Report of Horizontal and Vertical Accuracy Testing
Pictometry Airborne Oblique Imagery
Los Angeles Region Imagery Acquisition Consortium 4 (LAR-IAC4)

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References: a. *ASPRS Positional Accuracy Standards for Digital Geospatial Data*, V1.0, Nov, 2014

b. Quality Plan for Los Angeles Region Imagery Acquisition Consortium4 (LAR-IAC4), Version 4.1, June, 2014

Consistent with the National Standard for Spatial Data Accuracy (1998), Reference a implements a statistical and testing methodology for estimating the positional accuracy of points on digital images with respect to georeferenced ground positions of higher accuracy, reported at the 95% confidence level.

LAR-IAC4's digital oblique images, produced by Pictometry, were tested in accordance with Acceptance Criteria listed in Reference b. The "georeferenced ground positions of higher accuracy," referred to generically as "QA/QC checkpoints," were provided by LAR-IAC with additional checkpoints surveyed by Dewberry in 2014. A total of 217 checkpoints were used in the accuracy assessment. Of the total number of checkpoints 149 were collected by Dewberry in 2014 and 68 were existing checkpoints from previous LAR-IAC programs. The final breakdown of points used for each view is listed in the table below. Each QA/QC checkpoint is a ground point feature that is well-defined and photo-identifiable on the oblique images from which California State Plane Zone V coordinates were measured by Dewberry. Dewberry determined the Δx and Δy differences in Eastings (x-coordinates) and Northings (y-coordinates) between the ground-surveyed QA/QC checkpoints and their coordinates extracted from the oblique images. Additionally Dewberry reviewed the errors in elevations, Δz. For each checkpoint Dewberry averaged the errors in the Eastings, Northings, and Elevations for all views that were visible; for many, the average resulted from four views, but some points were obscured by buildings trees, cars, etc., so the average resulted from the mean of three, two, and (in a few cases) only one view. Dewberry then computed the root-mean-square-error (RMSE) statistics, including $RMSE_x$, $RMSE_y$, and $RMSE_r$. $RMSE_r$ is the radial statistic which equals the square root of $[RMSE_x^2 + RMSE_y^2]$. The NSSDA absolute accuracy statistic ($Accuracy_r$) is computed as $RMSE_r$ x 1.7308. Finally, $Accuracy_z$ is computed as $RMSE_z$ x 1.9600 in order to report the tested vertical accuracy at the 95% confidence level as required by Reference a.

Pictometry Airborne Oblique Imagery	Accuracy Statistics	North View (Feet)	South View (Feet)	East View (Feet)	West View (Feet)	Average of All Views (Feet)
Number of Points Visible on 217 Usable Targets		201	207	205	201	204
Horizontal Accuracy	$RMSE_x$	1.12	1.35	1.72	2.2	1.59
	$RMSE_y$	1.41	1.31	1.42	1.59	1.43
	$RMSE_r$	1.80	1.88	2.23	2.71	2.14
	$Accuracy_r$	3.12	3.26	3.86	4.70	3.70
Vertical Accuracy	$RMSE_z$	.53	.90	.73	.80	0.74
	$Accuracy_z$	1.04	1.76	1.43	1.57	1.45

The data set was tested to meet ASPRS Positional Accuracy Standards for Digital Geospatial Data (2014). Actual positional accuracy of the oblique images was found to be as follows:

Accuracy of clearly defined surveyed targets measured on Pictometry north-view images only:

North-view coordinates tested 3.12 ft horizontal accuracy at 95% confidence level

North-view coordinates tested 1.04 ft vertical accuracy at 95% confidence level

Accuracy of clearly defined surveyed targets measured on Pictometry south-view images only:

South-view coordinates tested 3.26 ft horizontal accuracy at 95% confidence level

South -view coordinates tested 1.76 ft vertical accuracy at 95% confidence level

Accuracy of clearly defined surveyed targets measured on Pictometry east-view images only:

East-view coordinates tested 3.86 ft horizontal accuracy at 95% confidence level

East -view coordinates tested 1.43 ft vertical accuracy at 95% confidence level

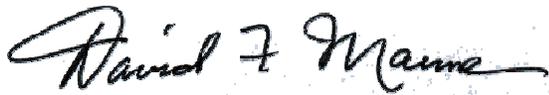**Accuracy of clearly defined surveyed targets measured on Pictometry west-view images only:**

West-view coordinates tested 4.70 ft horizontal accuracy at 95% confidence level

West -view coordinates tested 1.57 ft vertical accuracy at 95% confidence level

Accuracy of clearly defined surveyed targets measured on Pictometry 4-view images with coordinates averaged from all views in which targets were visible and could be measured:

All-view coordinates tested 3.70 ft horizontal accuracy at 95% confidence level

All -view coordinates tested 1.45 ft vertical accuracy at 95% confidence level

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