TriDurLE

National Center for Transportation Infrastructure Durability & Life-Extension

UTC Project Information – National UTC TriDurLE	
Project Title	Analyzing the Impact of Autonomous Maintenance Technology to Transportation Infrastructure Capacity for Condition Monitoring and Performance Management
University	Missouri University of Science and Technology
Principal Investigator	Dr. Xianbiao (XB) Hu
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Funding Source(s) and Amount Provided (by each agency or organization)	TriDurLE: $52,312 Colorado DOT: $52,312
Total Project Cost	$104,624
Agency ID or Contract Number	
Start and End Dates	7/1/2020-6/30/2022
Brief Description of Research Project	The Autonomous Maintenance Technology (AMT) is a quickly emerging autonomous-vehicle-based technology for improving transportation infrastructure maintenance by removing drivers from risk. This project will develop models and algorithms to reveal its fundamental operating mechanism, and analyze its impact to transportation capacity for infrastructure condition monitoring and performance management.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	Newell car following model and moving-bottleneck-based traffic flow theory will be utilized to mathematically derive the roadway capacity under different scenarios. Multiple sensors, including high resolution Global Positioning System (GPS), Light Detection and Ranging (LiDAR), Radar, high definition camera, accelerometer and gyroscope installed on the AMT vehicles will collect real data from the field for model validations.
Impacts/Benefits of Implementation (actual, not anticipated)	The results of the proposed study are expected to provide preliminary guidance to state DOT for transportation roadway maintenance-related work, as well needed transportation performance management and system management.

Web links • Reports • Project website	