

LiDAR Project Summary



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Project Information

Project Name:	Toronto
Airborne Project Number:	15857
Client:	University of Waterloo
Project Location:	Toronto, Ontario, Canada
Project Size:	26.7 km ²

Acquisition Projects

Project Number	Project Name	Vintage
1453	GTA 2015	April 2015

Acquisition Parameters

Date (MM/DD/YY)	Mission	Flying Height (m)	Flying Speed (knots)	Pulse Rate Rep (kHz)	Scan Freq (Hz)	Scan Angle (degree)	Side Lap %	Point Density (pts/m ²)	LiDAR System
04/06/15	7915096a	1300	160	400	52	50	50	10.0	Leica ALS70

Geodetic Control

Horizontal Datum:	Nad83 CSRS	Vertical Datum:	CGVD28
		Undulation model:	HT2.0
Note: We established a local geodetic network fixed to the following control:			
Station ID	Lat	Long	Ellp Height (m)
653196	43 35 30.99772	-79 36 11.54776	92.610

Calibration Methodology

Airborne Imaging performs a complete calibration on every LiDAR acquisition flight. The data is first produced with its predetermined boresight values and then the calibration refined by applying corrections to the attitude of the aircraft (roll, pitch and heading) and fluctuations if necessary. To statistically quantify the accuracy, we compare the LiDAR elevations with independently surveyed ground points. A GPS mounted truck collects data while driving on an open road. The kinematic positions on the road are post-processed from a nearby base station to provide ground truth points.

Accuracy

Horizontal Accuracy, 95% or 2σ:	30 cm
Fundamental Vertical Accuracy (on flat hard surfaces), 95% or 2σ:	10 cm

Deliverables

Projection: UTM 17 NAD83 CSRS

Deliverables Formats

1m Grids (XYZ ASCII), Bare Earth and Full Feature

Hillshade Images (Geotiffs), Bare Earth and Full Feature

Point Cloud (LAS v1.2)

50cm Contours (shp)

625_4839	626_4839	627_4839	628_4839	629_4839	630_4839	631_4839	632_4839	633_4839	634_4839
625_4838	626_4838	627_4838	628_4838	629_4838	630_4838	631_4838	632_4838	633_4838	634_4838
625_4837	626_4837	627_4837	628_4837	629_4837	630_4837	631_4837	632_4837	633_4837	634_4837
625_4836	626_4836	627_4836	628_4836	629_4836	630_4836	631_4836	632_4836	633_4836	634_4836
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625_4828	626_4828	627_4828	628_4828	629_4828	630_4828	631_4828	632_4828	633_4828	634_4828

15857 - Toronto - University of Waterloo



The Red outline represents the extent of the data delivered.
 The data is divided into 1km x 1km tiles following the
 UTM Grid System, rounded to the nearest 1,000m with zeros cut-off.
 Tiles are displayed by the bottom left corner of their
 UTM coordinates as Easting_Northing.
 Example 646_5397 for 646,000m E, 5,397,000m N.



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