FEDERAL COMMITTEE FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH (FCMSSR)

Record of Actions: 2016-2 Meeting
October 20 2016, 1:00 p.m. EDT

Room 12015/17, Herbert C. Hoover Building
14th and Constitution Avenue NW
Washington, DC 20230

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

Members	Agency
Kathryn Sullivan (Chair)	DOC/NOAA
Earl Wyatt	DOD
Gary Geernaert	DOE
Michael Matthews for Reggie Brothers	DHS/S&T
Kenneth Hodgkins	DOS
Paul Fontaine for James Eck	DOT/FAA
Jennifer Orme-Zavaleta	EPA
Thomas Zurbruchen	NASA
Michael Case for Michael Weber	NRC
Pat Harr for Roger Wakimoto	NSF
Don Eick for Dana Schulze	NTSB
Benjamin Page	OMB
Kei Koizumi for Tamara Dickinson	OSTP
Seth Meyer	USDA
William Schulz	OFCM

Invited Participants	Agency	Invited Participants	Agency
Richard Spinrad	DOC/NOAA	Michael Clark	OMB
Vanessa Griffin	DOC/NOAA/NESDIS	Michael Bonadonna	OFCM
Kevin Cooley	DOC/NOAA/NWS	Jud Stailey	OFCM
Jessie Carman	DOC/NOAA/OAR	Ken Barnett	OFCM
LTJG Rachel Pryor	DOC/NOAA/	Erin McNamarra	OFCM
Scott Livezey	DOD/USN	Donell Woods	OFCM
David McCarren	DOD/USN	CAPT Chris Gabriel	OFCM-USN
Dan Eleuterio	DOD/USN	Floyd Hauth	OFCM
Rickey Petty	DOE	Tony Ramirez	OFCM
Christopher Cannizzaro	DOS/OES		

Date Issued: December 14, 2016

1. OPENING REMARKS

Dr. William Schulz, Federal Coordinator for Meteorology, opened the meeting by thanking all participants for attending. Dr. Kathryn Sullivan, Under Secretary of Commerce for Oceans & Atmosphere, National Oceanic and Atmospheric Administration (NOAA) Administrator, and FCMSSR Chair, also welcomed the attendees.

2. ACTION ITEMS REVIEW

Dr. William Schulz (Federal Coordinator for Meteorology) reviewed the status of Action Items recorded at previous FCMSSR meetings. He stated that all three of the action items would be addressed during the meeting and further action or closure would depend on the decisions made by the FCMSSR.

All FCMSSR member agencies have reviewed and concurred with the FCMSSR Charter. Dr. Sullivan and the Principal Members in attendance signed the record copy of the Charter. Once OFCM will secures the signatures of the remaining members, the FCMSSR will have their first official charter in more than 50 years.

See FCMSSR Action Item 2016-2.1.

3. FEDERAL COORDINATOR'S UPDATE

Dr. Schulz provided a summary of the several key OFCM activities:

- COES (Committee for Operational Environmental Satellites)
  - Developing recommendations for improving interagency satellite coordination, how to handle data gaps, and mitigation strategies for radio spectrum interference.
  - Next meeting 2 Dec 16; then update ICMSSR.
- COPC (Committee for Operational Production Centers)
  - Alternate data path between operational production centers is in place and tested; working toward DoD mandated security testing.
  - Next meeting 25-26 Oct 16
- Interagency Weather Research Committee
  - Formerly administered at National Science Foundation.
  - NSF, DoD, NOAA, NASA; plan to extend invitations to DoE, FAA, USGS, DoI (BOEM)
  - Focus will be on facilitating shared use of national research infrastructure and assisting in determining research priorities.
  - FIRST meeting 28 Oct 16
- Committee for Climate Services Coordination
  - Expected to develop recommendations to use resources efficiently to meet user requirements on climate services issues impacting multiple agencies.
  - FIRST meeting 29 Nov 16
- NEXRAD Program Council (DoD, NWS, FAA)
  - Needs to address disposition of DoD WSR-88D radars (some are not on US soil).
  - Next meeting 5 Dec 16

Dr. Schulz also unveiled the new OFCM website: The updated website goes live on 28 October 2016. It features news on recent agency coordination topics; OFCM group web pages; committee pages that include their meetings, publications and associated groups; OFCM publications like the Federal

Meteorological Handbooks and the annual Federal Plan; and a meetings calendar for all OFCM sponsored or facilitated activities/events.

4. NATIONAL EARTH SYSTEM PREDICTION CAPABILITY (ESPC) EXECUTIVE STEERING GROUP (ESG) UPDATE

Mr. Livezey introduced David McCarren (USN) and Dr. Jesse Carman (NOAA) who provided an update on the activities of the ESPC program. Per FCMSSR direction at the April 2016 meeting, the ESPC ESG now reports to the FCMSSR with support through the OFCM.

The briefing included an explanation of the National ESPC which is an integrated National Capability meeting the U.S. Federal need for Earth System Prediction for the provision of operational products and services. These products serve a broad range of national needs ranging from the protection of lives and property, to economic development and strategic decision making. The predictions cover near term, medium range and extended range weather (< 90 days), seasonal and inter-annual climate (90 Days+), and sub-decadal to decadal time periods.

There is a significant skill gap between weather modeling, which is sensitive to initial conditions, and climate modeling, which is sensitive to boundary conditions related to the coupling of ocean, land, ice, and atmosphere. An extensive list of model variables (land-ocean-ice), ensemble information, data assimilation, HPC advances, etc., are needed along with research and operational expertise and skills to bridge the overall skill gap.

Building a national ESPC requires the coordination of existing and planned agency capabilities. The agency roles and responsibilities were described for NOAA, Navy, Air Force, NASA, DOE and NSF. Technical partnerships are especially important to the success of the ESPC. The intersection of agency roles is world-wide observations and global coupled air-ocean-land-ice model capability encompassing processes in tropical-mid-latitude-polar teleconnections that are key to prediction of high-impact events over the U.S. and around the world.

The current status of the global operation weather ensemble was also presented. A question was asked about how explicit the operational global weather ensemble is and what the spatial and temporal resolutions of the model members are. An action item was requested to provide information regarding model spatial and temporal resolution to FCMSSR members. See **FCMSSR Action Item 2016-2.2.**

Dr. Carman covered information related to the NRC Study "Developing a U.S. Research Agenda to Advance Subseasonal to Seasonal Forecasting". One of the key recommendations was the need to engage users right from the very start (bringing users aboard rapidly) to become involved in the product development so that they understand what is possible and help create products that provide value.

She described the issues and challenges of unmet needs. She noted the importance of improved operational prediction at longer time scales (beyond two weeks) and the indorsement of interagency coordination through complementary missions and mission capabilities, technological capability integrations, and connectivity to interagency coordination committees.

Recommendations were listed for phased implementation, which included steps in FCMSSR and OFCM involvement and engagement with National ESPC ESG, CENRS and OMB.
Discussion at the end of the briefing included concerns about operational prediction skills, ways to shape ESPC modeling research, and addressing related data assimilation concerns. Members also want the NTSC CENRS and CHNS to be informed. See **FCMSSR Action Item 2016-2.3.**

5. REVISED PROCESS FOR THE FEDERAL PLAN FOR METEOROLOGICAL SERVICES AND SUPPORTING RESEARCH.

In response to FCMSSR AI 2016-1.1 and ICMSSR AI 2016-2.1, OFCM has worked with the EOP and other agencies of the FWE to develop a new approach to meeting legislative requirements for an annual horizontal view of Federal investments in Meteorological Services and Supporting Research. Dr. Schulz provided a progress update including a proposal for the framework of the new Federal Plan. He discussed the current structure of the Federal Plan that includes agencies budgets and agency programs. The proposed approach is to develop a strategic document that would include the FWE coordination vision, OFCM mission, five to seven collectively valuable goals and objectives, and appendices. OFCM would facilitate an update of the Strategic Plan every four years. The annual plan would be issued every March and include the organizational structure, an agency involvement/interest matrix, budget tables, past and planned efforts on goals, a calendar in review and optional agency reports.

Members expressed concerns that climate services should be addressed /included in the Federal Plan**. See FCMSSR Action Item 2016-2.6.** The agency involvement/interest matrix will be also be updated to reflect OMB concerns (involvement vs. interest).
Dr. Schulz concluded with a roadmap schedule:

- Brief FCMSSR on structure (October 20)
- Bring FCMSSR feedback to JAG (November)
- JAG builds goals and objectives, works toward a process description
- JAG Drafts the FWE Strategic Goals (November-December 2016)
- Update ICMSSR at their December meeting
- JAG Drafts the FY18 FWE Strategic Plan for ICMSSR Approval (January- March 2017)
- Approval of FY18 Fed Strategic Plan at April 2017 FCMSSR meeting
- Annual FY19 Fed Plan will be new version

The FCMSSR concurred with the proposed process and schedule. See **FCMSSR Action Item 2016-2.5.**

6. INTERAGENCY FRAMEWORK FOR METEOROLOGICAL OBSERVING.

In response to ICMSSR AI 20161.1, OFCM acted to establish a Joint Action Group to answer FCMSSR AI 2015-1.1 to draft a "Framework to guide acquisition of observing capabilities."
Dr. Schulz presented an update on the status of the JAG and previewed the proposed framework. OFCM established the Joint Action Group for Meteorological Framework (JAG/MOF) with representatives from key agencies of Federal Weather Enterprise responsible for acquiring, deploying, and operating both ground-based and space-based observing systems used to support operational meteorological services and support supporting research. OFCM proposed that the framework be description of structure, organization, and process; flexible in nature, and non-directive. Agencies will employ their internal methods, procedures, and organizations to accomplish each of the process activities in the planning cycle.

The JAG/MOF met twice to review current practices employed by the agencies to gather and document requirements, plan and program for acquisition of new observing capabilities. There findings were:

- GAO Report 15-96 recommended that NOAA develop a plan to guide the integration of its observing systems, analyze whether unnecessary duplication exists in its observing portfolio and develop a standardized methodology for the routine preparation and reporting of observing systems costs.
- NOAA Administrative Order 212-16 established policy on NOAA observing systems portfolio management.
- NOAA Observing Systems Program Council (NOSC) is chartered to conduct NOAA observing systems portfolio management and has been working with other agencies (USGS) and USGEO.
- USGEO conducts a triennial Earth Observing Assessment (EOA) which includes input from most Federal Weather Enterprise agencies
- NOAA TPIO supports both NOSC and USGEO with database development and analytical assessments forming the backbone of the EOA and the NOAA Observing System Integrated Analysis
    - TPIO uses the US government owned PALMA as the software tool to conduct this work.

Based on their findings the JAG/MOF recommended:

- Since the NOSC already administers a framework that is becoming capable of performing cost-benefit analyses of observing systems, do not attempt to create a new parallel structure.
- Build on the interagency contacts already inherent in the NOSC (e.g. USGS, USGEO connections, use of DoD software tools).
- When ready, NOSC can reach out to other agency partners.
- Assign OFCM as an observing member of the NOSC via ToR change, standing by to facilitate interagency connections as needed.

The FCMSSR approved the recommended framework and agreed to close FCMSSR AI 2015-1.1. See **FCMSSR Action Item 2016-2.7.**

7. SPECTRUM EFFICIENT NATIONAL SURVEILLANCE RADAR (SENSR) UPDATE.
Mr. Paul Fontaine (FAA) provided an update on Spectrum Efficient National Surveillance Radar (SENSR). This initiative may have direct impact on future national meteorological and air surveillance radar capabilities and the Multifunction Phased Array Radar (MPAR) technological solution.

For background, Mr. Fontaine noted that there was a Presidential mandate to free 500 Mhz of the government spectrum. A bi-partisan budget control act intends to free 30 Mhz below 3.0 Ghz for auction by 2022 and conduct an auction by 2024. The significant private sector demand for spectrum is not anticipated to abate. The recent auction of paired 25 Mhz L-Band grossed $42.4B. Commensurate valuations are expected for Long Range Radar L-band allocation.

OMB is authorized to disburse up to $500M for planning and pre-implementation activities for systems that accommodate spectrum sharing or consolidate spectrum. These activities include related research and development, economic analysis, engineering studies, requirements analysis, performance trades, etc. A technical panel would review these activities and forward them to Congress. The technical panel would score the activities, in part by the likelihood of spectrum auction 8 years after funding was received. Auction proceeds would cover 110% of relocation or spectrum sharing costs.

A joint memorandum of understanding has been drafted to develop a multiagency spectrum pipeline plan. The plan would define spectrum opportunities, validate spectrum valuations and identify

impacted systems. It would also develop and validate a Concept of Operations, define and validate cross-agency system performance, and offer recommendations for ways forward.

Mr. Fontaine described the proposed MPAR project status and timelines, establishment of a Joint program Office, and an acquisition strategy. The potential use of OMB monies could provide the luxury of a fly off of vendors, enhance risk reduction, and enable timely contract award. The agencies involved have developed preliminary weather requirements for this radar to support multiple agency missions.

FCMSSR members expressed a concern that NOAA requirements were not fully incorporated into the SENSR requirements. Mr. Fontaine explained that NWS has been involved with FAA since \for some time, and had received and incorporated NWS radar requirements. Mr. Stailey stated that he has been working with NOAA's NWS and OAR on the SENSR project and confirmed that the NWS Radar Functional Requirements had been provided to FAA some time ago and were included in the SENSR Draft Preliminary Requirements. Mr. Fontaine offered to provide that requirements document to all agencies so that they can review the incorporated weather requirements. See **FCMSSR Action Item 2016-2.4.**

8. OPEN DISCUSSION:
   Members agreed on the value of the FCMSSR and that it was important to provide briefing materials and other pertinent information regarding FCMSSR participation and activities to their successors in the next administration. See FCMSSR Action Item 2016-2.8.

9. NEXT STEPS/CLOSING COMMENTS/ADJOURN:
   Dr. Sullivan again thanked all the participants in today's meeting. The next meeting is scheduled for April 25, 2017. The ICMSSR will next meet on December 12, 2016 and sometime in March 2017. The meeting adjourned at 3:00 P.M.

Federal Committee for Meteorological Services and Supporting Research (FCMSSR)

Meeting 2016-2 Action Items

FCMSSR Action Item 2016-2.1. Collect remaining signatures for the Charter concurrence sheet and provide copies of the final document for to the members.
Responsible Office: OFCM
Due Date: Dec 31, 2016

FCMSSR Action Item 2016-2.2. Provide information regarding the spatial and temporal resolution of the operational multi-model ensemble to the FCMSSR members.
Responsible Office: ESPC ESG
Due Date: Nov 22, 2016

FCMSSR Action Item 2016-2.3. Brief the NTSC CENRS and CHNS at their earliest convenience on ESPC status and activities.
Responsible Office: ESPC ESG
Due Date: December 31, 2016

FCMSSR Action Item 2016-2.4. Forward preliminary SENSR weather requirements documents to the FCMSSR.
Responsible Office: OFCM
Due Date: Nov 22, 2016

FCMSSR Action Item 2016-2.5. Proceed with the new process for quadrennial Federal Meteorological Coordination Strategic Plan and Annual reports and deliver the first Strategic Plan to the FCMSSR for approval in spring 2017.
Responsible Office: ICMSSR
Due Date: April 25, 2017

FCMSSR Action Item 2016-2.6. Consider altering the "Vision" statement of the Federal Meteorological Coordination Strategic Plan to include the need for "extended weather forecasting."
Responsible Office: ICMSSR
Due Date: April 25, 2017

FCMSSR Action Item 2016-2.7. Implement recommendation for the Interagency Meteorological Observing Framework:

a) Continue to develop the NOSC as an interagency asset.
b) Request NOSC consider inviting OFCM to participate on the NOSC in Observer Status. (Completed)

Responsible Office: NOAA
Due Date: December 31, 2016

FCMSSR Action Item 2016-2.8. Provide information on the FCMSSR, OFCM and the Federal Weather Enterprise to the FCMSSR members so it can be included in Administration transition summaries.
Responsible Office: OFCM
Due Date: December 31, 2016