1.8 Report on Vertical Accuracy (Tiled Data)

The USGS LiDAR Base Specification Version 1.0 states that: "Vertical Accuracy of the LiDAR data will be assessed and reported in accordance with the guidelines developed by the NDEP and subsequently adopted by the ASPRS.

(1) The minimum vertical accuracy requirement for the unclassified lidar point cloud, using the NDEP/ASPRS methodology, is listed below:. See:
   http://www.ndep.gov/NDEP_Elevation_Guidelines_Ver1_10May2004.pdf

(2) Fundamental Vertical Accuracy (FVA)<= 24.5 centimeters (cm) Accuracyz (ACCz), 95 percent (12.5 cm Root Mean Square Error (RMSE)z).

(3) Accuracy for the LiDAR point cloud data is to be reported independently from accuracies of derivative products (i.e., DEMs). Point cloud data accuracy is to be tested against a TIN constructed from bare-earth LiDAR points.

Point cloud data accuracy is to be tested against a Triangulated Irregular Network (TIN) constructed from lidar points in clear and open areas. A clear and open area can be characterized with respect to topographic and ground cover variation such that a minimum of 5 times the NPS exists with less than 1/3 of the RMSEz deviation from a low-slope plane. Slopes that exceed 10 percent should be avoided. Ground that has been plowed or otherwise disturbed is not acceptable. All tested locations should be photographed showing the position of the tripod and the surrounding area ground condition."

The purpose of this section is to report on the fundamental vertical accuracy of the LiDAR data measured against surveyed ground check points.

This reports only the Fundamental Vertical Accuracy (FVA)

E:\Pope_Hardin\QAQC2\1_8\Report_VerticalAccuracy.csv
Units: US Survey Feet (/Meter)

Requirement for Vertical Accuracy at the 95 confidence level: 0.8

Classified Data

Control Points		20
Points with Coverage		20
Points With Required Accuracy		20
Percent of Points With Required Accuracy		100.00%
Average Z Error		0.09/0.03
Maximum Z Error		0.37/0.11
Median Z Error		0.11/0.03
Minimum Z Error		-0.31/-0.09
NSSDA Vertical Accuracy	at the 95 confidence level	0.34/0.10 PASS
Standard Deviation (sigma) of Z for Sample		0.15/0.05
RMSE of Z for Sample		0.17/0.05 PASS
FGDC/NSSDA/FEMA Contour Interval		0.60/0.18
ASPRS Contour Interval		0.60/0.18
NMAS Contour Interval		0.60/0.18

1.8 Report on Vertical Accuracy (Tiled Data) - continued

ID	X	Y	Z	Coverage	Z From LiDAR	Z Error
101	897893.81	329333.50	801.28	True	801.38	0.11
102	899302.79	314681.59	719.12	True	719.23	0.11
103	933958.16	339083.48	721.75	True	721.73	-0.02
104	956383.61	318220.01	510.48	True	510.54	0.07
105	998529.42	336540.47	740.35	True	740.40	0.05
106	1009796.65	331635.33	606.10	True	606.06	-0.04
107	1024050.27	331451.84	388.66	True	388.74	0.08
108	1036714.94	292535.72	476.65	True	476.58	-0.07
109	1013616.29	288291.69	348.36	True	348.57	0.22
110	992991.31	284241.81	398.42	True	398.62	0.20
111	980182.65	274608.28	339.28	True	339.41	0.12
112	967449.82	281986.62	397.54	True	397.90	0.37
113	941432.56	256917.11	339.93	True	340.15	0.22
114	905921.72	279231.17	616.70	True	617.01	0.31
115	902871.12	259823.34	397.23	True	397.39	0.15
116	892565.88	236280.84	465.70	True	465.80	0.11
117	887193.44	261003.69	499.60	True	499.53	-0.07
118	924648.03	216206.44	527.67	True	527.73	0.05
119	934490.59	214366.39	333.97	True	333.66	-0.31
120	950881.49	166035.99	345.33	True	345.49	0.16

1.8 Report on Vertical Accuracy (Tiled Data)

The purpose of this section is to show a frequency distribution chart of the the fundamental vertical accuracy of the LiDAR data measured against surveyed ground check points.

Data Source - E:\Pope_Hardin\Classified_LAS