

Mobile Digital Imagery Mapping – a Case Study of a 2500kms Project

Jon Warren and Arnab Bhowmick (USA)

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SUMMARY

Snohomish County Mobile Mapping Pilot Project, Snohomish County, Washington The Asset Maintenance Management System (AMMS) committee, of Snohomish County Public Works, was looking to develop a roadway asset collection and management system to provide geographic based location and attribute data for the county's roadway facilities. The goal was to collect, identify and inventory the assets within the County's right of way and those under their current maintenance program. David Evans and Associates (DEA) was the prime consultant, with GeoAutomation and Geocopia as team members for the project. DEA provided the project and contract management, data research, survey control, mission planning, field data collection guidance and support, data extraction and mapping support, and QA/QC for the asset location and attribute data accuracy. DEA was responsible for mapping and collecting roadway attributes for: pavement markings, above ground utility facilities, signs, guardrails, barriers, planter strips, retaining walls, curb, gutter, sidewalk, ADA ramps, traffic signals, and luminaires. Deliverables included: ESRI based GIS feature data sets, post-processed data, detailed images, and software to view and extract data (x, y, and z values of each unique pixel), and a positional control and accuracy statement of within 0.3m. The average accuracy was within 0.2' in x, 0.2' in y, and 0.2' in z values. GeoAutomation, of Belgium, provided the computations and processing of the tracks and poses for the imagery geographic positions, and data extraction and mapping support. Geocopia, of Montreal, Quebec, provided the personnel and vehicle, with the 14 cameras and 17 computers, for recording and processing 37 terabytes of imagery. The GeoAutomation® system is very unique technology that utilizes digital imagery and pixel matching of 14 cameras, recording images at a rate of 21 images per second per camera, providing a constant 360 degree view, on a mobile vehicle platform at traffic speeds. This provides the ability to perform roadway asset inventory mapping (sub 1.0') or Design Grade (sub 0.05') accuracy mapping, from your desktop computer, without putting personnel in traffic. The mapping from your desktop computer can be accomplished by the DEA Team, and/or by the client's staff, because it does not require any significant training or interpretation of millions of points of lidar data. They also provide the software to view, extract, and populate into other CAD based software programs (ESRI, AutoCad, and Microstation). The system is simple to use and the images are only 250KB of data.