# Communications and Information Technology Alert

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## Communications and Information Technology Alert: Drones and Urban Air Mobility in the President's Budget

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President Trump recently released his federal budget proposal for Fiscal Year (FY) 2020. The President's budget is always a helpful tool to identify what the administration's policy priorities are and what we might expect to see finalized through the congressional appropriations process.

Digging into some of those documents, we have highlighted some of the proposed financial resources that the Department of Transportation (DOT), the Federal Aviation Administration (FAA), and the National Aeronautics and Space Administration (NASA) are asking for to help them move along integration of unmanned aircraft systems (UAS) into the National Airspace System (NAS) and help make urban air mobility (UAM) a reality. Specific programs and initiatives include development of a UAS Traffic Management system, research on UAS threats to aviation safety and UAM demonstrations.

For a deeper dive into some UAS and UAM specifics, here are some excerpts from the DOT, FAA, and NASA FY2020 budget documents:

U.S. DOT Budget Highlights 2020

Innovation

Unmanned Aircraft Systems (UAS) Integration Pilot Program (IPP): DOT has established a UAS IPP, with 10 local governments and private partners to gather data for safely advancing beyond-line-of-sight operations over people and package deliveries in selected jurisdictions and to determine future "rules of the road" for time, place and manner of drone operations. The Secretary of Transportation announced the selection of 10 state, local and tribal governments as participants in the UAS IPP. First announced last October, this White House initiative partners the FAA with local, state and tribal governments, which then partners with private industry to safely explore the further integration of drone operations.

Low Altitude Authorization and Notification Capability (LAANC): The FAA collaborated with industry to deploy an automated system known as "LAANC," which is used to process airspace authorizations for small UAS operators nationwide. LAANC was

deployed at nearly 300 air traffic control facilities covering approximately 500 airports. As of October 1, 2018, more than 35,000 authorizations have been granted in controlled airspace using this capability.

Unmanned Aircraft Systems

UAS technology represents the fastest-growing sector in aviation today. UAS, more commonly referred to as "drones," are being used every day to inspect infrastructure, provide emergency response support, survey agriculture and go to places that are otherwise dangerous for people or other vehicles. Entrepreneurs around the world are exploring innovative ways to use drones in their commercial activities. As a result, the FAA must develop the most efficient, effective and safe ways to integrate UAS into the NAS. This goal must also include a robust security framework to support the full integration of this technology into our aviation system.

The FY 2020 President's Budget request includes $202.6 million for:

- The Unmanned Air Traffic Management System, which will pair with the traditional Air Traffic Management System;

- Remote Identification of UAS—which will provide more accurate and critical data about who is flying where and their intentions;

- Funding for staff to review and approve applications, maintain the IT system and pursue continued development of safety standards;

- Training and outreach activities;

- Research on UAS technologies that directly impact safety of the NAS and that will cover UAS-specific technical issues, such as integrations of UAS-NextGen systems, detect-and-avoid systems, and communications with air traffic control; and,

- Research data that will generate technical information for the development of policies and guidance materials and provide risk and threat analysis to support FAA decision making on emerging UAS threats to aviation safety.

FAA Operations

Unmanned Aircraft Systems (UAS): To safely integrate UAS into our nation's busy airspace, $63.1 million, an increase of $12 million, is requested. This effort spans offices across the agency, including the Air Traffic Organization; Aviation Safety, Security and Hazardous Materials Safety; Communications; and Policy, International Affairs & Environment.

FAA Facilities & Equipment

Unmanned Aircraft Systems (UAS: To help develop an Unmanned Traffic Management system, a separate but complementary system to the Air Traffic Management system, $130.8 million is requested. This investment will include development of technology to track approved UAS flight plans, development of technology to distinguish UAS operators with approved flight plans from those that do not, evaluation of technology that will support smart collection and dissemination of data to Unmanned Traffic System service providers, and cybersecurity and data integrity work for UAS networks.

Unmanned Aircraft Systems (UAS: To study safety implications of new UAS operational concepts and technologies, and to support the development of new, and modification of existing, regulatory standards, $7.5 million is requested. This UAS research will focus on the areas of control and communications, training devices, and detection-and-avoidance technologies.

NASA FY 2020 Mission Fact Sheets

Aeronautics

Airspace Operations and Safety Program – $121.2 million

The Airspace Operations and Safety Program (AOSP) works in close partnership with the FAA and the aviation community to enable modernization and transformation of the NAS to meet evolving user needs. The program is on the leading edge of research into increasingly autonomous aviation systems, including innovation in the management of UAS traffic at low altitude and other novel aviation vehicles. The program is also pioneering the real-time integration and analysis of data to support systemwide safety assurance. In FY 2020, AOSP will:

- Complete a series of air traffic management demonstrations with the FAA, airlines and airports that validate new capabilities that improve airport operating efficiency and complete the UAS Traffic Management Project to enable safe operations of small UAS at low altitude.

- Start a new Advanced Air Mobility project to enable the emergence of UAM beginning with a series of demonstrations that will assess the maturity of key technologies.

Safety, Security and Mission Services

Safety and Mission Success – $192 million

Agency Management and Operations fund the management and oversight of agency programs and functions, and performance of NASA-wide mission support activities, including the following:

- Safety and Mission Success activities help reduce the risk and loss of life and/or mission in our manned and unmanned programs. The activities include engineering, safety and mission assurance, independent health and medical oversight, and independent software verification and validation.

This budget serves as a positive indicator that decision-makers within the administration remain committed to advancing UAS integration and understand the need to help facilitate the revolution of UAM. Of course, the challenge of working the appropriations process through a two-party majority in Congress to line up with the President's request is another matter unto itself. With that said, hopes remain high that there will be bipartisan support around UAS and UAM issues and on giving the departments and agencies the financial resources that they need to support this aviation and high-tech innovation.

Federal Aviation Administration Budget Estimates Fiscal Year 2020

## Operations

The budget request includes almost $21 million for targeted investments that will improve the FAA's ability to respond to industry innovation. This total includes $1.6 million for a new Office of Innovation that will quickly bring new viable innovations from the aviation industry into full operation in our national airspace system. The office will examine the impact of new technologies developed by industry on our national airspace, assess their likely benefits, and develop methods for safely integrating these technologies into existing operations. The Office of Innovation will also provide leadership to engage with industry and to facilitate collaboration among FAA lines of business.

The total request for innovative investments also includes an increase of $12 million for activities across the agency to safely integrate UAS into our national airspace, as well as an increase of $2 million for efforts to speed the processing of licenses and approvals, streamline regulatory requirements for commercial space activities, and keep pace with industry demands for products and services.

## Facilities & Equipment (F&E)

The integration of both UAS and commercial space into the national airspace is also reflected in the F&E budget request. For UAS, $126.8 million is included to help develop a UAS Traffic Management system, a separate but complementary system to the Air Traffic Management system. This investment will include the evaluation of technology to track both cooperative and non-cooperative targets, the evaluation of technology that will support smart collection and dissemination of data to Unmanned Traffic System service providers, and cyber security and data integrity work for UAS networks. For commercial space, $33.0 million is requested to allow the FAA to automate launch and reentry operations that are currently manual in nature, time consuming, and require vast sections of commercial airspace to be closed off. An automated system will safely reduce the amount of airspace that must be closed to other users, and build the foundation for integrating commercial space operations into the national airspace.

## Research, Engineering & Development

The budget request includes a total of $86.8 million for research in essential safety areas, including $6 million to investigate improvements for the safe integration of commercial space operations into the national airspace, and another $7.5 million for safety research related to UAS. The UAS funding will be used to study the safety implications of new UAS operational concepts and technologies, and to support the new regulatory standards. The UAS research will focus on the areas of control and communications, training devices, and detection and avoidance technologies. Other safety-related research areas include advanced materials, aircraft icing, continued airworthiness, and information security.

## Grants-in-Aid for Airports

The budget request includes $33.2 million for the Airport Technology Research program to support the safe and efficient integration of new and innovative technologies into the airport environment. Examples of research areas include new

airfield lighting using LED technology, ways to reduce or eliminate harmful chemicals in firefighting agents, safe UAS operations at airports, runway condition monitoring using radar, new pavement materials to make airport pavements last longer, and wireless sensors to monitor pavement health. The budget also includes $15 million for the Airport Cooperative Research program. The FAA provides oversight and expertise for projects in areas such as commercial space noise measurements, UAS operation at airports, safe construction practices, and emergency communications models.

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Operations – Aviation Safety (AVS)

Unmanned Aircraft Systems Integration - $29.59M: Office of Unmanned Aircraft Systems Integration (AUS) is responsible for facilitating the safe, efficient, and timely integration of UAS into the NAS. AUS manages and coordinates international activities for UAS within FAA, aligning UAS international activities with foreign civil aviation authorities. Its functions include:

- Facilitating development of operating concepts, policies, requirements, criteria and procedures for new system evaluations, integration and implementation of emerging UAS technologies

- Overseeing all FAA UAS research and development initiatives

- Managing special programs including UAS Pathfinder and Airport Detection initiatives, UAS exemption program, UAS Test Site oversight and rulemaking efforts

- Facilitating the development and implementation of FAA's UAS Strategic Plan, and

- Advancing education and outreach to UAS stakeholders and the public to enhance operational safety and public awareness

In FY 2018, AUS stood up the UAS IPP creating an opportunity for state, local, and tribal governments to partner with private sector entities, such as UAS operators or manufacturers, to accelerate safe UAS integration. The program will help the DOT and FAA craft new enabling rules by:

- Identifying ways to balance local and national interests related to UAS integration

- Improving communication with local, state and tribal jurisdictions

- Addressing security and privacy risks

- Accelerating the approval of operations that currently require special authorizations

Program Increase for UAS: AVS is requesting $4.15 million to support the continued state, local and tribal projects through IPP, and the projected increase in Partnerships for Integration Program (PIPs), formerly Partnerships for Safety Plan (PSP) applicants. This increase will also support the rulemaking activities needed to enable UAS integration into the NAS, to assist in rulemaking, and to expedite the processing of requests from industry. This will ensure that the FAA is able to meet the demand in this rapidly growing and changing industry as new information is gained and new operations are authorized.

Operations – Security and Hazardous Materials Safety (ASH)

Program Increase for Unmanned Aircraft Systems ($3.0 million):

ASH is requesting $3.0 million to build a robust security framework that supports full integration of UAS into the NAS and address the transportation of hazardous materials by UAS. This increase is required to coordinate and manage UAS intelligence and security activities, and activities necessary to integrate commercial delivery of hazardous materials and cargo by UASs into the NAS. This a new mission and will be focused on the security and safety challenges posed by the integration of UAS into the National Airspace System.

A staff will be established to support counter-UAS activities across the whole of government. These activities include new rulemaking within FAA; monitoring intelligence activities overseas; close coordination with interagency partners to develop national policies and site-specific procedures for counter-UAS activities; development of standards for use of counter-UAS systems in the NAS; and numerous outreach and educational presentations across the nation. Estimates include office space and related costs and travel (conferences, military installations, UAS test activities, site visits to IPP locations etc.).

Operations – Staff Offices

Program Increase for Unmanned Aircraft Systems:

The Office of the Chief Counsel is requesting $500,000 for UAS personnel expenses. This funding would allow the office to handle the additional influx of UAS administrative enforcement cases stemming from new authorities contained in the FAA's 2018 Reauthorization. Additional staff will enable FAA to coordinate with Department of Transportation Inspector General, Department of Justice, and local Assistant U.S. Attorney Offices on criminal enforcement cases. It will also allow better coordination with local and state agencies to address possible illegal operations and increase public and industry awareness of our Regulations and Enforcement Practices.

The Office of Policy, International Affairs, and Environment is requesting $750,000 to meet the increased demand for new rulemaking, regulatory analysis and research, the completion of a full-scale production UAS survey, continued enhancement of UAS trend forecast through development of a UAS National forecast, and the implementation of the Presidential Memorandum regarding the UAS IPP.

For more details and the broader DOT, FAA, and NASA FY 2020 budget requests, you can find the complete documents here:

U.S. DOT Budget Highlights 2020

NASA FY 2020 Mission Fact Sheets

Federal Aviation Administration Budget Estimates Fiscal Year 2020

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