NCHRP 20-68A – "US Domestic Scan Program"

Domestic Scan 17-01 Successful Approaches for the Use of Unmanned Aerial Systems by Surface Transportation Agencies

A recent AASHTO survey has revealed that at least 19 different State DOT are exploring the use of the equipment. Several state DOTs are actively performing research in the use of Unmanned Aerial Systems (UAS) to facilitate operations. The UAS technology is dynamic and advancing quickly. UAS have been carrying numerous devices such as HD cameras, HD video cameras, LiDAR imaging equipment, and more. Contractors, Owners, and Consultants are using these devices to assist them in day to day operations as well as researching future uses. Because of its semi-regulated use, challenges do exist to implementation; however, several lead states have been identified whose experience can benefit others in accelerating implementation.

This scan will visit users of this technology and document their specific application: Based upon a AASHTO survey, the following are possible State DOT that should be considered for this visit: Connecticut, Delaware, Florida, Idaho, Indiana, Kentucky, Minnesota, Michigan, Oregon, South Carolina, Vermont, or Washington State. The team should meet with survey, design, inspection, operations and construction staff to assess the effectiveness of the technology and partnering efforts currently being used by the state DOT's, consultants, universities, supplier, and contractors.

Information to be gathered would include but not be limited to:

- Documenting why, how, and where are they are using this technology for inspection, inventory, survey, etc.
- How the data is being stored and used
- What control method is being used (remote control or autonomous).
- What attached devices are being used (i.e. HD cameras, video cameras, LiDAR, etc.)
- Who is the Owner/Operator of the UAS: (agencies, Contractors, Consultants, and/or Universities)
- Costs and realized Benefits
- Barriers, obstacles and opportunities experienced in deployment

The scan focus and objectives shall provide a better understanding of the proactive use of this technology as well as the return on investment and its benefits to the surface transportation community. This scan will assist the accelerated national deployment of the technology by providing "Getting Started" guidance and case studies of successful applications of UAS. The scan will also provide valuable information concerning where additional development and research might be needed to support the increased use of this technology.

Original Scan Proposal Title(s):
Unmanned Arial Systems In Highway Construction And Maintenance
Defining State DOT Needs For Unmanned Aerial Systems For Bridge Condition Assessment

Execution Schedule

Milestone	Anticipated Date
Chairs and Team Members Identified	July 2017
Desk Scan Completed	October 2017
Prescan Meeting Held	October 2017
Scan Conducted	March 2018
Draft PowerPoint submitted by SME	April 2018
Draft Report Delivered to NCHRP and Panel	June 2018
Final Report Delivered to NCHRP	October 2018

Estimated Scan Cost: $175,000
Anticipated Duration: 1 week (type 3 scan)

Last Reviewed/Revised April 17, 2017