

UTC Project Information	
Project Title	MPC-592 – Development of an Autonomous Transportation Infrastructure Inspection System Based on Unmanned Aerial Vehicles
University	Colorado State University
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Funding Source(s) and Amounts Provided (by each agency or organization)	<p>USDOT, Research and Innovative Technology Administration \$58,000</p> <p>Colorado State University \$58,000</p>
Total Project Cost	\$116,000
Agency ID or Contract Number	69A3551747108
Start and End Dates	February 26, 2019 to July 31, 2022
Brief Description of Research Project	<p>With transportation infrastructure in the United States aging and deteriorating, maintenance and inspection of the existing infrastructure become critical. Accurate and efficient inspections inform engineers/managers for better repair decisions/planning, load-rating, and effective management of limited resources. Current human-based infrastructure inspection may be costly, lack quantitative measures of damage, as well as pose a danger to inspectors. Thus, there is a need to develop more cost-effective, quantitative, and safe approaches for infrastructure inspection. In response to this need and recognizing the rapid technological improvement of UAV-based remote sensing, this project will explore the potential of UAV-based</p>

	<p>remote sensing technology in transportation infrastructure inspection with a focus on bridges. The ultimate goal of the study is to develop an autonomous and quantitative infrastructure inspection procedure that requires minimum human intervention. The three project objectives include: (1) Develop an automated process to identify different elements of a structure and establish an as-built element-wise building information model (BIM) , (2) Develop an automated damage evaluation tool that can identify the type, location and amount of structural damage for each element; and (3) Develop a damage documentation tool that maps the identified element-wise damage to the corresponding bridge element in a BIM model.</p>
<p>Describe Implementation of Research Outcomes (or why not implemented)</p> <p>Place Any Photos Here</p>	
<p>Impacts/Benefits of Implementation (actual, not anticipated)</p>	
<p>Web Links</p> <ul style="list-style-type: none"> • Reports • Project Website 	