

Precision Terrain

New Design Performance

Navigation and Increased Ambiguity Range Converge

This development near our offices provided a suitable location to do initial testing with relief that clearly demonstrates the utility of the enhanced ambiguity interval. We entered through the gate and drove along the concrete drainage and over the exposed manhole cover and then performed a looping turn and returned along the same path to the



road through the gate. This gravel road runs from SSE to NNE. The Pavement Profile Scanner (PPS) was used to perform 2 separate runs, one going straight in and a second coming back out, after a looping turn and making a turn to the right (south) upon exiting on the road..

Motivation to Evolve Our Technology

The quest for the ultimate phase laser radar began in an effort to measure pavement deformation under the rolling wheel of trucks at highway speed which drove the performance requirements for our technology.

The application of the resulting design has been directed at measuring inservice nominally smooth pavement shape.

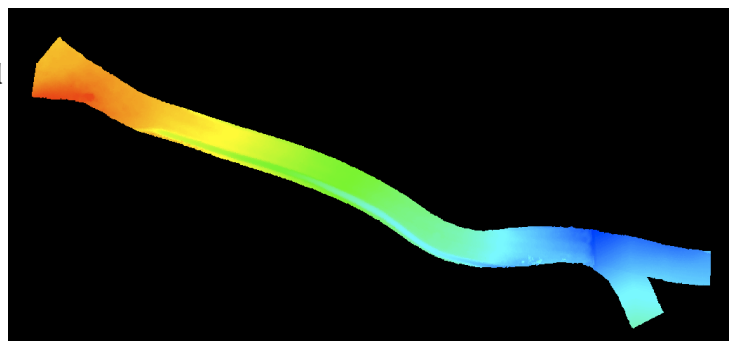
This naturally lead to precision survey of roads and railroads though the integration with an inertial navigation system.

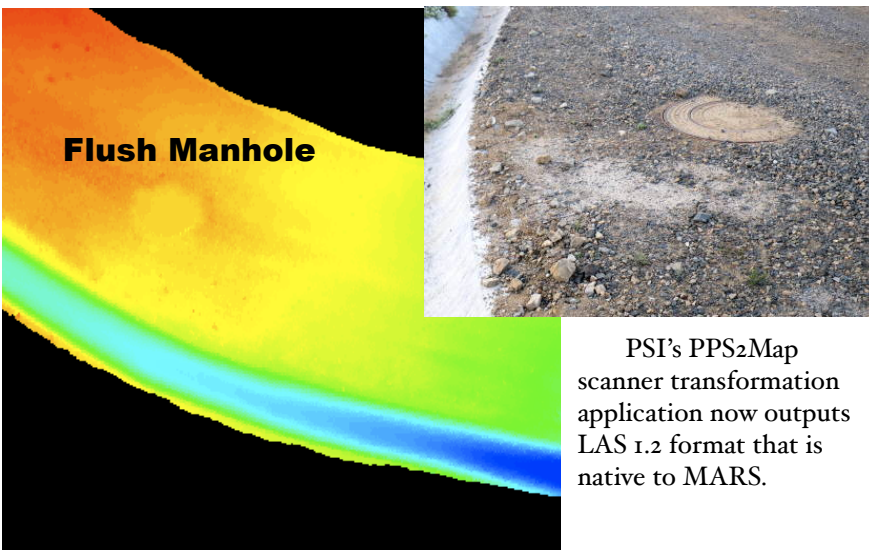
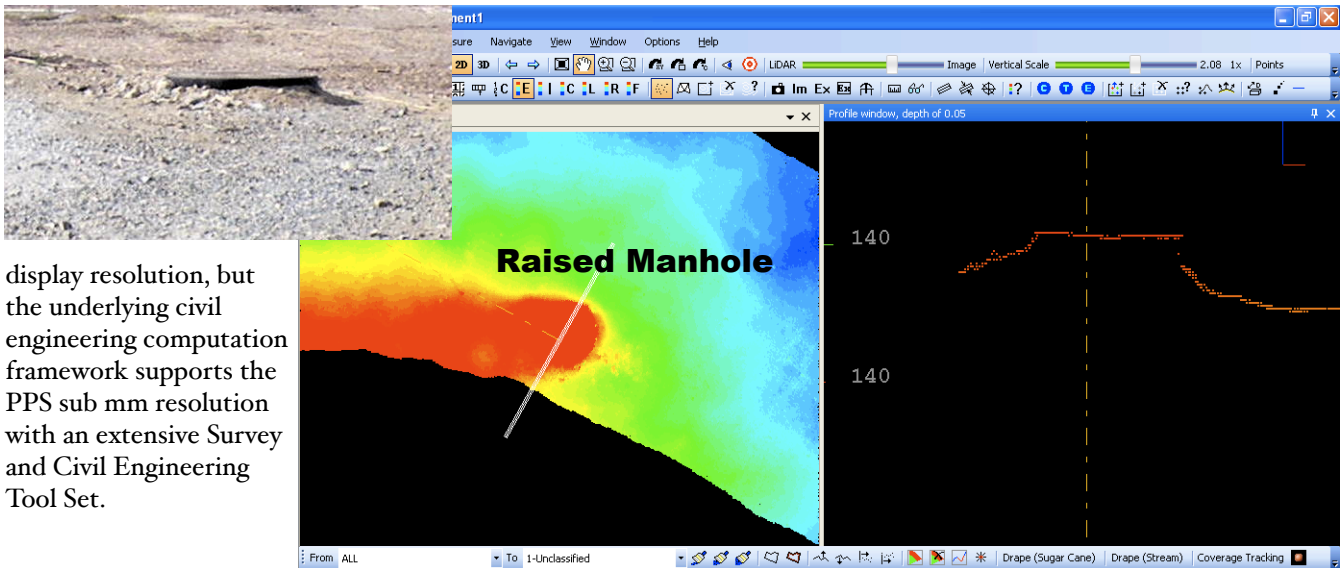
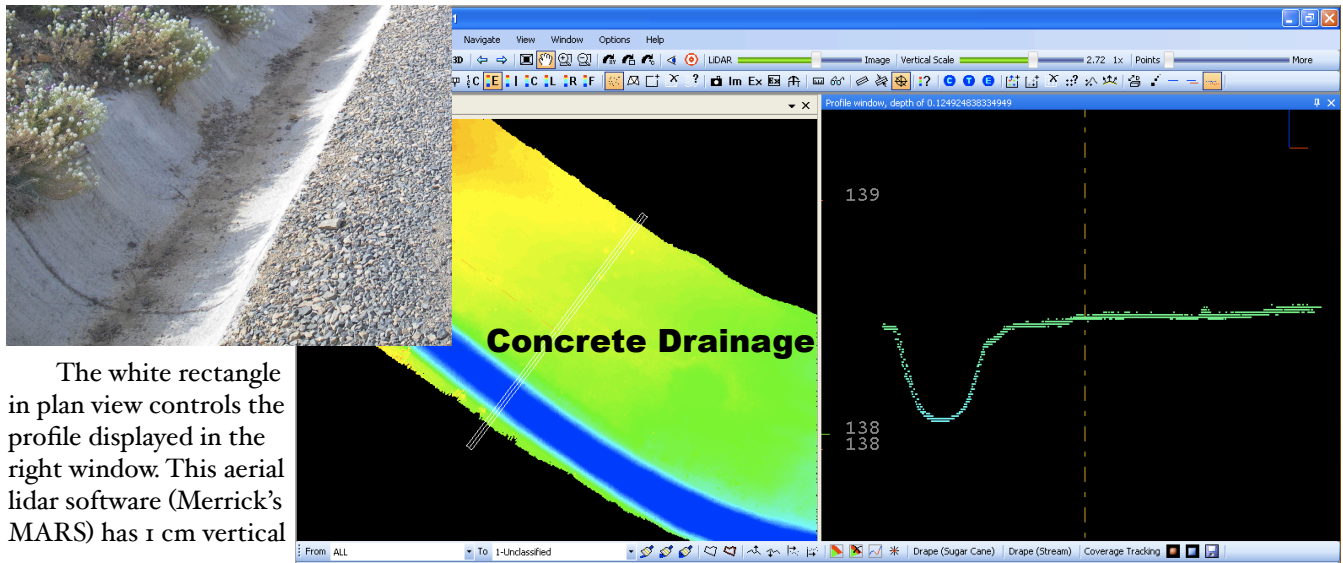
To realize the full potential of the technology we have increased the ambiguity interval from 10 cm to 3.2 m and implemented real-time range data.

William Herr

POINT CLOUD

The point cloud consisting of the data merged from both runs is shown in the colored plan view at the right, with the warm end of the spectrum representing higher elevation. The .concrete drainage is visible as the bluish strip in the green region running along the lower edge. The exposed manhole cover is in the red area. More detailed views with cross sections are on page 2.





PSI's PPS2Map scanner transformation application now outputs LAS 1.2 format that is native to MARS.

Ongoing Activities

High Resolution Plotting

Matlab engine/executable

Quantitative Assessment

I-15 Reversible HOV Lanes with Caltrans reference survey

Railroad rail measurement

Laboratory experiments

Airfield Survey

Looking for options to demo capability

Survey Services Offered

Road, Airfield and Railroad. USA and International