidar-index-tiles-2016/>). - The LAS point cloud and vendor project reports are available from [OpenTopography](<http://opentopo.sdsc.edu/datasets>). Lidar was captured for Otago Regional Council by Aerial Surveys in March and April 2016. The datasets were generated by Aerial Surveys and their subcontractors. Data management and distribution is by Land Information New Zealand. Data comprises: - DEM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - DSM: tif or asc tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout - Point cloud: las tiles in NZTM2000 projection, tiled into a 1:1,000 tile layout Pulse density is 2 pulses/square metre. Vertical accuracy specification is +/- 0.044m (95%). Vertical datum is NZVD2016.

Source

Data Acquisition: Airborne Laser Scanner (ALS) data was acquired from a fixed wing aircraft on: 2nd, 4th, 5th, 6th, 18th, 19th March and 21st April 2016 using Aerial Surveys Optech Orion H300 LiDAR system. Survey Specifications: • Scanner: Optech Orion H300 • Flying Height: 2100m AMGL • Scan Angle: ±22 degrees • Scan Frequency: 48Hz • Pulse Rate: 125kHz • Swath Overlap: 30% • Points Per M2: 2.06 Data processing: The LiDAR sensor positioning and orientation (POS) was determined using the collected GPS/IMU datasets and Applanix POSpac software. Benchmark 1: VZQN (Queenstown Glenda) OWNER: Geosystems Base Station Position: -45 00 34.77762 S 168 45 11.54995 E 373.521 Ell Ht Antenna Height: 0.085 Phase Center Benchmark 2: GSQU OWNER: Global Base Station Position: -44 58 31.16085 S 168 45 52.01762 E 384.4 Antenna Height: 0.000 Phase Centre The POS data was combined with the LiDAR range files and used to generate LIDAR point clouds in NZTM and ellipsoidal heights. This process was undertaken using Optech LMS LiDAR processing software. The data was checked for completeness of coverage. The relative fit of data in the overlap between strips was also checked. The height accuracy of the ground classified LiDAR points was checked using open land-cover survey check site data collected by Sounds Surveying Ltd. This was done by calculating height differences statistics between a TIN of the LiDAR ground points and the checkpoints. The standard deviation statistic is 0.022m; a RMS of 0.023m and the average difference is 0.006m. LiDAR is relative to the control check points. The positional accuracy of the LiDAR data has been checked by overlaying Sounds Surveying Ltd surveyed data over the LiDAR data displayed coded by intensity. The data was found to fit well in position. The point cloud data was then classified with TerraSolid LiDAR processing software into ground and above ground returns using automated routines tailored

to the project landcover and terrain. All product deliverables are supplied in terms of NZTM map projection. For the classification scheme of the point cloud please refer to the original survey report. Re-processing: In 2018 the data was reprocessed by Aerial Surveys for LINZ relative to the NZVD2016 vertical datum, and supplied as 1:1000 nominal scale (2500 720m high x 480m wide subtiles per full NZ Topo50 sheet). Lakes and large rivers were hydroflattened in the Bare Earth Digital Elevation Model. The deliverables to LINZ were: 1m gridded bare earth digital elevation model (DEM) 1m gridded digital surface model (DSM) Classified point cloud Reprocessed Point Cloud Data was reclassified by LINZ, points classified as 3 - Above Ground were reclassified to 1 - Unassigned. Classification of the Point Cloud available on Open Topography are as follows; 1 - Unassigned 2 - Ground

Coverage

-45.1407984284 168.605137516 -44.9185473841 168.934228799

Identifier

<https://data.linz.govt.nz/layer/99115-otago-queenstown-lidar-1m-dem-2016/>

Type

grid

Language

eng

Subject

New Zealand

Subject

elevation