FEDERAL COMMITTEE FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH (FCMSSR)

Record of Actions: 2017-1 Meeting
April 25, 2017, 2:00 p.m. EDT

SSMC 3, Room 4527, 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	Benjamin Friedman (Chair)	-
DOD	Dale Ormand	Bindu Nair
DOE	Gary Geernaert (T)	-
DHS/FEMA	David Miller	-
DOI	Don Cline (Acting)	-
DOS	Kenneth Hodgkins	David Turner
DOT/FAA	James Eck	Paul Fontaine (T)
EPA	Jennifer Orme-Zavaleta	Rohit Mathur (T)
NASA	Thomas Zurbuchen	Steve Clarke
NRC	Cynthia Jones(T)	-
NSF	Paul Shepson (acting)	Pat Harr
NTSB	Captain David Helson (Acting)	-
OMB	Benjamin Page (T)	-
OSTP	Jacqueline Meszaros	Deerin Babb–Brott (T)
USDA	Seth Meyer	-
OFCM	William Schulz	-

Invited Participants	Agency
Ken Barnett	OFCM
Jonathan Berkson	DHS-USCG
Michael Bonadonna	OFCM
Linda Bunn (T)	OSTP
Jessie Carman	DOC/NOAA/OAR
Jen Cauffman	DOD
Michael Clark (T)	OMB
Lt Col Steve Davis (T)	OFCM-USAF
Michael Emanuel	DOT-FAA
Floyd Hauth (T)	OFCM
Richard Heuwinkel	DOT/FAA
Craig McLean	DOC-NOAA
TC Moore (T)	DOD-USAF
Rickey Petty (T)	DOE
LTJG Rachel Pryor	DOC/NOAA
Jennifer Sprague	DOC-NOAA
Jud Stailey	OFCM
Louis Uccellini	DOC-NOAA

Date Issued: 19 May 2017

1. OPENING REMARKS.

Mr. Benjamin Friedman, Deputy Under Secretary for Operations Performing the duties of Under Secretary of Commerce for Oceans and Atmosphere and FCMSSR Chair welcomed participants and conducted a roll call of members in attendance and those participating via teleconference media. He emphasized the importance of continuing to work together during the transition of new key personnel in the new administration. He reviewed the agenda and solicited whether there were any other concerns or issues; none was offered.

2. ACTION ITEMS REVIEW.

Dr. William Schulz, Federal Coordinator for Meteorology, reviewed the two FCMSSR Action Items. The preliminary Spectrum Efficient National Surveillance Radar (SENSR) weather requirements documents were forwarded to the FCMSSR and this AI is closed. The second AI approved the new process for the quadrennial Federal Meteorological Coordination Strategic Plan and Annual reports. Progress on this AI was presented later in the meeting. The AI remained open.

3. FEDERAL COORDINATOR'S UPDATE.

Dr. Schulz started with the diagram showing the Federal Weather Enterprise Infrastructure and noted that changes may be needed to accommodate actions related to the Weather Research and Forecasting Innovation Act of 2017. His update included activities by the Committee for Operational Environmental Satellites, Committee for Operational Production Centers, Interagency Weather Research Committee, and the NEXRAD Program Council. He also noted the next meeting dates for ICMSSR and FCMSSR.

Dr. Schulz highlighted several key activities since the last ICMSSR meeting including:

- The Tropical Cyclone Operations and Research Forum `17 completed in March which included the annual update of the National Hurricane Operations Plan scheduled for release 1 May;
- The update to Federal Meteorological Handbook -1 (Surface Observations);
- OFCM support for the National Space Weather Action Plan and the Space Weather Operations, Research and Mitigation (SWORM) Subcommittee;
- OFCM hosting and developing "SWORM.GOV, " expected to be online in June;
- Planning for the Space Weather Enterprise Forum (SWEF) scheduled for 27 June at NTSB Conference Center.

Dr. Louis Uccellini (NOAA/NWS), the US representative to World Meteorological Organization (WMO), noted the need for a coordinated US agency position on research priorities and to what extent the US will participate in the three major WMO research projects.

4. NEW LEGISLATION: WEATHER RESEARCH AND FORECASTING INNOVATION ACT OF 2017.

Dr. Schulz briefed members on legislation (HR353/S570) that went to the President for signature on 6 April, and was signed on 19 April. He focused his remarks on section 402 but noted other sections that also call for interagency coordination. Section 402 requires the Director of the Office of Science and Technology Policy to establish an Interagency Committee for Advancing Weather Services (ICAWS) to improve coordination of relevant weather research and forecast innovation activities across the Federal Government. This legislation poses both opportunities and issues:

- ICAWS responsibilities may overlap with FCMSSR and ICMSSR missions.
- The Act calls for the Federal Coordinator to serve as ICAWS Co-Chair. This may imply level of participation lower than intended.
- Opportunities exist to streamline our coordination infrastructure, while there are risks of encumbering the Federal Weather Coordinating infrastructure.

- The Act and ICAWS function could serve as a new mandate, or some form of "official encouragement," for agencies to participate in coordination activities.

Dr. Schulz proposed a path which involves forming a team to draft implementation proposals for agencies involved, consider a range of options and get Legal/General Councils to provide opinions on the feasibility of options. Members agreed on this approach and suggested inclusion of DoD and other agencies on the team, and also noted their preference to address this mandate using the current coordination infrastructure**. See Action Items 2017-1.1 and 1.2.**

5. FEDERAL METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH STRATEGIC PLAN AND ANNUAL REPORT.

Dr. Schulz updated the FCMSSR on progress toward creation of a Strategic Plan for Federal Weather Coordination and on the revision of the annual report on Federal Meteorological Services and Supporting Research. He reviewed the background on changes made to simplify the Federal Plan process. The Working Group developed a process that:

- Includes a Strategic Plan that focuses on Interagency coordination goals and objectives and will be published every four years.
- Proposes a FY18 Annual Plan that will amplify information on agency budgets. It will include FY18 President's Budget Request amounts; exclude FTE numbers; and envisions an introductory statement from each agency followed by 2-5 bulleted highlights that reflect a significant expenditure or changes in approach or policy. Dr. Schulz showed examples of the text and tables.
- Proposes a FY19 edition that also includes plans and progress in support of the goals and objectives of the Strategic Plan.

Members agreed with the proposed revisions and schedule. **See Action Items 2017-1.3 and 1.4.**

6. EXASCALE COMPUTING CHALLENGES AHEAD.

Dr. Pat Harr (NSF) from the National Earth Systems Prediction Capability Executive Steering Group highlighted the potential resource challenges required to fully exploit exascale computing. Exascale computing refers to computing systems capable of at least one exaFLOPS, or a billion billion calculations per second. The Exascale Computing Project (ECP) aims to transform the high-performance computing ecosystem and make major contributions to the nation. It will develop applications that will tackle a broad spectrum of mission critical problems of extreme complexity with unprecedented performance, contribute to the economic competitiveness of the nation, and support national security.

Dr. Harr shared his perspectives on high-performance computing for Earth System Modeling. He noted that we are on the cusp of a new computing paradigm and emphasized that in order to support national needs, agencies need a voice in the development of exascale computing. DoE is investing in exascale hardware and software, however other agencies (NOAA, DoD, NASA, NSF) need to invest in architectures that support overall Earth-system modeling and other agency-specific needs.

He discussed perspectives from an Earth-system modeling viewpoint, from a computing viewpoint, and from a combined modeling and computation viewpoint. When comparing data density versus computational intensity we are in the gap of large scale data-driven modeling and simulation.

Increases in understanding and prediction skill require advances in computing, in representation of physical processes, in coupling of Earth-system components, data assimilation and representation of uncertainties through ensembles. There is a need for partnerships among computing, storage, and networking communities to document modeling, data, and computation requirements.

Exascale requires a new computing ecosystem with advances in workforce development, software design, and model efficiency. This community needs to coordinate strategies and at least a partial computing technology that would simplify the migration to exascale.

NSF has invited contributions from the whole science, engineering, education, and CI research community to inform this planning effort. A workshop was held in early April to seek input on Computational Challenges in State Space Estimation across the Sciences. A second workshop will be held in May to address Modeling Research in the Cloud.

The NWS noted two challenges related to coupled data assimilation of various components and the operational and research computational needs especially regarding reliability of systems.

7. SPECTRUM EFFICIENT NATIONAL SURVEILLANCE RADAR (SENSR) UPDATE.

Mr. McLean (ICMSSR Chair) summarized discussions held at the March 2017 ICMSSR regarding both SENSR and the Multifunction Phased Array Radar (MPAR), and highlighted the need for continued interagency action as the SENSR Joint Program Office and Executive Steering Groups stand up.

The ICMSSR determined that it was important to future weather radar that the MPAR work continues. It relates to SENSR, but is not subsumed by the SENSR project. They also noted that the Memorandum of Agreement for establishing the SENSR Joint Program Office had been signed by DHS, DOT, NOAA and DOD and suggested that the SENSR Executive Steering Group meet in May to identify key staff and review the aggressive timeline and near term deliverables.

Mr. Mike Emanuel (FAA) provided an update on SENSR activities. He covered recent accomplishments and upcoming work.

The motivation for this program originated with the need to vacate the 1300-1350 MHz spectrum by potentially consolidating long-range, short-range, and weather radar requirements. Funding for the program came from money appropriated for research, development, and planning to allow the auction of the 1300-1350 MHz portion of the spectrum. The funds were shared by four agencies (DoD, NOAA, DHS and FAA) to do the studies, analyses, and research and development to meet agency requirements for surveillance, security and weather information.

SENSR Sponsored R&D includes Network Analysis and Performance Trades, Polarimetric Performance and Calibration, Advanced Technology Demonstrator Applications, Command and Control Simulation, and Adjunct Weather Processing.

Mr. Emmanuel presented the key accomplishments and the upcoming activities and program milestones through the 1QFY18. He closed by noting the keys for success as adequate empowered staff, internal support across organizations at all levels of leadership, and willingness to accept alternative approaches to meet missions.

The NWS expressed two significant concerns. First, operational weather radar capability may be difficult to sustain if weather radars are forced to either share the S-band or move to another band. Second, the "new" discussion about moving weather radar into C-band is troubling. NEXRAD is optimally positioned in S-band, as that portion of the spectrum is best suited to weather radar requirements. We may be taking a step back in radar observing capabilities if we are forced into the C-band.

8. CLOSING COMMENTS/ADJOURN:

Mr. Friedman thanked all the participants and reminded members that the next FCMSSR meeting will be in October. The meeting adjourned at 3:57 P.M.

Federal Committee for Meteorological Services and Supporting Research (FCMSSR)

Meeting 2017-1 Action Items

FCMSSR Action Item 2017-1.1. Form a Joint Action Group to review the *Weather Research and Forecasting Innovation Act of 2017* and develop options to implement the Section 402 requirements for the Interagency Committee for Advancing Weather Services.
Responsible Office: OFCM, FCMSSR agencies
Due Date: May 12, 2017

FCMSSR Action Item 2017-1.2. Present proposals to FCMSSR to implement *Weather Research and Forecasting Innovation Act of 2017* Section 402 requirements for the Interagency Committee for Advancing Weather Services.
Responsible Office: ICMSSR
Due Date: October 24, 2017

FCMSSR Action Item 2017-1.3. Produce the *FY18 Annual Report on Federal Weather Coordination* (the replacement for the *Annual Plan for Meteorological Services and Supporting Research*) as presented during the 26 April 2017 FCMMSR Meeting.
Responsible Office: ICMSSR, OFCM
Due Date: August 31, 2017

FCMSSR Action Item 2017-1.4. Produce the *Strategic Plan for Federal Weather Coordination*.
Responsible Office: ICMSSR, OFCM
Due Date: October 24, 2017