Unmanned Aircraft Systems Sense and Avoid System Certification Obstacles

Purpose

- The research on Unmanned Aircraft Systems (UAS) Sense and Avoid System Certification Obstacles will determine the certification obstacles associated with equipment and systems designed to satisfy the Sense and Avoid (SAA) requirement necessary to comply with the Code of Federal Regulations (CFR) that apply to operating and flight rules, 14 CFR Part 91, and how a UAS would comply with those rules

Background

- It is difficult for SAA systems to obtain operational and airworthiness approval because these systems are new and their intended function needs to be defined in the context of the SAA system and associated UAS. SAA systems must serve as a means of compliance with 14 CFR 91.113 right-of-way rules and others. Issues associated with the use of SAA systems to comply with the above 14 CFR 91 requirements and others, if any, must be identified and understood

Projected Benefit of Research

- Updated Civil Certification requirements for systems and equipment designed to provide a means of compliance with 14 CFR Part 91 SAA
- Identification of requirements for ATC Minimum Service Standards (ATCMSS) for UAS

Research Approach

- Literature review to analyze current regulatory guidelines and make recommendations on applicable 14 CFR 91 compliance areas
- Develop a representative model for SAA system to be used in subsequent certification analysis
- Perform detailed certification analysis of notional SAA system and identify certification obstacles
- Continue certification analysis and provide examples of new methods that may be leveraged to address SAA certification obstacles

Research Partners

- FAA William J. Hughes Technical Center

Status

- UAS Document Management System Database and Whitepaper completed
- SAA Reference Worksheet and Whitepaper completed
- University of North Dakota Legal Analysis of 14 CFR Part 91 completed
- Final report documenting 24 SAA Certification Obstacles
- Research task finalized July 2016

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