

House Science, Space, and Technology Committee
Chairman Frank Lucas

NATIONAL DRONE AND ADVANCED AIR MOBILITY RESEARCH AND
DEVELOPMENT ACT

Section-by-Section

Section 1. Short Title; Table of Contents.

This section establishes a table of contents for the bill and establishes the short title of the bill as the “National Drone and Advanced Air Mobility Research and Development Act.”

Section 2. Findings.

This section contains Congressional findings, concerning unmanned aircraft systems (UAS), which have the potential to change and transform sectors of the U.S. economy through use in agriculture, public safety, fire detection, border security, weather forecasting, construction, and many other applications. Advanced Air Mobility (AAM) aims to transform the way people and goods are transported.

It finds that research, development, demonstration, testing, and evaluation of UAS and AAM systems are critical to understanding the capabilities and threats posed by unmanned aircraft systems. UAS and AAM are subject to safety, privacy, cybersecurity, and supply chain risks, particularly as most in the U.S. are manufactured or assembled using parts from foreign countries. The U.S. needs to invest in domestic manufacturing and secure supply chains of UAS and AAM to reduce reliance on foreign-made systems.

National and homeland security threats posed by UAS and AAM include criminal and terrorist use for espionage, surveillance, and intelligence gathering, smuggling drugs and contraband, and more.

There is a lack of voluntary consensus standards for UAS and AAM, and the federal government has an important role in advancing research, development, voluntary consensus standards, and education activities in UAS and AAM through coordination between state, local, federal, and tribal governments, academia, and private sectors.

Section 3. Definitions.

This section provides the meaning of terms used throughout the legislative text.

Section 4. Purposes.

The purpose of this act is to ensure U.S. leadership in UAS and AAM, as well as to maximize benefits and mitigate risks of such systems. This will be accomplished through supporting research and development; promoting development of facilities for UAS and AAM research, testing, and development; mitigating risks to supply chains, public safety, and national security;

preparing the present and future U.S. workforce for the integration of UAS and AAM across sectors of the economy; addressing basic research knowledge gaps; maximizing the benefits of UAS and AAM; increasing environmental observations and establishing a data management strategy for scientific data collected by UAS and AAM; improving interagency coordination of federal UAS research and development; promoting research and development collaboration among state, local, tribal, and federal governments, National Laboratories, industry and universities; promoting development of voluntary standards for UAS and AAM; supporting continued development of the AAM ecosystem.

Title I - Interagency Activities

Sec. 101. Interagency Working Group

This section establishes an interagency working group, comprised of NASA, DOT, NOAA, NSF, NIST, DHS and other appropriate federal agencies, to coordinate Federal research and development to enable UAS and AAM systems. This includes developing and implementing a strategic research plan that encompasses strategies to strengthen domestic UAS and AAM supply chains. As well as an assessment of the U.S. competitiveness in UAS and AAM including the scope and scale of R&D investments. The working group is also charged with the facilitation of communication and outreach opportunities as well as developing partnerships and other opportunities to leverage knowledge and other resources from other stakeholders, including academia, industry, and State, local, Tribal, and Federal government organizations. Additionally, the group will coordinate with other Federal departments and agencies to avoid duplication of activities as well as with the NSC to assess risks posed by the Federal UAS fleet and steps to mitigate these risks. This section also outlines the reports that the working group is responsible for developing and sending to Congress including an initial and biennial reports as well as a strategic research plan.

Sec. 102. Strategic Research Plan

This section requires the interagency working group to develop a strategic plan for Federal research, development, deployment, and testing of UAS and AAM. The plan will establish goals and priorities for Federal efforts for a 10-year period beginning in the year the plan is submitted. The National Academies of Science, Engineering, and Medicine shall review the plan every five years. Further, prior to submitting the plan to Congress, there must be a 60-day public comment period.

Sec. 103. Counter-UAS Research Plan

This section requires the interagency working group to develop a strategic plan for Federal research, development, evaluation, and testing of counter-UAS and detection systems, consistent with counter-UAS legal authorities. The plan will establish goals and priorities for Federal efforts for a 10-year period beginning in the year the plan is submitted.

Sec. 104. National Drone Technology Center

Subject to the availability of appropriations, this section directs the Secretary of Commerce, in collaboration with the Secretary of Defense, the Department of Transportation, and the heads of other Federal agencies, as appropriate, to establish a national drone technology center to conduct UAS R&D to strengthen the economic competitiveness and security of domestic supply chains. This includes R&D on manufacturing, design, and components; prototyping that strengthens the entire domestic ecosystem; and develops strategies for job creation, skills development, and workforce training for high-quality jobs. The center is intended to be a public-private sector consortium with participation from the private sector and NIST.

Sec. 105. GAO Study on Foreign Drones

This section directs the Comptroller General to conduct a study on the use of foreign-made UAS in the Federal government and submit a report to Congress within one year of the Acts enactment on their findings.

Title II - National Drone and Advanced Air Mobility Research Institutes

Sec. 201. National Drone and Advanced Air Mobility Research Institutes

This section authorizes the NASA Administrator to establish a program to award financial assistance for planning, establishment, and support of a network of institutes for UAS and AAM research. Institutes may focus on any relevant implications or challenges to the research, development, testing, or application of UAS and AAM in different sectors. Institutes will support and coordinate interdisciplinary research and development and education activities at all levels, will establish a robust data management strategy, and will support workforce development in UAS- and AAM-related disciplines.

Funding provided by federal agencies for the Institutes may be used to manage researchers; develop and manage UAS test sites; conduct research, development, and education activities involving UAS and AAM; provide access to resources and technical assistance relevant to the institute's research goals; support the purpose of UAS and AAM software; engage in outreach to broaden participation in UAS and AAM research; support artificial intelligence and machine learning research related to UAS and AAM and other activities that contribute to fulfilling the funding agency's missions.

The award for financial assistance will be issued for an initial period of up to 5 years but established institutes may apply for extended funding for up to 5 years. Additionally, funding will be awarded based on a competitive merit review process.

Title III – National Institute of Standards and Technology Activities

Sec. 301. National Institute of Standards and Technology Activities

This section directs the Director of the National Institute of Standards and Technology (NIST) to support and coordinate the development of voluntary consensus standards for UAS with other necessary federal agencies; support one or more National Drone and Advanced Air Mobility

Research Institute; produce and prioritize data for high-value UAS and AAM research; and coordinate with other stakeholders in furtherance of the purposes of the Act. Pursuant to appropriations, the Director of NIST will carry out a competitive program to award prizes to stimulate research and development of innovative UAS and AAM technologies.

Sec. 302. National Institute of Standards and Technology Manufacturing Activities

This section amends The National Institute of Standards and Technology (NIST) Act to include supporting domestic manufacturing of critical and emerging technologies as part of the Manufacturing Extension Partnership expansion awards program. This section also directs NIST to select UAS as the initial topic of an expansion awards pilot program.

To understand the manufacturing capabilities in the U.S. the Director will conduct a survey of Manufacturing Extension Partnership Centers no later than a year from the establishment of the Act. The Manufacturing USA program is also updated to include UAS manufacturing R&D.

Title IV – National Science Foundation Activities

Sec. 401. National Science Foundation Activities

This section directs the director of the National Science Foundation (NSF) to support research and STEM education and related activities in UAS and AAM. As part of the initiative, NSF will support fundamental research on the underlying technologies, R&D on UAS- and AAM-enabled uses, data modeling of uses, security, and ethical uses of UAS. The agency will support middle and high-school-level STEM education research and related activities relevant to UAS and AAM related technologies and support undergraduate and graduate education and workforce development research and related activities. The NSF director will also be charged with supporting public-private partnerships to support domestic development and address pre-competitive industry challenges.

Title V – National Aeronautics and Space Administration Activities

Sec. 501. National Aeronautics and Space Administration Activities

This section directs the Administrator of the National Aeronautics and Space Administration (NASA), in consultation with the Administrator of the Federal Aviation Administration (FAA), to carry out research and development to facilitate the safe integration of UAS and AAM into the National Airspace System (NAS). NASA is also directed to inform the development of voluntary standards to facilitate the incorporation of UAS and AAM systems into the NAS.

Sec. 502. National Student Unmanned Aircraft Systems Competition Program

This section directs the Administrator of the National Aeronautics and Space Administration (NASA) to lead a national pilot program for UAS technology competitions for students at the high school and undergraduate levels in which students will design, create, and demonstrate UAS. The Administrator shall award a grant to a nonprofit organization, an institution of higher education, or a consortium thereof, to administer the pilot program.

Title VI – Department of Energy Activities

Sec. 601. Department of Energy Research Activities

This section directs the Secretary of Energy to carry out a cross-cutting research, development, and demonstration program to advance UAS technologies, capabilities, and workforce needs to improve the reliability of the use of UAS in ways relevant to the mission of the Department of Energy (DOE). In carrying out these activities, the DOE shall provide research experience and training for undergraduate and graduate students and formulate goals for UAS research activities. The Secretary of Energy will award financial assistance to eligible entities to carry out research, development, and demonstration projects from subject areas including fundamental science and technology area as well as approaches for leveraging UAS for diverse applications. This will also include making DOE facilities available to eligible entities and supporting technology transfer to industry through partnerships.

Title VII – Department of Homeland Security Activities

Sec. 701. Department of Homeland Security Activities

This section directs the Secretary of the Department of Homeland Security, acting through the Under Secretary for Science and Technology, in coordination with the Federal Aviation Administration and heads of other relevant Federal agencies, to support research, development, evaluation, and testing of UAS, AAM, and counter-UAS systems and detection systems.

It also directs the Secretary to establish a center of excellence to carry out research and development activities to support and advance counter-UAS capabilities. The Secretary will select a higher education institution to host and maintain the center of excellence and carry out the fundamental research, evaluation, education, workforce development, and training efforts related to counter-UAS systems subject areas relevant to the Department of Homeland Security.

Title VIII - National Oceanic and Atmospheric Administration Activities

Sec. 801. National Oceanic and Atmospheric Administration Research and Development

This section directs the Administrator of the National Oceanic and Atmospheric Administration (NOAA) to carry out and support research, development, and demonstration activities to advance UAS technologies and capabilities and to enhance the deployment of UAS and relevant to the mission of NOAA. In particular, the Administrator shall prioritize activities that increase the Administration's operational use of unmanned aircraft systems by extending the range of times, location, and conditions in which observations can be made at lower cost. The Administrator is also responsible for coordinating NOAA's activities with other Federal departments and agencies, research communities, nongovernmental organizations, and industry stakeholders through the interagency committee.

In carrying out these activities, NOAA will award financial assistance to eligible entities for projects on the use of UAS to collect environmental data and monitor climate impacts including weather forecasting, rapid flood mapping, enhanced atmospheric monitoring, marine mammal

detection, harmful algal bloom measurements, navigation safety, wildfire observations, and other areas related to science and stewardship of any areas NOAA deems necessary and appropriate.

Title IX – Federal Aviation Administration Activities

Sec. 901. Federal Aviation Administration Research and Development

This section directs the Federal Aviation Administration (FAA) to coordinate with the National Aeronautics and Space Administration (NASA) and other agencies to carry out and support research, development, testing, and demonstration activities to advance UAS and AAM and to facilitate the safe integration of UAS and AAM into the national airspace system. This includes research on approaches to evaluating risk in emerging vehicles, technologies, and operations for unmanned aircraft systems and advanced air mobility systems.

As part of these activities, the FAA will conduct comprehensive research and testing for UAS and AAM safety and risks and report to the House Committee on Science Space and Technology and the Senate Committee on Commerce Science and Transportation to summarize the results of the research.

Sec. 902. Partnerships for Research, Development, Demonstration, and Testing

This section directs the Federal Aviation Administration (FAA) Administrator to enter into an arrangement with the National Academy of Public Administration to examine Administration research, development, demonstration, and testing partnerships to advance UAS and AAM and to facilitate the safe integration of UAS into the national airspace system

Sec. 903. UAS Test Ranges and Operations

This section amends Title 49 U.S.C. by extending sunsets for UAS test ranges and special authorities for certain unmanned aircraft systems to 2028. This section also adds UAS traffic management, AAM concepts in controlled airspace, verification and validation, and cybersecurity for UAS test range programming. This section also adds reporting requirements for waivers and implementation for UAS test ranges and special authorities for certain UAS.

Sec. 904. Authorization of Appropriations

This section lists the funds authorized to be appropriated to the Federal Aviation Administration to carry out UAS research and development activities from 2024-2028.

Sec. 905. Definitions

This section provides the meaning of terms used throughout Title 9.

Title X – Limitation

Sec. 1001. Limitation

This section provides limitations on how the funds authorized to be appropriated by this act may be used, as well as the conditions under which the limitations can be waived.