



REDAC NAS Operations Subcommittee

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Spring 2020

NAS Ops Subcommittee – Spring 2020 Meeting

- **March 24 – 25, successful virtual meeting using WebEx**
- **Agenda**
 - **Budget overview**
 - **Intro to NAS 2035 Vision**
 - **New Air Traffic Management Requirements; Enterprise Concept Development**
 - **Runway Incursion Reduction**
 - **Enterprise Human Factors; ATC / Technical Operations Human Factors**
 - **Operation Concept Validation and Infrastructure**
 - **Weather Program; Weather Technology in the Cockpit**
 - **Wake Turbulence**
 - **Flight Deck Data Exchange Requirements**
 - **Deep dives**
 - **ASSURE COE Research on UAS Safety Assessment and Integration into the NAS**
 - **Launch Vehicle to Aircraft Trajectory Separation Management Development and Deployment Strategy**

NAS Ops Subcommittee – Spring 2020 Finding and Recommendation Summary

- 1. Ensure broad stakeholder involvement in development of the NAS 2035 Vision**
- 2. Provide a means to share data generated through the ASSURE UAS COE with the broader research community**

Finding 1

- In 2015, FAA and NASA led an analysis to characterize a range of potential future environments resulting in “NAS Horizons” report. Effort included interviews with more than 80 leaders and strategic thinkers from government, research organizations, and industry
- FAA NextGen Organization is now developing a NAS 2035 Vision document
 - Transition to performance-based operations, managing new entrants, leveraging advances in vehicle performance, datacomm, analytics, and information system technologies
- This vision represents a transformation of the current NAS that will lead to a significantly different future system that will impact a growing set of aerospace system stakeholders. This vision will also enable the more rapid introduction of industry-provided services and technologies to the NAS.
- A preliminary 2035 vision is currently being drafted by MITRE CAASD to be completed in March 2020. Following refinement and an FAA-internal review, the final 2035 vision anticipated to be delivered as an FAA product at the end of CY2020.

Recommendation 1

- Given the broad implications of a transition of the NAS toward 2035, involving an increasingly complex web of vehicle types, operational models, and industry involvement and provision of services ... **the FAA should continue to engage with the wider aerospace community while shaping their 2035 vision.**
- **A failure to engage stakeholders early in the process may lead to a vision that does not align with user needs or which may not take advantage of external trends and opportunities.** The subcommittee recommends that the community engagement process described in the 2011 REDAC Culture Change study be adopted. The study stated that *“NextGen operational transformation involves diverse stakeholder communities, all of which must be fully engaged and have a shared vision of NextGen. The common vision must be shared by the stakeholder communities, and critically, it must be a vision of shared interest and shared responsibility among the stakeholders... Successful transformation requires stakeholders to synchronize their implementation activities with those of other stakeholders. This synchronization is key to success and can only result from a shared vision of NextGen implementation. **An environment that encourages and avidly supports community engagement to determine a collaborative shared vision of and a collaborative plan for NextGen will result in a trusted partnership with industry for NextGen implementation.**”*

Finding 2

- The ASSURE COE includes an effort focused on developing a schema for data collection across a wide range of UAS operations and test activities, including defining metadata and other structures to aid in organizing and applying the collected information in an effective manner.
- This effort will lead to a very rich set of UAS-specific data including vehicle performance, traffic encounter characteristics, weather and environmental impacts, surveillance and navigation, and command and control system performance.
- Given the rapid pace of UAS development and the wide variety of open research issues that need to be resolved to enable their safe and efficient operation, providing access to the datasets generated through the ASSURE activity would have great value to the larger research community.
- During the discussion, the presenter agreed with the subcommittee that enabling open access to UAS data would benefit the FAA and the external community in pursuing research and development.

Recommendation 2

- The FAA should expand the ASSURE effort to provide a means for storing and accessing the growing sets of UAS-related data and make those data, whenever possible (i.e., not restricted due to proprietary or other concerns), openly available to the outside research community.
- As part of this effort, a data access clearinghouse capability (including associated schemas, data storage, and data exchange interfaces) should be developed that would enable researchers to identify and access data and then share results.
- The NAS Ops subcommittee believes that providing these data in this way would enable the FAA to leverage the significantly-larger external UAS community beyond ASSURE, resulting in more rapid innovation and resolution of research issues than would otherwise be possible.

Next NAS Ops Meeting: 1-2 September 2020

- **Requested documents prior to Fall 2020 meeting**
 - ✓ **UTM Conops 2.0**
 - ✓ **FAA Cyber Research and Development Plan**
 - **Commercial Space Concept of Operations**
- **Requested topics for inclusion in the Fall 2020 agenda**
 - **NAS 2035 Vision (FAA or MITRE)**
 - **Status of NASA development of a NAS 2045 Vision (NASA)**
 - **From the Enterprise Concepts portfolio: more information on the ETM Concept of Operations; ETM/UTM/ATM Cross Dependencies Analysis; and UAM Integrated Research Planning (FAA)**
 - **Overview of the FAA's various cyber R&D activities including flight deck, ground systems, and broader aviation ecosystem**
 - **Request that the A11.j Weather Program briefing include details on their new weather research requirements process reviewing what requirements have been entered in their system and how those requirements have been prioritized in the future R&D portfolio.**