



Insight

The National Drone and Advanced Air Mobility Initiative Act

JOSHUA LEVINE | MAY 31, 2023

Executive Summary

- House Republicans introduced the National Drone and Advanced Air Mobility Initiative Act to promote domestic production and deployment of Unmanned Aircraft Systems (UAS) – colloquially known as drones – and Advanced Air Mobility (AAM) technology, to compete with Chinese technological dominance.
- To bolster research, development, and deployment of civilian UAS and AAM, the bill would provide \$1.7 billion in funding and create an initiative to coordinate research across federal agencies; it would also assess the threats posed by foreign civilian drones.
- The bill lacks provisions to address regulatory barriers to commercial drone deployment, fails to establish metrics to measure program success, and risks duplicating private-sector investment.

Introduction

Representative Frank Lucas (R-OK), Chair of the House Science, Space, and Technology Committee, [introduced](#) the [National Drone and Advanced Air Mobility Initiative Act](#) on May 22, 2023, to compete with the dominant position of Chinese drone firms, particularly [Shenzhen Da-Jiang Innovations \(DJI\)](#), as well as promote the domestic production and deployment of Unmanned Aircraft Systems (UAS), also known as drones, and research and development into Advanced Air Mobility (AAM) technology, such as air taxis.

The [bill](#) aims to promote domestic UAS firms by subsidizing production, development, and deployment of UAS and AAM to compete with the Chinese drone industry. To achieve this, it would create a new position within the White House Office of Science and Technology Policy, convene an interagency initiative to coordinate federal UAS and AAM policies, allocate \$1.7 billion across several federal agencies to promote general research and development (R&D) as well as domestic manufacturing, and produce reports on the threats posed by foreign-made drones and adversarial UAS.

Among the bill's benefits are that it would attempt to promote federal interagency collaboration and fund general R&D related to drones and AAM, as well as promote greater investment by universities into STEM and related training to advance priorities for UAS and AAM.

Nevertheless, it has several drawbacks. First, the bill does little to address existing regulatory hurdles to commercial drone deployment. Second, long timelines and vague program goals risk replicating problems faced by the Federal Aviation Administration (FAA) during its UAS pilot programs. Further, the bill's funding requirements related to domestic manufacturing and business development risk duplicating private-sector investments in American UAS firms. Congress should consider amendments to address these issues.

Legislative Specifics

The National Drone and Advanced Air Mobility Initiative Act consists of three key components: federal oversight of UAS activities, guidelines and funding criteria for UAS and AAM projects, and limits on additional legal restrictions on UAS activities.

The bill would also provide federal guidance on UAS and AAM by creating a clearinghouse for research projects and grants, data sharing, standard setting, and general support for any federal initiatives. Within a year of enactment, the initiative office must commission a Government Accountability Office study on the use of foreign-made UAS by the federal government, addressing concerns [regarding](#) the use of DJI drones by federal agencies.

The bulk of the bill focuses on federal investments in UAS and AAM. This investment includes public-private partnership-driven incubators for UAS and AAM focused on general research and workforce development, funding for several federal agencies to advance priorities related to UAS and AAM – such as a domestic manufacturing pilot program through the National Institute of Standards and Technology – programs to encourage UAS research by STEM students through the National Science Foundation, and FAA research on safety and airworthiness.

Further, the bill limits the imposition of additional FAA flight restrictions on UAS R&D operations under 400 feet ([current](#) FAA regulations restrict drone flights above 400 feet). This prevents R&D activities from being undermined by additional FAA regulations, while preserving a role for states and localities to work with drone operators and local partners to promote integration and [protect](#) private property rights.

Finally, the bill largely prohibits the use of federal funds to purchase drones from a “foreign country of concern” as part of an attempt to decouple from Chinese supply chains and promote domestic manufacturing. This prohibition extends beyond current [policy](#) restricting federal agencies from purchasing Chinese-made drones to any entities receiving or utilizing funding through the bill and includes individual manufactured components. The prohibition may be overly broad, however, and should be treated with caution.

Pros and Cons of the Legislation: Clear Skies or Troubling Turbulence?

Pros

Creating the initiative office to direct UAS and AAM efforts across the federal government could be beneficial, as it would provide a clear chain of command to give Congress and the private-sector clarity on the federal government’s role in the UAS and AAM market. Developing standards for data collection and sharing, privacy expectations, and coordination among private firms, U.S. government officials, and allies around the world are all worthwhile goals, as well.

The bill also provides substantial funding for university research and general R&D for UAS, AAM, and STEM sectors. [Government officials](#) and [researchers](#) have raised concerns about [fewer](#) Americans receiving degrees in critical STEM fields, a loss of research capacity, and failure to stimulate breakthroughs in STEM. [Research](#) has shown that [funding](#) R&D activities can be an effective way to stimulate innovation and new ideas. Legislators should be wary, however, of engaging in more targeted [industrial policy](#), which is prone to producing [bad bets](#) on [favored firms](#), [cost overruns](#), and the [distortion](#) of [price signals](#) and [market dynamics](#).

Cons

Even with the bill's generous funding stream, it does not address continued shortcomings with the FAA and Beyond Visual Line of Sight (BVLOS) guidelines, allocates funding before metrics to evaluate success are provided, and includes funding provisions that are overly broad and could lead to millions of dollars being wasted.

The largest impediment to a thriving commercial and civilian drone industry in the United States is the restriction on BVLOS flights for operators. BVLOS allows drone operators to fly beyond the operator's line of sight, which is necessary to scale commercial operations for UAS and AAM. The absence of BVLOS rules is cited as a critical barrier to commercial operations in [various government](#) reports and [testimony](#) by leaders of UAS advocacy organizations and private firms. Without clear BVLOS rules, firms looking to test or expand operations to prepare for commercial service must apply and be approved for a waiver from the FAA. As of [2021](#), the FAA approved 1 percent of BVLOS waiver requests. A [survey](#) of nearly 900 drone companies worldwide ranked clear regulatory frameworks as the most important factor for evaluating market dynamics. The FAA has the final say on these rules, but outside of emphasizing collaboration and interagency communication and allocating funds for further research on what is needed to enact BVLOS rules, the bill does little to incentivize more effective governance or anticipate other regulatory roadblocks to drone deployment and integration into the national airspace system.

Another concern with the bill is that funds would be allocated before the initiative office establishes metrics and clear expectations for evaluating costs and benefits of the initiative. A major roadblock to evaluating progress on UAS regulation within the FAA was the agency's [inability to integrate information from](#) pilot programs, specifically the BEYOND program, which relied on public-private partnerships, because of a lack of defined metrics for success. In the bill's current form, the initiative office is tasked with establishing a "strategic plan" for UAS spending and evaluation two years after enactment. Without clear expectations and guardrails, agencies, administrators, and potential partners will spend funds absent clear objectives to guide their decisions. In language related to funding, specific requirements for receiving funds are outlined, but they do not require clear metrics or goals be set before funds begin to flow.

Vague funding guidance and emphasis on domestic manufacturing also risks wasting tens of millions of dollars and ignoring strong private investment in UAS firms and services. Considering the [failure rate](#) for venture-backed startups is very high, the U.S. drone industry is [evolving](#) rapidly, and [DJI](#) is losing market share to [narrowly focused startups](#), drafters should be humble about their ability to predict industry progress. [Private investors](#) are pouring billions of dollars into American companies, with a [focus](#) on hardware, data systems, and [services](#) propelling the American [market](#). Additional [skepticism](#) should be warranted considering the bill's emphasis on "[geographic diversity](#)" of investments, a strategy that has routinely failed to produce the next Silicon Valley.

Potential Pre-flight Adjustments

Conceptually, drafters should consider ways to incentivize removing regulatory barriers and clarifying expectations before allocating public funds. Outside of the FAA's BVLOS rules, which are [expected](#) sometime in fiscal year 2023, there are several issues that an interagency committee would be wise to highlight and to direct research funding, such as: where private firms and public officials can [collaborate](#) on unmanned traffic management (UTM), what types of [smart infrastructure](#) are best suited for UTM, and how to promote [efficient](#) and properly priced [airspace leasing](#) and [demarcation](#).

In terms of implementation, if Congress wants to invest in the drone industry, it should prioritize general R&D funding at universities and regions where there is a growing UAS or aviation-adjacent industry, rather than trying to create new talent pools and research hubs. The bill requires certain funding opportunities to consider existing UAS research, expertise, and talent when evaluating investments. Assessing state preparedness for [drone commerce](#) and previous drone initiatives such as the FAA's [BEYOND](#) program should be considered when evaluating applications for funding.

Rather than engage in [protectionism](#), government and industry should look to form relationships with firms in [allied](#) countries and [emerging](#) markets to bolster growing [advanced manufacturing](#) infrastructure and [private](#) R&D in the United States, and be [realistic](#) about what [components](#) can be sourced from China and which pose [real](#) security threats. The initiative office and agency administrators should study the experience of [BEYOND](#) participants, craft clear and broadly applicable benchmarks to measure investment outcomes, and focus on adding value when allocating funding.

In addition to investing in domestic STEM programs, [simplifying pathways](#) for foreign researchers and employees involved with UAS, AAM, and STEM initiatives to receive visas could [bolster](#) existing talent pools and [incentivize](#) domestic investment. Further, funding for public-private partnerships could be made available to firms in nations with whom the United States has existing trade agreements, or are [potential](#) strategic partners, such as [Japan](#), [India](#), [South Korea](#), [EU member states](#), and [Israel](#). Bolstering domestic talent pipelines with qualified foreign researchers as well as forging [strong relationships](#) with allies would serve the [commercial](#) and [national security](#) interests this bill attempts to promote.

Conclusion

Congress should explore available tools for promoting growth and innovation in UAS and AAM. These technologies represent a step toward the future for mobility, commerce, and everyday life for millions of Americans. The U.S. market for UAS is projected to [grow](#) exponentially, but unlocking the benefits requires thoughtful regulatory and policy action. The first step is ensuring regulatory clarity for operators regarding BVLOS requirements. Building a talent pipeline for drones and AAM is also critical, and if done thoughtfully, this bill could provide sustained and valuable investment in students and institutions. Legislators and administrators should be careful, however, to focus on providing general support rather than picking winners and losers.