NCEP Synergy Meeting Highlights: October, 2017

Due to a last minute conflict, no meeting was held during the month of October, but this document contains the information provided by the various Centers as of November 7, 2017.

1. NOTES FROM NCO

HiResW/HREF: Approved for implementation on November 1
　　http://www.nws.noaa.gov/os/notification/scn17-106hires_href.htm

SWMF: NCEP OD Briefing scheduled for October 31 with proposed implementation on November 8.

NWPS: 30-day stability test is in progress. Scheduled implementation is November 28.
　　http://www.nws.noaa.gov/os/notification/scn17-84nwpsupgradeaac.htm

LAMP/GLMP: 30-day stability test is in progress. Scheduled implementation is Dec 5.
　　http://www.nws.noaa.gov/os/notification/scn17-101lamp2_1.htm

ETSS/P-ETSS: 30-day stability test is in progress. Scheduled implementation is Dec 5.
　　http://www.nws.noaa.gov/os/notification/scn17-63etss_petssaab.htm

RTMA/URMA: 30-day stability test expected to restart on November 1 with scheduled implementation on December 12.
　　http://www.nws.noaa.gov/os/notification/scn17-63etss_petssaab.htm

NOS GoM / ROMS: 30-day stability test expected to start on November 6 with implementation on December 19.
　　http://www.nws.noaa.gov/os/notification/scn17-108nos_gomofs.htm

Global Wave: 30-day stability test expected to start on November 23.

2. NOTES FROM EMC

2a. *Global Modeling*:
　　　　FV3 development--two real-time parallels running
　　　　　　One with own data assimilation
　　　　　　One forecast only
　　　　FV3 beta version official parallel scheduled to begin January 2018
　　　　　　With GFDL microphysics
　　　　　　Implementation Q3FY18

FY 19 FV3GFS configuration to be finalized Q1FY19
    Increased resolution, advanced physics
    Real time and 3 year retrospective Q2FY19
    Implementation Q2FY19

2b. Mesoscale Modeling

RTMA/URMA/RTMA-RU:

v2.6 RTMA/URMA/RTMA-RU package on track for Nov. 14th implementation.

A regular method to notify RTMA devs of bad obs (mesonet or METAR) to get them placed on the SDM reject list is being finalized in coordination with a SOO group.

Dev parallel for v2.7 is up and RTMA devs are validating/testing components. We hope to share this early parallel with the broader community soon. This upgrade, among many changes, includes modifications to the background error covariance to allow closer fits to the observations. The official parallel for evaluation is planned to start in early December, with an expected implementation of May 2018.

V2.6 Update (10/27/2017) : a problem with the bias correction for temperatures in the RTMA-RU was detected which necessitated a crisis fix, thus the test clock for NCO's 30-day IT test will be reset. The new implementation date will be sometime in December.

HIRESWv7/HREFV2: Implementation is scheduled for 1 November 2017

Changes : Increase horizontal resolution of existing members from 4.2 km to 3.2 km; add "NSSL" WRF-ARW member (to operationalize Storm-scale Ensemble of Opportunity (SSEO); enhance HREF ensemble products, add OCONUS product generation. For details go to the HIRESWv7/HREFv2 NCEP OD briefing

RAPv4/HRRRv3:   This package, containing multiple enhancements to improve cloud and visibility forecasts and reduce excessive coverage of convection, will also have HRRR-Alaska added, run every 3 hours.   In addition, the 00/06/12/18z HRRR cycles will be extended to 36 hours, while the 03/09/15/21z RAP cycles will be extended to 39 hours.   The official evaluation period will begin in roughly 2 weeks.

2c. Marine Modeling

3. EARTH SYSTEM RESEARCH LAB

4. NATIONAL OCEAN SERVICE

5. FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS

5a. MDL
- NBM V3.1 is scheduled to become operational in July of 2018. We are continually filling in NWS Service Program gaps. The primary development period is August through October 2017. Here is a listing of many of the weather elements being addressed in NBM V3.1.
    - **Hydrology:** Leverage OAR Stochastic Quantile Mapping technique. Add QPF01 to OCONUS sectors. Add QPF01 to OCONUS sectors.   Add 1 and 6 hour snow, sleet, and ice accumulations to weather grid inputs.
    - **Marine:** Add NAVGEME to Oceanic Winds. Add significant wave heights to all 5 sectors. Add 30-m and 80-m winds, 10-m gusts, and PMSL.
    - **Aviation Weather:** Add Echo Tops (18 dBZ) (1-36h)) and Low Level Wind Shear (LLWS). Add ceiling, visibility, lowest cloud base to OCONUS sectors.
    - **Fire Weather:** Add Mixing layer, Transport Wind (i.e., average wind speed in the mixing layer), and Haines Index.
    - **Tropical:** Add HWRF and HMON to improve background field for Tropical TCM forecasts.
    - **Thunderstorms:** Increase ProbThunder temporal resolution to 1 hour through 36 hours.
    - **Additional Models**: Add REPS, RDPS, ACCESS-G, NAVGEMD

- EKD-MOS - handed off to NCO, but on hold
    - Science briefing 5/30 - Approved for handoff.
    - To include expanded CONUS domain for NBM input (EKD-MOS only)

- ○ Includes updated Ceiling/Sky Cover Equations

- New GFS/NAM MOS visibility/obstruction to vision, NAM MOS ceiling/sky cover and PoP/QPF updates briefed to Bill L., approved for implementation, and handed off to NCO on 10/13.
    - ○ Implementation to be "bundled" with GFS MOS cig/sky, which was approved for implementation in May but held.
    - ○ Neither development contains data from absolute latest versions of the models (i.e. no NAM v4 or GFS v14).
        - ■ Nonetheless, tests suggest significant improvement over existing systems.
        - ■ Updates remove last traces of eta model data from NAM dependent samples.
    - ○ Scheduled implementation on WCOSS late January 2018.

- EKDMOS V2.2
    - ○ Add other MOS forecasts to EKDMOS (GFSMOS, NAMMOS, ECMMOS, EMCEMOS, LAMP)
    - ○ Expand the Alaska domain to match the NDFD domain
        - ■ Continue to disseminate clipped grids
    - ○ Add forecasts for apparent temperature, PQPF, and wind speed
    - ○ Operationalize text products
    - ○ Update CONUS unified terrain and land/water mask
    - ○ Code freeze is set for January 30, 2018
    - ○ Code handoff to NCO is set for March 14, 2018

- GMOS
    - ○ Add new stations to CONUS analysis
    - ○ Expand CONUS and Alaska domains to match the NBM domains
        - ■ Continue to disseminate clipped grids
    - ○ Update unified terrain and land/water mask for CONUS, Alaska, and Hawaii
    - ○ GMOS update code freeze is set for January 30, 2018
    - ○ GMOS update code handoff to NCO is set for March 14, 2018
    - ○ 5km GMOS was removed from the operational jobstream on July 18; 2.5km GMOS replaces that product in all applications going forward.

- P-ETSS 1.0 / ETSS 2.2 - The science briefing on Thur Oct 12 was successful and we've provided NCO with the latest version. NCO is currently testing it and plans to (re)start the 30 day IT test on Oct 27.

- P-Surge 2.7 - The hardest programming improvement has fallen behind schedule. We're meeting with NHC (primary customer) on Oct 27 to discuss re-scoping the implementation. We've put on hold the EE meeting

(scheduled Oct 25) until after that discussion.

- LAMP/Gridded LAMP (updates in blue)
  - Implementations:
    - The next LAMP/GLMP implementation (v2.1.0) will include the following changes:
      - new LAMP 1-hr convection and lightning guidance,
      - modifying LAMP to use the most recent METAR observation including SPECIal observations,
      - adding stations to the LAMP forecasts to match the stations available in GFS MOS,
      - running LAMP/GLMP every 15 minutes for ceiling and visibility guidance out to 3 hours in time for AWC
    - The 30-day IT test for this started on September 26, 2017. However, a bug was found that had a very minimal impact on the 1-h convection and lightning guidance. A slide package was creating explaining the bug and the impact on this implementation. That package is available upon request to anyone interested. The 30-day IT test was restarted on 10/23/17 and we expect to implement this at the end of November (date TBD).

  - Experimental Data:
    - MDL continues to produce hourly experimental updated LAMP convection and lightning guidance which uses HRRR, MRMS, and Total Lightning inputs and which covers 1-hr valid periods instead of the current operational 2-hr valid periods. Images of this guidance are available at: http://www.weather.gov/mdl/lamp_experimental
    - MDL is producing updated LAMP/GLMP ceiling and visibility guidance every 15 minutes out to 3 hours using the most recent hourly observations, including "Special" observations. The experimental 15-minute LAMP and GLMP data and images are also available at the LAMP experimental website: http://www.weather.gov/mdl/lamp_experimental

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

7. NESDIS

Jason-2 Sea Surface Height Anomalies as input to the Satellite Ocean Heat Content Suite: On October 13, the Jason-2 spacecraft was successfully recovered from Safe Hold Mode (SHM) and operational Jason-2 product processing resumed. Jason-2 Sea Surface Height Anomaly (SSHa) data input to the Satellite-derived Ocean Heat Content processing resumed on October 19. Jason-3, SARAL/AltiKa, and Cryosat-2 SSHa inputs to the OHC processing continue as well. (Contact: David Donahue, 301-683-3236)

GOES-16 Derived Motion Winds (DMW) BUFR Toolkit is approved for the operation: On October 18, 2017, the Satellite Products and Services Review Board (SPSRB) declared GOES-16 Derived Motion Winds BUFR Toolkit operational. It is a first successful project which is across three existing Enterprise Systems (GOES-R Ground System, PDA Enterprise System, and NDE Enterprise System) in NESDIS. The GOES-16 DMW products are derived from GOES-16 ABI channels 2, 7, 8, 9, 10, and 14. The BUFR Toolkit is used to convert the GOES-16 DMW products from NetCDF4 to BUFR formats that serve the needs of NWS/NCEP, Navy Research Lab/The Fleet Numerical Meteorology and Oceanography Center (NRL/FNMOC), EUMETSAT, and the Numerical Weather Prediction (NWP) centers. The GOES-16 DMW BUFR products will be generated in NDE production system and distributed by PDA.

Satellite derived motion winds are one of the key meteorological parameters for weather forecast, meteorological studies and climate applications. The operation of GOES-16 DMW BUFR Toolkit will ensure the availability of GOES-16 DMW BUFR products before the operation of GOES-16 in December. The timely readiness of GOES-16 DMW BUFR products will help all NWP centers including NWS/NCEP, ECMWF, UK Met Office, NRL/FNMOC, etc. implement the production evaluation with their models and transition smoothly from GOES-13 to GOES-16. (Hongming Qi, 301-683-3238)

GOES-16 User Applications Workshop, Kansas City, MO November 14-17, 2017: The first National Weather Service (NWS) GOES-16 User Applications Workshop will be held at the NWS Training Center in Kanas City, MO from November 14-17, 2017. The meeting is sponsored by the GOES-R Program, the NWS Operations Proving Ground (OPG), and the NWS Office of the Chief Learning Officer (OCLO). The purpose of the workshop is to enable NWS Weather Forecast Office (WFO), River Forecast Center (RFC), Center Weather Service Unit (CWSU), and National Center forecasters to share applied content on the use of GOES-16 in forecast and warning operations. (Kathryn W. Mozer, 301-286-3647)

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8. Offline Discussions
Topic:
Lead:

The next Synergy Meeting is scheduled for Monday, November 27 at 2:30 pm EST in NCWCP conference room 2890, with remote teleconferencing capability.

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