FEDERAL COMMITTEE FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH (FCMSSR)

Record of Actions: 2018-2 Meeting
October 22, 2018, 2:30 p.m. EDT

SSMC 2, Room 7224, 1335 East West Highway
Silver Spring, MD 20910

Office of the Federal Coordinator for Meteorology
Suite 7130, SSMC2
1325 East West Highway
Silver Spring, MD 20910

Agency	**Member**	**Attended for Member** (T: by telecon)
DOC/NOAA	Neil Jacobs (Chair)	Bill Lapenta
DOD	Dale Ormand	Ben Petro
DOE	Gary Geernaert	
DOT/FAA	Pamela Whitely	Paul Fontaine (T)
DHS		Michael Hurick
NSF	William Easterling	Anjuli Bamzai (T)
NTSB	Capt David Helson (T)	
OMB	Benjamin Page	Michael Clark (T)
USDA	Seth Meyer	Mark Brusburg (T)
OFCM	Michael Bonadonna	

Invited Participants	**Agency**	**Invited Participants**	**Agency**
Ken Barnett	OFCM	Floyd Hauth (T)	OFCM
Jonathan Berkson (T)	DHS-USCG	Frank Indiviglio (T)	DOC/NOAA
Lt Col Robert Branham (T)	DOD/USAF	Sim James	OFCM
Jessie Carman	DOC/NOAA/OAR	Tsengdar Lee	NASA
David Chorney	OFCM	Jason Mansur (T)	DOC/NOAA/OMAO
CAPT Marc Eckhardt (T)	DOD/USN	Rohit Mathur (T)	EPA
Don Eick (T)	NTSB	Gary Matlock	DOC/NOAA
Louis Escamilia (T)	DOD/USA	David McCarren	DOD/USN
Michael Farrar	DOD/USAF	Anthony Ramirez (T)	OFCM
Mark Govett (T)	DOC/NOAA/OAR	LtCol James Reusse (T)	DOD/USMC
Vanessa Griffin (T)	DOC/NOAA/NESDIS	Ralph Stoffler	DOD/USAF

Date Issued: November 2, 2018

1. OPENING REMARKS.

Dr. William Lapenta, Special Assistant to NOAA Assistant Secretary for Environmental Observation and Prediction and acting FCMSSR Chair, welcomed participants. Roll call was conducted, and the agenda was reviewed and approved. Mr. Bonadonna, OFCM, provided administrative remarks.

2. ACTION ITEMS REVIEW.

Mr. Michael Bonadonna (Acting Federal Coordinator for Meteorology) reviewed the status of Action Items recorded at previous FCMSSR meetings.

- 2018-1.1: Awaiting reply from OSTP on ICAWS Option A.
- 2018-1.2: The Strategic Plan for Federal Weather Coordination as presented during the 24 October 2017 FCMSSR meeting was published on 1/18/2018. Action Item is closed.
- 2018-1.3: The 1340-series qualification changes. AI remains open for further revisions and staffing.
- 2018-1.4: Will be closed today following briefing to be presented by Dr. Lapenta on "Accelerating NOAA's Next Generation Global Prediction System Research to Operations."

3. FEDERAL COORDINATOR'S UPDATE.

Mr. Bonadonna provided an update of the Federal Weather Enterprise (FWE) coordination activities.

- There were no substantial changes to the FWE infrastructure since last briefing, The infrastructure is comprised of the FCMSSR, the Interdepartmental Committee (ICMSSR), 2 Councils, 4 Committees, 17 Working Groups, and 3 Joint Action Groups.
- ICMSSR directed that another objective be added to Goal 4 of the Strategic Plan "Conduct productive, synergistic interagency research efforts." New Objective 4.5: Develop coordination processes that facilitate operational feedback to the research community, and that accelerate the integration of promising research from federal, commercial, and academic partners into operational improvements in observing, forecasting, warning and threat communication. ICMSSR approved 4.5, after noting that the Weather Act of 2017 placed an emphasis on improving research-to-operations processes, but these were not mentioned in the Strategic Plan.

  Members approved addition of the new Objective but raised concerns regarding areas of research or new technologies that may broach sensitivities related to national security perspectives. **(See Action Item 2018-2.1).**

- The Working Group for the Budget Coordination Report (WG/BCR) was formed and the Terms of Reference are being reviewed. Initial guidance to agencies for FY20 is in draft and has been discussed at agency working levels. The formal request for FY20 budget information will be issued in December. Due date for getting budget information to OFCM will be ~2 weeks after release of FY20 President's Budget Request.
- USAF proposed changing the Office of Personnel Management (OPM) qualification standard for the 1340 series (Meteorologist) to widen the applicant pool and prevent inadvertent automated de-screening of prospective successful meteorologists. ICMSSR and FCMSSR reviewed the Air Director of Weather's (USAF A3W) proposal and approved it for forwarding to OPM. The Department of Commerce (DOC) Chief Human Capital Office (CHCO) recommended the proposal be revised to ensure compliance with Merit System Principles and to conform to OPM's qualification framework. The NOAA Deputy Administrator and USAF A3W agreed to a revised proposal and the new proposal will be re-submitted through channels to OPM.

Members expressed concerns about consistency of the 1340 standards with World Meteorological Organization (WMO) Basic Instructional Package for Meteorologists (BIPM) and Basic Instructional Package for Meteorological Technicians (BIPMT) **(See Action Item 2018-2.2).** Mr. Bonadonna agreed to review the BIPM to ensure consistency. The revised proposal will be sent to the FCMSSR members for review prior to submission to OPM. **(See Action Item 2018-2.3).**

- The 2017 Weather Act directed Executive Office of the President Office of Science and Technology Policy (OSTP) to establish "an Interagency Committee for Advancing Weather Services (ICAWS)," with duties including identifying, prioritizing, and coordinating top forecast needs, and sharing needs and improvements across agencies. A proposal was made to rename FCMSSR as ICAWS, combine ICAWS duties and existing FMCSSR duties into one ICAWS charter. This option would have OSTP and NOAA co-chairs for the ICAWS. OSTP would submit a legislative change request to make the OFCM Director the ICAWS Exec. Sec. (vice co-chair.) FCMSSR approved recommending this plan to OSTP at the April 2018 FCMSSR meeting. OSTP staff will delay approval of this plan until the new OSTP Director is confirmed and can review the plan.

4. IMPROVING OPERATIONAL NUMERICAL GUIDANCE AND FORECAST SKILL.

Dr. William Lapenta presented NOAA's Next Generation Global Prediction System (NGGPS) as a possible framework for broader enterprise implementation.

He discussed the factors related to improving forecast skill and performance, including quality control of observations. data assimilation, dynamic core and model physics, code efficiency, and optimized hardware. He also noted the inherent barriers with the status quo, especially the impact of fractured external strategy across various agencies with different priorities and difficulties related to security clearance procedures for visiting scientists. Another concern is there are too many committees with overlapping and conflicting input and many of the people from the same agencies are tasked to serve on multiple committees.

Dr. Lapenta summarized Dr. Jacob's thoughts on accelerating research-to-operations (R2O) and operations-to-research (O2R). These included working toward the end-to-end community model, better use of visiting scientists, formalizing the R2O funnel (requirements, gates, and transitions) and fast-tracking satellite data assimilation. NOAA needs to build a community model and effectively engage the private and academic sectors in this process. This will also help build interagency partnerships and collaboration.

NOAA needs to use High Performance Computing (HPC) cloud for research and development purposes because it gives more flexibility with testing and experimenting. However, the risks involved must be considered, especially those related to security. The way software codes are developed may be part of the risk problem.

In dealing with virtual machines and cloud HPC, Numerical Weather Prediction (NWP) needs two things: Remote Direct Memory Access (RDMA), and fast interconnect speeds. To address these factors NOAA will use their Global Model Cloud Pilot (GMCP) to port and test NGGPS in various cloud HPC and VM environments.

Dr. Lapenta closed by summarizing NOAA's approaches in dealing with challenges related to visiting scientists and external expertise, formalizing the R2O funnel, fast-tracking satellite Data Assimilation (DA), avoiding risk aversion, and accelerating the Strategic Implementation Plan. He stressed the importance of promoting innovation, involving the operational community in the development and testing processes, and promoting interagency partnerships.

5. EARTH SYSTEM PREDICTION CAPABILITY (ESPC) HIGH PERFORMANCE COMPUTING DISCUSSION.

Mr. David McCarren and members of the HPC Working Group provided a briefing on high performance computing requirements for future Earth System Prediction Capability needs.

Mr. McCarren covered the background and history of the HPC Working Group covering the period from August 2015 through October 2018. He noted that the National Strategic Computer Initiative (NSCI) strategy document identifies deployment agencies and lead agencies that are designing and providing metrics for future systems. The technical challenges are that models do not scale up efficiently. This will soon result in the inability to operationalize model complexity/resolution improvements available from research.

Following a briefing on ESPC to ICMSSR, ICMSSR issued **Action Item 2018-3.3**.: "Ask the National Strategic Computing Initiative (NSCI) if high-resolution, fully coupled, long temporal range environmental prediction is still one of their targeted applications for the high-performance computing systems that their member agencies are developing."

Based on the response to AI 2018-3.3, FCMSSR approval was needed for the following actions:

- If "yes" ESPC will pursue a closer working relationship with NSCI to connect agency needs (e.g. NWS, DOD) with NSCI progress and plans,
- If "no," or if "yes but only in a research mode, or in another mode that would not meet operational needs"–ICMSSR (through OFCM) will coordinate further discussion with the NSCI on environmental prediction in HPC.
- ESPC will coordinate a study to provide information that will enable federal agencies with environmental prediction responsibilities to map an effective path forward towards high-resolution, fully coupled, long temporal range environmental prediction.

The NSCI response was: "The Energy Exascale Earth System Model (E3SM) has a goal of fully-coupled decadal and longer-term climate simulations using computational and scientific advances for convection-permitting and convection-resolving simulations with horizontal grid spacings between 1 and 5 km, in the atmosphere and 5-30 km (eddy-resolving) resolution in the ocean and sea-ice."

DOE/Office of Science is the only agency contributing manpower, computational facilities, and/or funding resources to this effort. The project timeline extends through FY27.

ESPC is now requesting support for an Interagency Study on Purpose-Built HPC and support for Earth System Prediction computation at the National Strategic Computing Initiative. This study will help identify the current needs of earth system prediction models and determine whether a purpose-built earth system prediction computer is feasible from several perspectives, including cost and efficiency.

Members discussed the need for FCMSSR to get the NSCI perspective. It was also suggested to find a contact in the National Science and technology Council (NSTC) Networking and Information Technology Research and Development (NITRD) Program. (See **Action Item 2018-2.4**).

6. OPEN DISCUSSION.

Mr. Sim James announced OFCM planning for a new session on coordination of the FWE at the American Meteorological Society (AMS) Conference on Environmental Information Processing Technologies at the AMS annual conference in January 2019. This will become a recurring session each year.

Mr. Dave Chorney announced the annual Tropical Cyclone Operations and Research Forum (TCORF) in Miami in March 2019.

7. CLOSING COMMENTS/ADJOURN:

Mr. Bonadonna will send Action Items from this meeting for review. The next FCMSSR is tentatively scheduled for April 19, 2019. Final draft Action Items will be provided in the meeting summary.

The meeting adjourned at 4:12 P.M.

Federal Committee for Meteorological Services and Supporting Research (FCMSSR)

Meeting 2018-2 Action Items

Action Item 2018-2.1. With respect to implementation of the new FWE Strategic Plan objective to improve coordination of R2O activities, ensure all elements of the FWE Coordinating Infrastructure consider any potential National Security concerns regarding operational vulnerabilities and core technical capabilities that should be restricted for internal government use only.
Responsible Office: OFCM
Due Date: December 15, 2018.

Action Item 2018-2.2. Ensure input to the WMO Basic Instructional Package for Meteorologists (BIPM) and Basic Instructional Package for Meteorological Technicians (BIPMT) is consistent with the proposed modification to the OPM 1340 Meteorologist Qualification Standard.
Responsible Offices: FCMSSR Organizations
Due Date: October 26, 2018

Action Item 2018-2.3. Draft a new proposal for the 1340 Meteorologist Qualification Standard with support from NOAA and DOC HR. Secure FCMSSR concurrence. Request DOC HR sends the package to OPM.
Responsible Office: OFCM, NOAA
Due Date: November 16, 2018.

Action Item 2018-2.4. In order to improve coordination with ongoing National Strategic Computing Initiative (NSCI) activities, contact the NSTC Networking and Information Technology Research and Development (NITRD) Program to obtain a point of contact and invite them to provide an information briefing for the next ICMSSR meeting.
Responsible Office: OFCM
Due Date: October 31, 2018