

A Study of How Unmanned Aircraft Systems Can Support the Kansas Department of Transportation's Efforts to Improve Efficiency, Safety, and Cost Reduction

Report Number: K-TRAN: KSU-15-3 • Publication Date: August 2016

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Introduction

Regulations for using Unmanned Aircraft Systems (UAS) are not yet standardized by the Federal Aviation Administration (FAA). This creates tedious obstacles for those who wish to utilize the technology.



An Unmanned Aircraft System (UAS) in Use

Project Description

The goal of this research is to provide a justified recommendation to the Kansas Department of Transportation (KDOT) on whether or not it is beneficial to implement UAS into routine operations, as well as advice on specific UAS equipment that best fits the needs of KDOT. This report includes a literature review which lists the commercial companies currently using UASs after gaining a Certificate of Authorization (COA) exemption and research done by other DOTs. Potential applications of and concerns about UAS usage are also included in the literature review. Please note that in the literature review, the term UAS and unmanned aerial vehicles (UAV) are used interchangeably since the terms vary within each source. A survey was created and sent to all state Department of Transportation offices. A SWOT (Strengths, Weaknesses, Opportunities, and Threats/Challenges) Analysis was carried out looking at different areas of interest for KDOT.

Project Results

Based on the literature review, survey responses, and SWOT analysis, the use of a UAS for KDOT's operations will improve safety, efficiency, and possibly reduce costs. Out of the nine areas considered for implementing UAS, seven could realize benefits in safety, efficiency, and a possible cost savings. The recommended UAS applications are in bridge inspection, radio tower inspection, surveying, road mapping, high-mast light tower inspection, stockpile measurement, and aerial photography. While UAS cannot replace many of the current activities that KDOT performs, it could greatly enhance them both from a safety and technical point of view.

Project Information

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