NCEP Synergy Meeting Highlights: June 25, 2018

This meeting was led by Mark Klein (WPC) and attended by Steven Earle (NCO); Eric Rogers, Jacob Carley, Mark Iredell, Fanglin Yang, and Geoff Manikin (EMC); Israel Jirak and Andy Dean (SPC); Curtis Alexander (ESRL); Scott Scallion (MDL); Jack Settelmaier (SR); Bill Ward (PR); Brian Cosgrove (OWP), Jason Taylor (NESDIS), and Bill Bua (COMET)

1. NOTES FROM NCO (*Steven Earle)*

NAEFS
CCPA
EKDMOS - 30-day stability test ongoing; Implementation scheduled for July 18
https://www.weather.gov/media/notification/pdfs/scn18-50naefs_gefsaaa.pdf
https://www.weather.gov/media/notification/pdfs/scn18-51ccpa_aaa.pdf
https://www.weather.gov/media/notification/pdfs/scn18-53ekdmosaab.pdf

RAP/HRRR - 30-day stability test ongoing; Implementation scheduled for July 11
https://www.weather.gov/notification/notification/scn18-58rap_hrrr.pdf

HYSPLIT - 30-day stability test expected to start in mid-July with implementation at the end of August

GLOFS - 30-day stability test ongoing; Implementation scheduled for July 16
https://www.weather.gov/media/notification/pdfs/scn18-65nos_glofv2_0.pdf

HWRF
HMON - Canned testing is ongoing; implementation scheduled for July 9
https://www.weather.gov/media/notification/pdfs/scn18-59hmon.pdf

EKDMOS
GMOS
NBM - Expected to start the 30-day stability test in early July with implementation at the end of August

2. NOTES FROM EMC

2a. Global Modeling:

It was mentioned at the last meeting that the hope was to extend the FV3GFS evaluation period and delay the implementation until Q2FY19. Approval was given by upper management to plan for February 2019 implementation. This can be achieved if the formal evaluation period ends in the middle of September. The

up-to-date timeline can be found on the official FV3GFS evaluation page at http://www.emc.ncep.noaa.gov/users/Alicia.Bentley/fv3gfs/

2b. Mesoscale Modeling:

v2.7 RTMA/URMA/RTMA-RU:

The evaluation parallel began on May 9th and ended on June 7th. EMC has received evaluations from (as of 6/21): MDL, AWC, WPC, Southern Region, Western Region, and Alaska Region. All evaluations have been 'thumbs up'. The EMC CCB meeting is the 25th (will have occurred earlier today). The science briefing to the NCEP OD is the 27th (Wed.) at 2 pm. At this time we expect implementation to occur October 2018.

RAPv4/HRRRv3 :

Implementation scheduled for July 11, 2018

2c. Marine Modeling:

* The ice concentration analysis started using AMSR2 on 19 June.
* RTG SST is on retirement track now. One last implementation might go in this September, to include VIIRS SSTs.
* Working progressing towards updating the RTOFS-G to include better sea ice component. Implementation late 2019 at the earliest.

3. EARTH SYSTEM RESEARCH LAB *(Curtis Alexander)*

- NCO/EMC RAPv4/HRRRv3
  - 30-day stability test ends today
  - 11 July 2018 implementation
  - Additional diagnostics will be available
  - RAP 39hr fcsts at 03z, 09z, 15z, 21z, 21 hrs otherwise
  - HRRR-CONUS 36hr fcsts at 00z, 06z, 12z, 18z, 18 hrs otherwise
  - HRRR-Alaska, 36hr fcsts at 00z, 06z, 12z, 18z
  - HRRR-Alaska, 18hr fcsts at 03z, 09z, 15z, 21z

- ESRL/GSD RAPv5/HRRRv4
  - https://rapidrefresh.noaa.gov/RAP
  - https://rapidrefresh.noaa.gov/hrrr/HRRR
  - Fractional lake ice-concentrations (GFS-based)
  - Assimilation of moisture observations above 300mb

    - Change to revised albedo/land use from MODIS
    - Remove mosaic snow building/trimming for 2mT < -2C
    - Update cloud water number concentration from RAP to HRRR initialization (default value that is too low)
    - WRFv3.9.1 code base with revised physics:
        - Improved EDMF mixing length
        - Improved sub-grid clouds
        - Improved aerosol handling

- ESRL/GSD HRRRE, now re-configured for Flash Flood Experiment
    - Nine forecast members + ensemble products
    - 12z, 18z, 21z, half-CONUS forecasts to 48, 18, 18 hrs
    - 00z full-CONUS forecasts to 36 hrs
    - Leverages HRRR-TLE post-processing for product generation
    - https://rapidrefresh.noaa.gov/hrrr/HRRRE

- ESRL/GSD HRRR-Smoke runs:
    - Run every six hours out to 36 hrs over CONUS and Alaska
    - Produces smoke plume estimates from VIIRS fire data
    - Merging with experimental HRRRv4 prototype in June (underway)
    - https://rapidrefresh.noaa.gov/hrrr/HRRRsmoke

4. NATIONAL OCEAN SERVICE:

5. FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS

5a. MDL (*Scott Scallion*)

- ***NBM:*** MDL has turned over the NBM V3.1 code package to NCO and it will likely be running in parallel around July 7th on the Dell with a scheduled Implementation date of August 14th. An SCN will be issued within the next two weeks. The code package now includes the flexibility to run the NBM V3.1 on the Cray or the Dell. Running on the Dell will likely speed-up the NBM hourly runtime by several minutes if we were to receive permission to run on that machine. Development work continues on NBM V3.2 which will continue to populate NWS Program service gaps such as FireWx, Aviation, and Water Resources. Additional Probabilistic information will be added to V3.2 (i.e., PQPF, Snow Amount Exceedance, MaxT/MinT)

- ***LAMP/GLMP***: MDL continues to work on the R2O for the following: upgrading the LAMP/GLMP ceiling and visibility guidance; adding 1-hr POP (POP1) guidance to LAMP/GLMP; extending the ceiling, visibility, and POP1 guidance out to 36 hours; and expanding the domains of the gridded guidance of those elements to match that of the NBM. We plan to have an evaluation period in August, and are on track for implementation in early January. This summer, we will be evaluating the impact of the GFS Upgrade on the current LAMP guidance.

- ***GMOS***: Work is underway to produce gridded analyses of ceiling, visibility, and obstruction to vision for use by the NBM. These analyses will be produced for all four GMOS domains (CONUS/AK/HI/PR) and will be the first analyses from NAMMOS.

- ***BMOS***: BMOS developers are working with the WISPS developers to ensure the functionality necessary will be available. Work is underway to synchronize development station lists and tables among different flavors of MOS.

- ***ETSS/P-ETSS:*** MDL continues to run and analyze retrospectives to build a good case for the science review planned for the end of July.

- ***P-Surge:*** During pre-season testing, some bugs were discovered. MDL has been working with NHC to determine the best fix.

5b. NCEP Centers

- Weather Prediction Center (WPC):

- Storm Prediction Center (SPC):

- National Hurricane Center (NHC):

- Ocean Prediction Center (OPC):

- Aviation Weather Center (AWC):

- Climate Prediction Center (CPC):

- Space Weather Prediction Center (SWPC):

5c. NWS Regions

- Pacific Region (PR):

- Alaska Region (AR):

- Western Region (WR):

- Southern Region (SR):

- Central Region (CR):

- Eastern Region (ER):

6. Office of Water Prediction

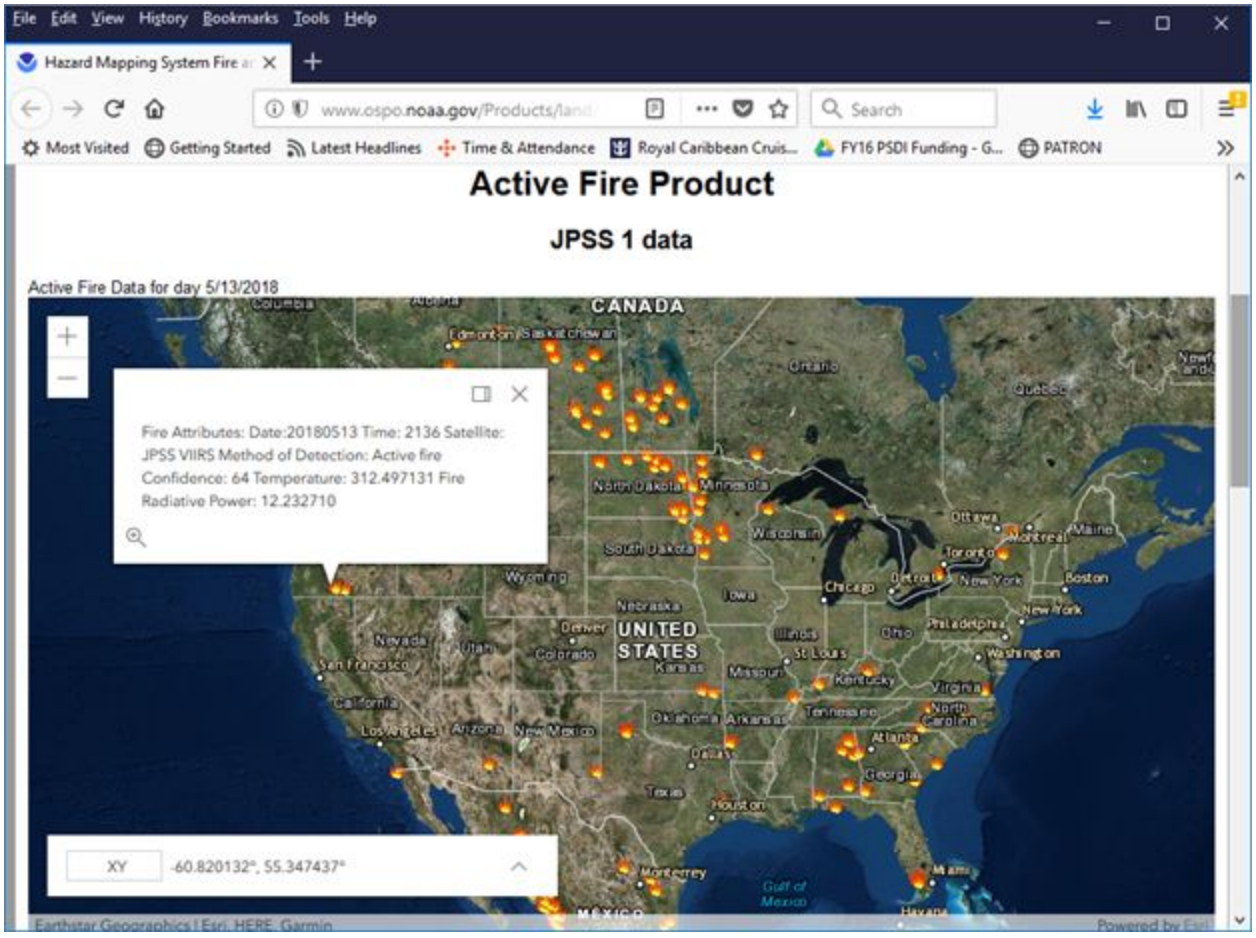
- Operational NWM V1.2 participating in WPC FFAIR experiment
- Development continuing on NWM V2.0, scheduled for code handoff in October and Implementation in Jan/Feb.

7. NESDIS

GOES-17 ABI Thermal Performance: The GOES-R Program is currently addressing a performance issue with the cooling system encountered during commissioning of the GOES-17 Advanced Baseline Imager (ABI) instrument. The cooling system is an integral part of the ABI and did not start up properly during the on-orbit checkout. A team of experts from NOAA, NASA, the ABI contractor team and industry are investigating the issue and pursuing multiple courses of possible corrective actions. The issue affects 13 of the infrared and near-infrared channels on the instrument. The

visible channels of the ABI are not impacted. Currently, the ABI can only achieve the required temperatures for these channels for a portion of the 24 hour day. The channels with the shortest wavelengths (two visible and one near-IR) are functional with current level of cooling system performance. The impact to post-launch testing and product validation schedule is not yet known. (https://www.nesdis.noaa.gov/content/scientists-investigate-goes-17-advanced-baseline-imager-performance-issue)

NOAA-20 Active Fire Approved for Operations: On June 20 2018, the Satellite Products and Services Review Board (SPSRB) approved NOAA-20 Active Fire to go into operations. This implementation will meet the JPSS Level 1 Requirements Document (L1RD) Supplement. This is the first NOAA-20 non-KPP (Key Performance Parameter) product to go into operations.



(Z. Cheng, 301-683-3233)

Jason-2 is 10 Years Old: On June 20, Jason-2 marked its 10th year in orbit. Initially intended for a three-to-five-year mission, the satellite is still operating after twice its design life. Jason-2 has enabled numerous scientists all over the world to gain new insights into the ocean phenomena playing a key role in our planet's changing climate.

The Jason ground segment that also includes Jason-3 delivers data in less than three hours, allowing NOAA and EUMETSAT to feed measurements into their weather prediction models, providing early warning of the intensity of tropical cyclones. (D. Donahue, 301-683-3236)

The next Synergy Meeting is scheduled for Monday, July 30, at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.

Telecon**: 1-866-763-1213**
Passcode**: 524234#**