

Questions to Guide Presentation Development

Session 1 – Unmanned Aircraft System Applications for Environmental Research and Monitoring

The use of Unmanned Aircraft Systems (UASs) has the potential to substantially contribute to U.S. scientific research and operational forecasting by enabling the collection of atmospheric, oceanic, and remote land data in ways either not possible, or not prudent, by manned aircraft or other systems.

This session will describe the UAS activities and interests of federal government agencies; explore their needs, requirements, and priorities; and identify gaps and leveraging opportunities.

1. What has your agency done to explore, develop, and/or use Unmanned Aircraft Systems (UAS) for environmental monitoring for research or operational use?
2. What are the capabilities of UAS platforms that are available for use or planned for acquisition?
3. What environmental data could UASs provide that would address your agency's unmet observing requirements?
4. How do you see UAS capabilities fitting in with other unmanned systems like Autonomous Underwater Vehicles (AUV), Unmanned Surface Vehicles (USV), and Lagrangian platforms?
5. How do you see UAS capabilities fitting in with environmental satellites, radiosondes/rawinsondes, and manned weather reconnaissance aircraft?

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Session 2: Challenges to the Development and Use of UASs for Environmental Monitoring

Full utilization of civil UASs is currently limited by several challenges, including securing sufficient resources, developing and approving standards for UAS operations, routine access to the National Airspace System, sustaining UAS infrastructure, and training. Our ability to address these and other challenges will determine the long-term effectiveness of UASs for environmental monitoring.

This session will review the key challenges to fully utilizing UASs for research and operational environmental monitoring.

1. What gaps exist between current or planned UAS capabilities and a desired “end state” employment of UAS for environmental monitoring?
2. What environmental impact and safety issues have you encountered or anticipated in UAS operations?
3. What are the national airspace access challenges and the prospects and processes to achieve appropriate access? Today and in the future airspace system?
4. What acquisition strategies and timelines have you pursued in the development of UAS environmental sensing capabilities? What lessons learned can be passed to other agencies? What would work best in developing a nationally coordinated capability?
5. How have you secured and protected funding lines for UAS development, operations, and maintenance? What lessons learned can be passed to other agencies or a coordinated national effort?
6. What data standards and data exchange protocols have you applied to UAS observations? What are the problems you have encountered or anticipate? What lessons learned can be passed to other agencies?
7. What information technology and information system security issues need to be considered? What lessons learned can you share?

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Session 3: Interagency Coordination and Strategic Planning for the Use of UASs to Support Environmental Monitoring

Several U.S. civil government agencies have UAS programs or plans and other agencies have potential applications, but we lack broad awareness of capabilities, needs, requirements, and priorities and an associated awareness of gaps and leveraging opportunities. Improved coordination among U.S. government agencies would increase the effectiveness and efficiency of UAS environmental monitoring operations and planning and maximize the national investment in these capabilities.

This session will explore efforts to coordinate the use of UASs across the federal government and how this coordination may be improved.

1. How can we best leverage or jointly operate UAS missions in support of multiple agency needs?
2. What efforts are planned or underway to coordinate federal UAS activities?
3. How can the nation best coordinate the use of UASs for environmental research and operational services?
4. What strategic and/or implementation planning activities for UAS development and utilization are ongoing or planned? What are the potential benefits of a national strategy?
5. How can a national strategy support agency acquisition, operation, and maintenance of UASs?
6. What federal or national data standards and data exchange standards or protocols are needed to maximize the use of UAS environmental data across user agencies? For the private and academic sectors?
7. How should UASs fit into the Network of Weather and Climate Observing Networks initiative with the OFCM-sponsored Committee for Integrated Observing Systems?
8. What is the role of the international community in UAS planning, operations, and data exchange?

