

Certification Test Case to Validate sUAS Industry Consensus Standards

Purpose

- The certification test case will validate small Unmanned Aircraft Systems (sUAS) industry standards and support standards development and certification strategies for sUAS, necessary for their safe integration in the National Airspace System (NAS)

Background

- Under the FAA Modernization and Reform Act of 2012, Congress tasked the FAA with integrating UASs into the National Airspace System (NAS). In order to comply with the Congressional mandate, the FAA established a sUAS rule (published within the Code of Federal Regulations as 14 CFR Part 107), allowing small UAS to operate in the NAS
- As part of this rulemaking effort, the FAA selected American Society for Testing and Materials (ASTM) to establish a set of standards for airworthiness, maintenance and operation in support of Part 107. The test case will identify weaknesses to make the standards more robust, and increase the safety of sUAS operations in the NAS

Projected Benefit of Research

- Findings, recommendations, and lessons learned will support future sUAS certification projects
- A validation framework to ensure that sUAS airframe standards developed by ASTM are acceptable for safe integration of UAS in the NAS

Research Approach

- A flight test program was established to show compliance with applicable sUAS standards, specifically the design and construction standard
- Compliance findings were documented by a mock certification process in the form of a compliance checklist
- A report documented issues arising from choice of method of compliance and difficulty showing compliance

Research Partners

- The FAA's Center of Excellence for UAS Research, Alliance for System Safety of UAS through Research Excellence (ASSURE): Kansas State University, National Institute for Aviation Research (NIAR) at Wichita State University

Status

- Research began September 2015
- Initial F38 Flight Test Framework Development completed
- Created best practices for design, construction and certification testing of small UAS
- Final report with gap analysis and issues paper were completed November 2016