

**PROGRAM CHARTER FOR
THE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION (NOAA)
UNMANNED AIRCRAFT SYSTEMS (UAS) PROGRAM**

EXECUTIVE SUMMARY

Numerous legislative acts call for the advancement of technologies to better observe, understand, and anticipate changes in climate, weather, oceans, and coasts; and to better monitor and manage marine resources. These requirements drive the National Oceanic and Atmospheric Administration (NOAA) to develop optimized observing strategies utilizing innovative observing systems and products that can address critical information needs or gaps. NOAA strives to develop systems that can be operated safely and feasibly with cost-effective life-cycle support and that can maximize cross-cutting benefits to the NOAA mission.

NOAA's mission recognizes the importance of earth observations to the NOAA mission of science, service, and stewardship. Accordingly, the necessity for more reliable, accurate, and integrated earth observations for NOAA's Enterprise Science and Technology is recognized along with emerging requirements for new observations that greatly exceed the capacity of current NOAA observing assets. Thus, there is a critical need to maintain the balance of observation continuity while implementing efficient emerging technologies. The NGSP specifically recognizes unmanned air and water vehicles as emerging capabilities, which can strengthen NOAA's observation of hard-to-reach regions of the Earth such as the Arctic and remote ocean areas.

The NOAA UAS Program was established to examine innovative UAS technologies and observations, to incubate select UAS applications beneficial to the NOAA mission, and to integrate UAS observing strategies into the NOAA research and operational Earth observing framework. The NOAA UAS Program will evaluate the feasibility of UAS technologies to address the NOAA mission using a requirements-based systems approach in partnership with the Office of Marine and Aviation Operations and the NOAA Line Offices. The NOAA UAS Program will be managed by the Office of Oceanic and Atmospheric Research.

PROGRAM VISION

UAS observations will become an essential component of the NOAA observing system by augmenting critical observations from satellites, ships, aircraft, balloons, and surface-based sensors to contribute to the environmental intelligence needed by our Nation and the world.

PROGRAM ROLES

The key roles of the NOAA UAS Program are to:

- Serve as the NOAA subject matter experts for UAS technology and observations to provide a resource to support effective NOAA UAS investments and applications
- Assist with the research, development, demonstration, evaluation, and transition to application of selected UAS observing strategies that can provide significantly improved or more efficient observing capabilities or safer observing operations for the NOAA observing system.

PROGRAM RESPONSIBILITIES

The NOAA UAS Program will provide consultation to Line Offices as needed and work with Line Office representatives and cross-agency advisory groups to identify high priority areas meriting investment of significant Program resources. The NOAA UAS Program will evaluate the feasibility of UAS observing strategies to address the NOAA mission using a requirements-based systems approach. This includes: seeking input on NOAA observing gaps and priorities from Line Office representatives and cross-agency advisory groups, conducting market trade studies of UAS observing systems, developing and demonstrating, evaluating UAS observing strategies that will address NOAA observing gaps, and assisting with transition of select UAS observing strategies into NOAA science research or operational applications.

The NOAA UAS Program will directly support the NOAA mission goals by identifying, developing, evaluating, and transitioning observations that can provide significantly improved or more efficient observing capabilities or safer observing operations for the NOAA observing system supporting the NOAA mission of science, service, and stewardship. The NOAA UAS Program will target UAS technologies and observations,

which provide measurable progress towards the achievement of the NOAA long-term goals of:

- Climate Adaptation and Mitigation - An informed society anticipating and responding to climate and its impacts
- Weather-Ready Nation - Society is prepared for and responds to weather-related events
- Healthy Oceans - Marine fisheries, habitats, and biodiversity are sustained within healthy and productive ecosystems
- Resilient Coastal Communities and Economies - Coastal and Great Lakes communities are environmentally and economically sustainable.

PROGRAM STAKEHOLDERS AND PARTNERSHIPS

INTERNAL NOAA STAKEHOLDERS

CORPORATE, LINE, AND STAFF OFFICES AND LEADERSHIP COUNCILS

The NOAA UAS Program will respect the roles and responsibilities of NOAA Corporate, Line and Staff Offices and leadership Councils and will seek input on program priorities and feedback on program directions. The UAS Program will also coordinate with NOAA Line Offices and thematic advisory groups who may identify specific needs and priorities for NOAA mission goals.

NOAA UNMANNED SYSTEMS (UXS) STEERING COMMITTEE

The NOAA UAS Program will collaborate with the NOAA UxS Steering Committee who may provide recommendations or identify corporate priorities for unmanned, autonomous, robotic, and remotely piloted observing systems to meet NOAA observing needs or gaps.

NOAA TECHNOLOGY, PLANNING, AND INTEGRATION FOR OBSERVATIONS PROGRAM

The NOAA UAS Program will coordinate UAS observing and performance requirements with the NOAA Technology, Planning, and Integration for Observations Program (TPIO). The NOAA TPIO will assist the NOAA UAS Program with verification and validation of these requirements by disseminating information from the NOAA Consolidated Observation Requirement List, the NOAA Observing System Portfolio Analysis, the NOAA Observing System Architecture, and the Information Management System Inventory and the Global Earth Observation-Integrated Data Environment.

NOAA OFFICE OF MARINE AND AVIATION OPERATIONS

The NOAA UAS Program will coordinate with OMAO to ensure all program-funded UAS flight demonstration and transition activities are evaluated for safety and operational feasibility before implementation.

OMAO is responsible for the safe and efficient operation and maintenance of UAS in accordance with NOAA Policy for Management and Utilization of Aircraft (NAO 216-104).

EXTERNAL NOAA PARTERSHIPS

FEDERAL AGENCIES AND INTERAGENCY UAS WORKING GROUPS

The NOAA UAS Program will seek and share with other Federal agencies the lessons learned in the research, development, demonstration, evaluation and transition of UAS observing strategies. Collaboration with other Federal agencies and interagency UAS working groups will be used to take advantage of economies of scale and avoid duplication of effort.

PRIVATE INDUSTRY AND ACADEMIA

The NOAA UAS Program will solicit UAS technology information and proposal ideas from private industry and academia to ensure UAS observing strategies are state-of-art, safe, feasible, and cost-effective for NOAA research and operational applications. Private industry and academia will assist the NOAA UAS Program in identifying promising UAS technologies and observations suitable to serve the NOAA mission and in incubating the technology readiness of UAS technologies and observations for transitioning into routine research and operational application.

INTERNATIONAL PARTNERS

The NOAA UAS Program will collaborate with international UAS working groups to coordinate and advocate the utilization of UAS for scientific observation. The NOAA UAS Program will assist NOAA in jointly collecting and sharing UAS observations with international partners pertaining to science topics of international interest and concern