Research and Development of the Caltrans’ Geospatial Technology Proving Ground

Integrating mobile mapping and LiDAR-based geospatial data collection systems into Caltrans’ business practices for safe, efficient delivery of transportation projects.

WHAT IS THE NEED?

The California Department of Transportation (Caltrans) continually seeks ways to deliver transportation projects more safely and efficiently. To produce high-quality projects and optimize limited transportation dollars, Caltrans needs to continually innovate and improve existing processes and procedures. In addition, the Department needs to evaluate methods to lower project support costs, accelerate project schedules, minimize rework, and be transparent and accountable to taxpayers.

Minimizing the risk to workers and traveling motorists during Caltrans’ operations is an on-going priority. Identifying which tools are best to use for specific purposes and how to integrate data collected from various platforms determines the safest and most cost-efficient way of doing business. Caltrans, via research Task 3179 under Contract 65A0749, established a Geospatial Technology Proving Ground (GTPG) facility to support the integration of mobile mapping and LiDAR-based data collection systems into Caltrans’ business practices. The Caltrans Survey Program and other Caltrans Divisions have a need for research to capitalize on the efficiencies gained through a “collect once, use it many times” best practice.

WHAT ARE WE DOING?

A significant component of the research is deployment support for the new Caltrans-owned Trimble MX9 Mobile Terrestrial Laser Scanning (MTLS) system. MX9 deployment support includes the following activities:

- Deployment support for the new Caltrans-owned Trimble MX9 Mobile Terrestrial Laser Scanning (MTLS) system.
The goal of the research is to leverage the existing GTPG facility to improve efficiencies of utilizing common collected geospatial data from a wide variety of Caltrans programs for various Caltrans projects and field operations. In addition, the goal includes capitalizing on the efficiencies gained from the research to transition the “collect once, use it many times” theory into an applicable best practice into Caltrans business operations.

Enablement of the Survey Program to deliver better products in alignment with the Department’s Enterprise Statewide Field Data Collection efforts. Caltrans Surveys can lead the Department in attaining its goal of “collect once, use it many times” practice for all Geospatial data, thus yielding known safety, efficiency, and cost benefits.

The Research and Deployment Advisory Committee approved funding for this research task on May 4, 2021. The Caltrans Contract Manager and Task Manager held a teleconference meeting on Jun. 29, 2021 to discuss the current status of the research and identify the new Caltrans customer representative.

The next immediate step for this research involves collaborating with the Caltrans customer and the university research team to develop and refine the research scope of work into a research proposal.

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