Ohio Department of Transportation Research Project Fact Sheet

Optimizing Maintenance Equipment Tracking	
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The Problem

ODOT spends significant amount of time, money and manpower for locating maintenance equipment. This project was initiated to evaluate ODOT's current process for tracking maintenance equipment, identify and evaluate technologies for tracking maintenance equipment, and provide recommendations for the most cost-effective tracking system that ODOT can use to optimize the used the different types of maintenance equipment.

Research Approach

The project was divided into two phases. The results of Phase 1 indicated that the optimum tracking system should not consist of one type of tracking device, but rather a mix of Global Positioning System (GPS) and Bluetooth low energy (BLE) devices. In addition, the tracking software should be custom-made to integrate the various types of tracking devices into one system that is user-friendly for ODOT personnel. Phase 2 of this study included identifying and evaluating different types of BLE enabled GPS (GPS-BLE) devices and BLE beacons, which can be used in the system to track equipment in ODOT district and county garages.

Findings

A system prototype (referred to ODOTMETS) that can be used to track and schedule equipment in ODOT district and county garages was developed and evaluated.

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This research was sponsored by the Ohio Department of Transportation and the Federal Highway Administration.

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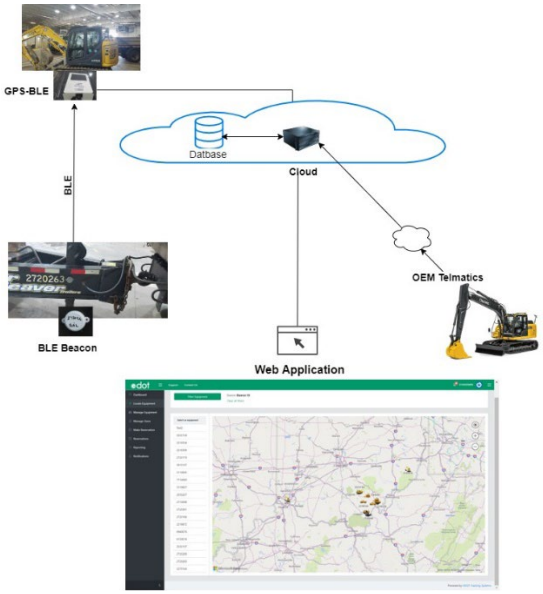
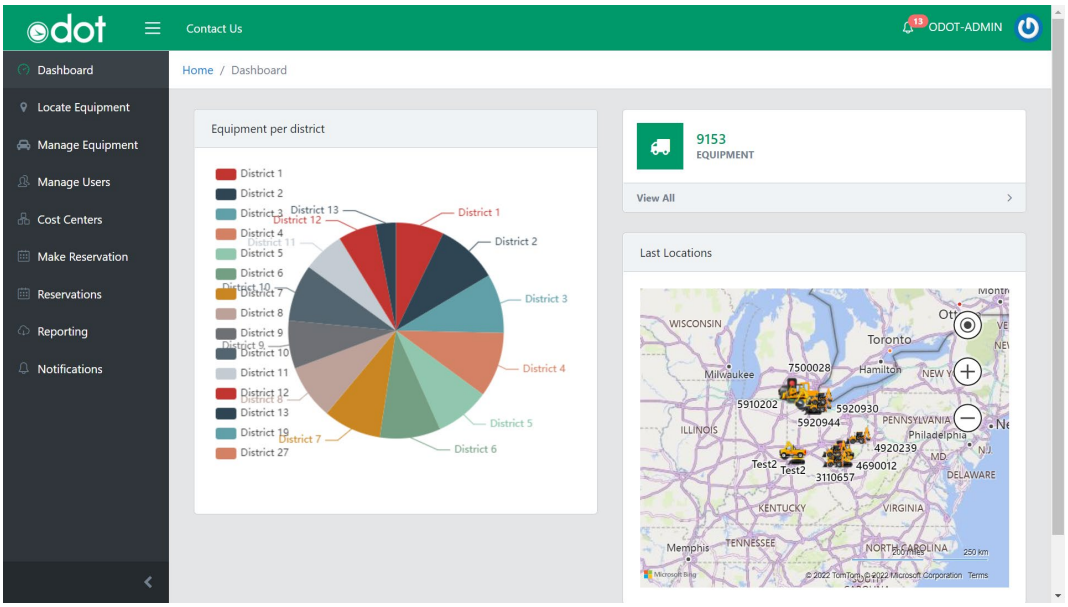


The recommended system consists of using few (minimum of three) GPS-BLE devices on selected equipment that are frequently used in the field operations of each ODOT district and county garages and using beacons on pieces of equipment that are typically needed and shared between by ODOT county garages. The system will be highly cost-effective with an estimated cost to benefit ratio of more than 8.



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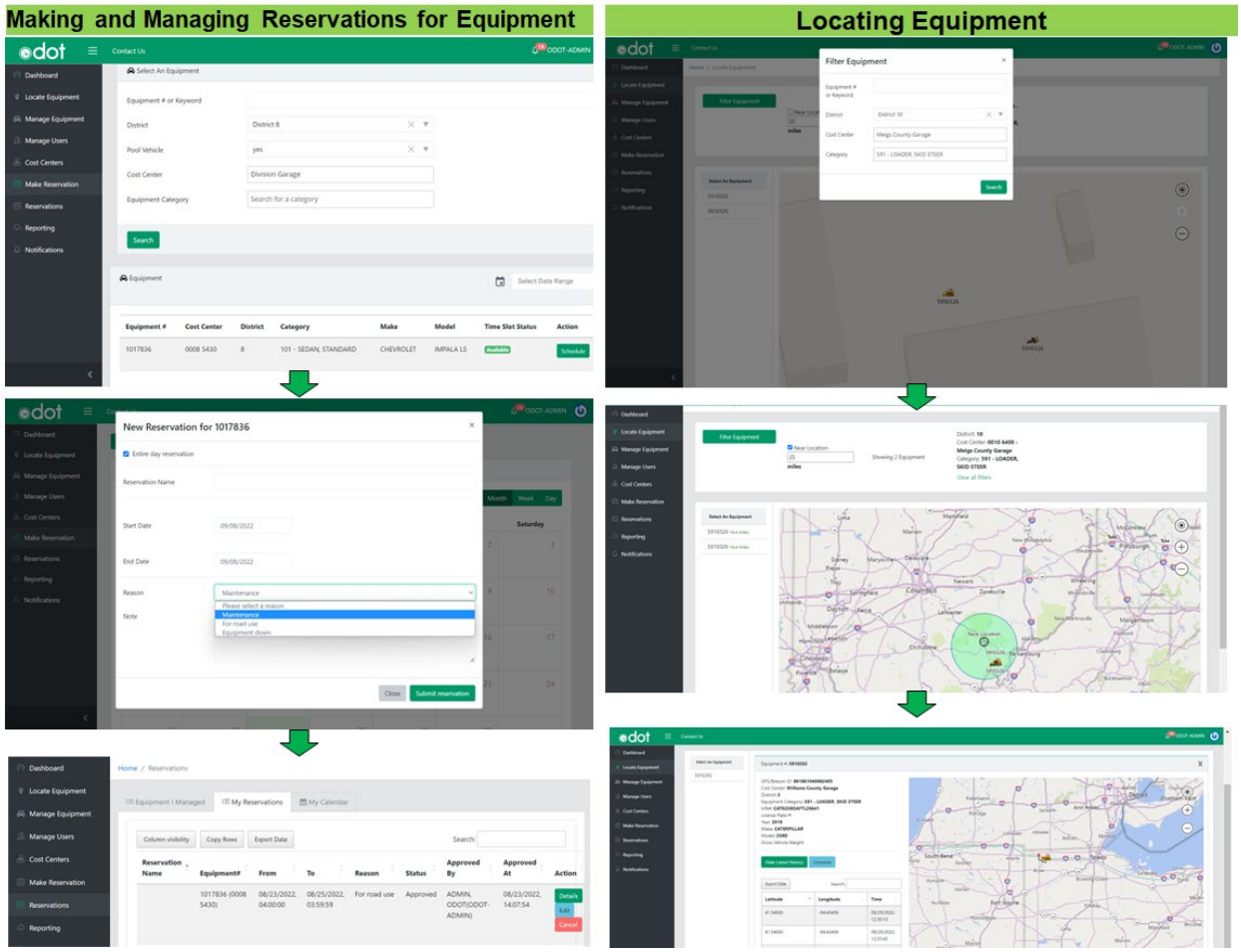

ODOTMETS Web Application

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