**Office of the Federal Coordinator for Meteorological Services and Supporting Research**

**Exploratory Mini-Workshop**

# Utilization of Unmanned Aircraft Systems for Environmental Monitoring

# AGENDA

## February 4, 2011

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| 9:00 AM | Administrative Information | **Mr. Michael F. Bonadonna**<br>Senior Staff Meteorologist, OFCM |
| 9:05 AM | Welcome | **Mr. Samuel P. Williamson**<br>Federal Coordinator for Meteorology |

**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.*

**Facilitator: Mr. Rick Petty, Program Manager, Climate and Environmental Science Division, Office of Biological and Environmental Research, Dept. of Energy**

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| 9:15 AM | National Oceanic and Atmospheric Administration (NOAA)<br>UAS Program | **Ms. Robbie Hood**<br>UAS Program Manager<br>NOAA |
| 9:30 AM | National Aeronautics and Space Administration (NASA)<br>UAS Program | **Ms. Brenda Mulac**<br>UAS Program Lead<br>Goddard Space Flight Center NASA |
| 9:45 AM | Department of Energy (DOE)<br>UAS Program | **Mr. Rick Petty**<br>Program Manager, Climate and Environmental Science Division, Office of Biological and Environmental Research, Dept. of Energy |
| 10:00 AM | U.S. Department of Agriculture (USDA)<br>U.S. Forest Service (USFS)<br>UAS Program | **Mr. Everett Hinkley**<br>National Remote Sensing Program Manager<br>U.S. Forest Service |
| 10:15 AM | U.S. Geological Survey (USGS)<br>UAS Program | **Mr. Michael Hutt**<br>UAS Program Manager<br>U.S. Geological Survey |
| 10:30 AM | **Session 1 Discussion** | |
| 11:30 AM | **LUNCH BREAK** | |

**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.*

**Facilitator: Mr. Michael F. Bonadonna,** Senior Staff Meteorologist, OFCM

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| 1:00 PM | Federal Aviation Administration (FAA)<br>UAS Policies and Procedures | **Mr. Randy Willis**<br>Air Traffic Control Specialist,<br>Unmanned Aircraft Systems Group,<br>Headquarters, FAA |
| 1:15 PM | Customs and Border Protection<br>UAS Program Lessons learned | **Mr. Tom Faller**<br>National Director, UAS Operations, U.S. Customs and Border Protection, Department of Homeland Security |
| 1:30 PM | U.S. Coast Guard<br>UAS Program Lessons Learned | **LCDR Jeffrey Vajda**<br>Unmanned Aircraft Systems<br>Joint Program Office<br>U.S. Coast Guard |
| 1:45 PM | USAF UAS Infrastructure and Training | **Lt Col Peter "Pepe" LeHew**, USAF<br>Deputy Director ISR Innovations<br>HQ USAF – A2 |
| 2:00 PM | U.S. Army<br>UAS Program Lessons Learned | **LTC Trey Kelley**<br>Chief External Programs,<br>Cooperative Programs Integration<br>Program Manager Unmanned Aircraft Systems<br>U.S. Army |
| 2:15 PM | **Session 2 Discussion** | |
| 3:00 PM | **BREAK (15 min)** | |

**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 awareness of associated 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.*

**Facilitator: Mr. Kim Curry, Deputy Technical Director, Oceanographer of the Navy**

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| 3:15 PM | NOAA Unmanned Systems Strategy | **Rear Admiral Philip M. Kenul**<br>Director, Marine and Aviation Operations Centers<br>NOAA |
| 3:30 PM | Interagency Working Group – Facilities and Infrastructure<br>Task Force for Unmanned Systems<br>(IWG-FI TFUS) | **Dr. Reginald Beach**<br>Senior Scientist<br>Office of Ocean Exploration and Research<br>NOAA |
| 3:45 PM | Collecting, Validating, and Documenting UAS Requirements for Environmental Monitoring | **Mr. Matt Lucas**<br>NOAA UAS Program Office<br>TriVector Services, Inc. |
| 4:00 PM | **Session 3 Discussion** | |
| 4:45 PM | **Mini-Workshop Wrap Up and Action Items** | **Mr. Michael F. Bonadonna**<br>Senior Staff Meteorologist, OFCM |
| 4:55 PM | **Closing Remarks** | **Mr. Michael Babcock**<br>Deputy Federal Coordinator for Meteorology |
| 5:00 PM | **ADJOURN** | |