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2018 AWARDS FOR ENGINEERING EXCELLENCE

Award of Merit

Semi-Automated Roadway Corridor Asset Inventory Collection



Consultant

Tetra Tech Canada Inc.

Owner/Client

BC Ministry of Transportation and Infrastructure

Category

Soft Engineering

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The British Columbia Ministry of Transportation and Infrastructure (the Ministry) has been updating their Corporate Highway & Resource Information System (CHRIS) asset inventory data to prepare for renewing all the maintenance contracts for the Province's 28 Service Areas. In the past, when asset data needed updating, team members were sent to manually identify and inventory every asset in the field, or by humans scrolling through thousands of georeferenced images, and manually identifying every individual item.

Tetra Tech was retained to improve the efficiency of spatially referencing and classifying the Ministry's roadway assets for this project, Tetra Tech employed and developed its robust, automated and semi-automated method that uses LiDAR and imagery data collected from a mobile vehicle platform.

Tetra Tech collected more than 75 terabytes of data, for 9,000 km of LiDAR point clouds and panoramic imagery from the British Columbia highway network. Through use of machine learning algorithms, roadway corridor assets were extracted and preliminarily classified. Using tools for viewing the initial automated classification results, the semi-automated confirmation and identification of assets was completed. Tetra Tech inventoried all traffic signs, guardrails, curbs, line paintings and markers, rumble strips, safety features, and roadside facilities with over 98% accuracy. The total asset inventory was approximately 65,000 traffic signs, 2,000 km of guardrails, 10,000 km of rumble strips, and 20,000 of other corridor assets.