

Highlights of [GAO-13-346T](#), a testimony before the Subcommittee on Oversight, Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

Unmanned aircraft systems are aircraft and associated equipment that do not carry a pilot aboard, but instead operate on pre-programmed routes or are manually controlled by pilot-operated ground stations. Although current domestic uses of UAS are limited to activities such as law enforcement, forensic photography, border security, and scientific data collection, UAS also have a wide range of other potential commercial uses. According to an industry forecast, the market for UAS is expected to grow and could be potentially worth \$89 billion over the next decade.

Concerned with the pace of UAS integration into the national airspace, Congress established specific requirements and set deadlines for FAA in the 2012 FAA Modernization and Reform Act (the 2012 Act).

This testimony discusses 1) the roles and responsibilities of and coordination among federal agencies and other UAS stakeholders involved in integrating UAS, 2) FAA's progress in complying with the 2012 Act's UAS requirements, and 3) research and development efforts by FAA and other entities to address challenges for safely integrating UAS.

This testimony is based on a 2012 GAO report. In past work, GAO analyzed FAA's efforts to integrate UAS into the national airspace, the role of other federal agencies in achieving safe and routine integration, and research and development issues. GAO also conducted selected interviews with officials from FAA and other federal agencies, industry, and academic stakeholders.

View [GAO-13-346T](#). For more information, contact Gerald L. Dillingham at (202) 512-2834 or dillinghamg@gao.gov.

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UNMANNED AIRCRAFT SYSTEMS

Continued Coordination, Operational Data, and Performance Standards Needed to Guide Research and Development

What GAO Found

While Congress has tasked FAA to lead the effort of safely integrating unmanned aircraft systems (UAS) in the national airspace, several federal and other entities also have a role. FAA has established various mechanisms to facilitate collaboration with these entities. For example, FAA has entered into formal agreements with the Department of Defense (DOD) and the National Aeronautics and Space Administration (NASA) on obtaining appropriate safety data and coordinating research and development, respectively. FAA has also involved industry stakeholders and academia in the development of standards and research for UAS operations. FAA recently created the UAS Integration Office, within FAA, to coordinate all intra-agency UAS efforts and provide organizational leadership. Continued collaboration among UAS stakeholders will be critical to minimizing duplication of research and addressing implementation obstacles.

While FAA has made progress toward meeting the 2012 Act's requirements, as of January 2013, it has missed several of its deadlines. FAA continues to face challenges, with many of its efforts still in process. For example, the establishment of six test ranges for UAS operations, as required by the 2012 Act, is being delayed due to privacy concerns. Meeting the 2012 Act's requirements moving forward will require continued collaboration and significant work for FAA. In September 2012, GAO recommended that FAA incorporate mechanisms in its planning that allow for regular monitoring to assess its progress. Such mechanisms can help FAA identify what has been achieved and what remains to be done.

Research and development efforts are under way to mitigate obstacles to safe and routine integration of UAS into the national airspace. However, these research and development efforts cannot be completed and validated without safety, reliability, and performance standards, which have not yet been developed because of data limitations. GAO previously reported that FAA has not utilized the operational data it already possesses, such as data provided by the DOD.

Examples of UAS



Sources: Octatron Inc. and DHS.