

# INTERDEPARTMENTAL COMMITTEE FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH (ICMSSR)

## 2019-4 MEETING

**December 5, 1:00 p.m. EST**

SSMC 2, Room 7224  
1325 East West Highway; Silver Spring, MD 20910

<i>Members</i>	(T) via telecon	Agency
<i>William Bauman (Chair)</i>		DOT/FAA
<i>Michael Bonadonna (Vice Chair)</i>		OFCM
Nicole Kurkowski for <i>Louis Uccellini</i>		DOC/NOAA/NWS
Kandis Boyd for <i>Craig McLean</i>		DOC/OAR
<i>Ralph Stoffler</i>		DOD/USAF/A3W
<i>Bill Spendley(T)</i>		DOD/USA
CDR Kathryn Hermsdorfer for <i>Chris Ekstrom</i>		DOD/USN
<i>Rickey Petty (T)</i>		DOE
<i>John Vimont (T)</i>		DOI/NPS
<i>Jack Kaye</i>		NASA HQ/ESD
<i>David Chorney (T) (Executive Secretary)</i>		OFCM
Invited Participants		Agency
Sim James, Ken Barnett, James Simms		OFCM
Floyd Hauth (T)		OFCM STC
Vanessa Griffin, John Sokich		NOAA/NWS
Kate Becker		NOAA/NESDIS
Anjuli Bamzai (T)		NSF
Tsengdar Lee, Aaron Pina		NASA HQ
Tamara Battle		DOC/OAR
LtCol Rob Branham, Scott Van Blarcum, LtCol Adam Demarco, Ted Vroman		DOD/USAF

*Approved: 6 January 2020*

### 1. OPENING REMARKS.

Dr. William Bauman (FAA), ICMSSR Chair, and Mr. Mike Bonadonna, OFCM, ICMSSR Vice-Chair welcomed participants. Roll call was conducted for participants on-site and some using teleconference media. Members approved the agenda and the Record of Action (ROA) from the last ICMSSR meeting.

### 2. ACTION ITEMS.

The Executive Secretary (ES), David Chorney, gave an update on the currently open Action items.

- Action Item 2019-2-2, coordination is underway to resolve 1340 job standards with OPM and Action Item 2019-3-2 will be addressed in a conference in Feb 2020.

### 3. FEDERAL COORDINATOR'S UPDATE.

Mr. Michael Bonadonna, Federal Coordinator for Meteorology, presented a summary of key OFCM/Federal Weather Enterprise (FWE) coordination activities and plans.

- The FWE coordination infrastructure has added two JAGs since last meeting.
- Status of implementing the Weather Act of 2017: DOC/NOAA and OSTP General Counsel are reviewing the Charter. OFCM will provide a signature copy to NOAA and OSTP. The NOAA Chief of Staff is working to schedule the first ICAWS meeting in January 2020
- JAG for the US Weather Research Program (USWRP): Their purpose is to provide interagency input for the USWRP Implementation Plan mandated by the US Weather Research and Forecast Innovation Act of 2017. The JAG will provide coordinated interagency input for the report and deliver it to NOAA OAR for inclusion in the final Implementation Plan. JAG/USWRP-IP will meet in Jan 2020. Input will be provided by spring 2020 with a final draft in about 6 months.
- Interagency Arctic Region Environmental Services: OFCM hired Ms. Jen Pizza to handle Arctic region environmental service coordination and report back to the ICMSSR regularly. A one-day follow-up meeting to the 2019 Arctic Environmental Services workshop is tentatively planned for April 2020.
- Interagency Wildland Fire Weather Initiative: In light of new fire detection capabilities offered by GOES-16/17 and NOAA-20, there is a need to review and validate agency wildland fire weather roles and responsibilities, particularly as they relate to wildland fire detection, data analysis, product development, dissemination, and watch/warning/advisory responsibility. Following an internal NOAA meeting, OFCM has scheduled an interagency meeting during the last week in January, 2020.
- Status of the OPM 1340 Meteorologist Qualification Standard: The NOAA Administrator is tracking the status of action and will contact OPM if needed. OFCM will continue to report progress to ICMSSR.
- Federal Weather Coordination Session at the 2020 AMS Conference in Boston, MA, Tuesday, January 14, 2020, 08:30 AM -10:00 AM: Co-chairs are Michael Bonadonna and C. Sim James. Presentations are OFCM 101, Space Weather Coordination in the Federal Government; Committee for Operational Processing Centers; Federal Interagency Coordination for Arctic Research; Aerial Recon for Atmospheric Rivers and Winter Storms; and Operations Transition from Winter Storms Recon to Winter Seasons Recon.
- TCORF/IHC 2020: The 2020 Tropical Cyclone Operations and Research Forum/Inter-departmental Hurricane Conference (TCORF/IHC) will be hosted by the NOAA/Air Operations Center (AOC) in Lakeland, FL on Feb 25-26, 2020. The forum is research and operationally based with 37 presentations. 125 people are expected to attend. The Winter Season WG will meet the day after in Lakeland on Thursday, 27 Feb, 2020.

#### **4. COMMITTEE FOR OPERATIONAL PROCESSING CENTERS (COPC) UPDATE.**

Lt Col Rob Branham, USAF, presented the annual update on the COPC.

He briefly reviewed the COPC's purpose, membership and the background of its formation. COPC has 3 supporting working groups:

- The Working Group for Cooperative Support and Backup (WG/CSAB) serves as the executive agent for the COPC.
- The Working Group for Centralized Communications Management (WG/CCM) coordinates communications issues between the OPCs.
- The Working Group for Observational Data (WG/OD) facilitates the acquisition, processing, exchange, and management of observational data and metadata among the Federal Agencies, the OPCs, the World Meteorological Organization, and other related data centers.

Current activities include:

- Investigating potential solutions for introduced latency to the valuable data exchange between the DOD networks and non-DOD networks. The goal is to reduce negative mission impacts introduced by mandated DOD cybersecurity initiatives.
- Finalizing the development of the new OFCM "U.S. Federal Meteorological Data Management Practices" guide.
- Inviting the DOD OPCs (through OSD) to attend the Global Data Exchange for NWP (GODEX).
- Testing the alternate dedicated circuits for automatic failover.
- Transitioning satellite data exchanges from DAPE to PDA.
- Implementing new satellite data exchange requests.

Lt Col Branham summarized areas of interest that COPC is monitoring as well as considerations of the operational integration of future satellites, and addressing pertinent goals and objectives identified in the Strategic Plan for Federal Weather Enterprise.

He closed with a recommendation from the COPC to ICMSSR to create a new Joint Action Group (potentially under COPC) for the awareness and coordination of the agencies' cloud computing efforts.

Members discussed the costs/benefits/security concerns, challenges and options related to cloud computing and data storage capabilities. See Action Items 2019-4.1 and 4.2.

#### **5. COMMERCIAL SATELLITE WEATHER DATA PROJECTS.**

**Lt Col Adam DeMarco, USAF, presented an update on US Air Force Commercial Weather Data Pilot.**

The 2017 House Resolution 4909 SEC. 1610. Commercial Weather Data Pilot (CWDP) directed the Secretary of Defense to establish a pilot to assess the viability of commercial satellite weather data. Funds for pilots were provided via Congressional additions to FY17-20 budgets. The additions were for pilots only; there is no budget yet for data buys.

The USAF priorities for CWDP projects are to focus on atmospheric and space weather gaps identified by the DoD Joint Requirements Oversight Council.

The first CWDP effort was a contract awarded to Atmospheric and Space Technology Research Associates (ASTRA) to assess the utility of commercially available space weather data in filling SBEM gaps using Radio Occultation (RO) data. GPS-RO data were obtained from three commercial vendors: Spire, GeoOptics, and PlanetIQ (proxy data only). An independent sub-contractor was tasked to provide objective analyses/statistics on the data utility in atmospheric model data assimilation and space weather characterization. The contract was awarded in August 2018 and a final report is due in December 2019.

The second CWDP effort was worked via a Broad Agency Announcement (BAA) to solicit multiple projects to address SBEM gaps. The initial BAA awards in September 2019 were to Astra to exploit/evaluate use of actual RO data from PlanetIQ and GeoOptics to accelerate CICERO-X smallsat (improved RO data).

Lt Col DeMarco closed by summarizing future challenges:

- Sustain CWDP efforts outside congressional adds.
- Transition of prototypes to operations and data buys.
- Evolve a modeling system to exploit data from multiple data paths, including ability to rapidly assimilate new data into NWP models.

### **Dr. Tsendar Lee, NASA, provided an update on NASA's private sector Small-Satellite Constellation Pilot.**

NASA has signed contracts with three companies to buy existing data products related to Earth Climate Variables (ECVs), derived from private sector-funded small-satellite constellations (3-satellite minimum constellation, full longitude coverage) for evaluation by NASA researchers to determine the value for advancing NASA research and applications activities and objectives:

- Planet: three satellite constellations including 200+ satellites supplying imagery and derived products over the entire Earth.
- DigitalGlobe: operates a five-satellite constellation that provides very high-resolution (31-50 cm) images.
- Spire: constellation of 48 satellites collecting Radio Occultation soundings and ship reports.

These satellites may provide a cost-effective means to augment and complement the suite of Earth Observations.

NASA has identified a broad set of ESD-funded researchers to assess over a one-year evaluation period, the value of the geophysical information in the data products for advancing NASA research and applications objectives.

All six NASA ESD research and analysis thematic areas and four Applied Science program elements were asked to evaluate and comment on the following:

- Accessibility of vendor supplied imagery and data.
- Accuracy and completeness of metadata.
- Quality of User Support Services: The availability, responsiveness, and technical expertise required to answer Investigator inquiries.
- Appropriateness of End User License Agreement.
- Utility of data and imagery for advancing Earth system science research and applications.
- Quality of vendor supplied imagery and/or data.

In the Pilot evaluation reporting, the 39 projects were separated into two groups based on the type of data being evaluated: radio occultation, and imagery. Less than half of the Pilot investigators evaluated multiple commercial vendors for their projects. Investigators in each group submitted interim, midterm and final reports and attended one in-person meeting. (Spire Global evaluation results will be completed in December 2019)

**Ms. Kate Becker provided an update on NOAA/NESDIS Commercial Weather Data activities.**

The Weather Research and Forecasting Innovation Act of 2017 authorized NOAA's space-based commercial data use. Their pilot program was to publish standards, enter into at least one pilot contract and assess data within 3 years. \$6M per year was authorized for FY2017-FY2023. If the pilot is successful NOAA will obtain commercial weather data for operational use where appropriate, cost-effective, and feasible. NOAA would also continue to meet international meteorological agreements and avoid unnecessary duplication between public and private data sources.

The congressional appropriations to NOAA were shown for 2016-2019 and projected for 2020-2024.

The Commercial Weather Data Pilot (CWDP) Round 1 focused on radio occultation data. Initial contracts were with GeoOptics and Spire. Round 2 initial contracts were with GeoOptics, PlanetIQ and Spire.

Ms. Becker described the CWDP Rounds 1 and 2 data assessment and operational readiness activities and the organizations that assisted with this effort. The Round 1 assessment was completed in 2017. The Round 2 assessment will be completed in 2020. Other Round 2 partner agency data assessments are being conducted by EUMETSAT, the U.S. Navy and others (pending).

For the next steps, pending results of Round 2, NOAA will release a solicitation by the end of FY 2020 for operational RO data purchase. Additional commercial data types will be considered, and NOAA will continue to systematically consider commercial capabilities as a potential part of future architectures, along with NOAA programs of record and international partner missions.

Mr. Bonadonna presented a slide showing key challenges related to space-based commercial data purchases and the need for a JAG or WG to advise ICMSSR on responding to these challenges.

Members discussed processes/criteria for agencies to assess, buy and share commercial data and related cyber security aspects of this process. See AIs 2019-4.3 and 4.4.

## **6. WORKING GROUP FOR COASTAL ACT SUPPORT (CAS) UPDATE.**

Ms. Nicole Kurkowski, NWS, presented an update on the NWS Coastal Act Program. She provided the background for NOAA (and OFCM) response to tasking from Congress related to the coastal Act.

The data collection protocol was established/completed by December 28, 2013. The Coastal Wind and Water Event Database (CWWED) v1.0 is the repository for storm observations and was completed in 2019. It will provide the data used in the Named Storm Event Model (NSEM).

The NSEM will be a collection of separate, but interdependent, model products that provide time dependent analyses of specific meteorological and hydrologic factors that contribute to indeterminate losses. The three main model product areas will be Storm Surge / Waves, Wind and Surface Pressure Analyses, and Precipitation and Hydrologic.

Post-Storms Assessments will be in the form of gridded spatial and temporal output from the NSEM. FEMA will be able to access the point-specific information for the purposes of inputting values into the COASTAL Formula for determining the cause(s) of damage for the indeterminate loss in question. The post-storm assessment output (assuming it meets 90% accuracy at the location in question) will then be incorporated in the COASTAL Formula (managed by FEMA). The formula will consider other non-geophysical data (e.g. structure data) to determine the extent to which water vs. wind contributed to the destruction (thereby determining the cost responsibility between NFIP and private home insurers). With full FY20 funding, the NSEM and CWWED will be completed in 2021.

Ms. Kurkowski provided a summary of FY16-19-funded COASTAL Act activities that included twelve sub-projects that contributed to the development of the NSEM and CWWED. She described overall program accomplishments and the general challenges ahead (observation density, sensor durability, and reaching the 90% accuracy requirement in all locations at all times, and response capability). The next steps include data agreements with data providers, OFCM review/update of the COASTAL Act Data Protocol Annex to the Federal Plan for Disaster Impact Assessments, and a request for test storm exercises with Covered Data Providers.

## **7. OPEN DISCUSSION.**

Dr. Kaye provided information about NASAs commercial solicitations and upcoming airborne campaigns.

Lt Col Branham noted that the JAG/USWRP-IP will meet in early 2020 and representatives from agencies with research interests are needed. See AI 2019-4.5.

## **8. NEXT STEPS/CLOSING COMMENTS/CLOSING/ADJOURN.**

Members were thanked for their participation. Mr. Bonadonna thanked William Bauman for his service as chair of the ICMSSR this past year. Mr. Ralph Stoffler, USAF, has agreed to chair the ICMSSR in 2020. The meeting was adjourned at 2:52 PM.

**Interdepartmental Committee for Meteorological Services and Supporting Research  
Meeting 2019-4  
Action Items**

**ICMSSR Action Item 2019-4.1.** Adapt a current / form a new Working Group under ESPC to coordinate cloud use/initiatives across Federal Weather Enterprise. Include relevant Subject Matter Experts from COPC and Joint Center for Satellite Data Assimilation (JCSDA).

**Responsible Office:** ESPC ESG

**Due Date:** February 28, 2020.

**ICMSSR Action Item 2019-4.2.** Expand membership of the Committee for Operational Processing Centers (COPC) to include members from the Support Program Office (SPO) (Air Force Life Cycle Management Center) supporting the 557 Weather Wing with programmatic expertise.

**Responsible Office:** AF/A3W

**Due Date:** January 31, 2020.

**ICMSSR Action Item 2019-4.3.** Share findings and evaluations of Space-based Commercial Weather Data programs among NOAA, NASA, and DoD using appropriate acquisition discipline and controls.

**Responsible Office:** NOAA, NASA, and DoD CWDP Program Leads

**Due Date:** March 30, 2020.

**ICMSSR Action Item 2019-4.4.** Request ICMSSR approve a new Joint Action Group under ICMSSR to coordinate/advise on issues regarding Space-based Commercial Weather Data Purchase Coordination.

**Responsible Office:** ICMSSR Members

**Due Date:** December 31, 2019.

**ICMSSR Action Item 2019-4.5.** Provide Subject Matter Experts for the JAG / USWRP-IP

**Responsible Office:** ICMSSR Members with research interests

**Due Date:** January 15, 2020.