NCEP Synergy Meeting Highlights: January 26, 2018

This meeting was led by Mark Klein (WPC) and attended by Steven Earle (NCO); Eric Rogers, Ben Blake, Jacob Carley, and Geoff Manikin (EMC); Israel Jirak and Steve Weiss (SPC); Dave Rudack (MDL), Curtis Alexander (ESRL), Ed Myers (NOS), Jack Settelmaier (SR), Brian Miretsky (ER), Kelsey Jeffers (NESDIS) and Bill Bua (COMET).

1. NOTES FROM NCO (*Steven Earle*)

ESTOFS Micronesia - Implementation scheduled for February 13. SCN:
   http://www.nws.noaa.gov/os/notification/scn18-05estofsmicronesia.htm

National Water Model - 30-day starting January 30. Implementation scheduled for March 6. SCN will be available shortly.

SPCSREF - 30-day starting January 30. Implementation scheduled for beginning of March

NAEFS, CCPA and EKDMOS - Merged as a single bundle with expected 30-day starting at the end of February.

2. NOTES FROM EMC

2a. Global Modeling:

00z Ops GFS vs FV3GFS comparison web page (CONUS, Alaska, North America) at
http://www.emc.ncep.noaa.gov/mmb/gmanikin/fv3gfs/fv3images.html

The FV3GFS is still being initialized off of the GFS. EMC is getting ready to start fully cycled data assimilation using FV3 based GDAS and GFS by mid February. FV3GFS Beta Code hand-off to NCO is scheduled for March 20, 2018, with the NCO system expected to be up and running my mid-May.

2b. Mesoscale Modeling

RAPv4/HRRRv3 evaluation ended on January 21, 2018. EMC's web page on this implementation is at
http://www.emc.ncep.noaa.gov/mmb/bblake/rap_hrrr/;
NCEP Director's briefing scheduled for 2/2 with implementation scheduled for early/mid May 2018

- RTMA/URMA/RU-RTMA v2.6 implemented on December 13, 2017
- RTMA developers are in the process of updating codes/scripts for the RAPv4 and HRRRv3 implementation.
  - This will include the update to the AK terrain
- Next RTMA/URMA/RU-RTMA upgrade (v2.7) slated for October 2018; tentative changes include:
  - Improve RTMA-RU latency
  - Expand ceiling/sky analysis to OCONUS domains
  - Improve ceiling/visibility analysis
  - Fill gaps in precip analysis near coastlines
  - Update background error covariance for closer fit to data when first guess is highly variable
  - Remove legacy coarse-resolution grids
  - Use HRRR-AK in AKRTMA/AKURMA

- HREF v2.1 : EMC has tentative plans to implement an upgrade to HREF in the October-December 2018 time frame. Possible changes include adding the extended HRRR runs, adding additional severe wx fields to the NAM nest for it to be consistent with Hiresw model output (such as -10C reflectivity, 100-1000 mb hourly max updraft speed, 2-5 km AGL hourly min updraft helicity, and others), refine the generation of probabilistic output, and add bias correction.

2c. Marine Modeling

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

- RAPv4/HRRRv3 EMC science evaluation concluded (mid-Nov to mid-Jan):
  - EMC CCB approval
  - NCEP director briefing this Friday (2/2)
  - 15 May 2018 operational implementation (estimate)
  - 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

- WWE real-time experimental ESRL/GSD runs:
  - RAPv4 (will become RAPv5 prototype) 09/21z 51hr
  - https://rapidrefresh.noaa.gov/RAP

- ○ HRRRv3 (will become HRRRv4 prototype) 00/12z 48hr
- ○ https://rapidrefresh.noaa.gov/hrrr/HRRR

- ○ HRRRE (55% CONUS), nine members + ensemble products
  - ■ 00z 36 hr forecast
  - ■ 09z 51 hr forecast
  - ■ Leverages HRRR-TLE post-processing for product generation
  - ■ https://rapidrefresh.noaa.gov/hrrr/HRRRE

- ● Real-time experimental 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
  - ○ Plan to merge with experimental HRRRv4 prototype in the next month
  - ○ https://rapidrefresh.noaa.gov/hrrr/HRRRsmoke

4. **NATIONAL OCEAN SERVICE** *(Ed Myers)*:
   - ● An update to NOS' Operational Forecast Systems (OFS) was made on January 10. This included upgraded versions of the FVCOM and ROMS models, as well as an update to NOS' Coastal Ocean Modeling Framework.
   - ● The Gulf of Maine OFS became operational on January 10 as well. GoMOFS is a ROMS-based model that provides users with real-time nowcasts and forecast guidance of surface water levels and 3-D fields of water currents, water temperature, and salinity out to 72 hours.
   - ● Upcoming operational implementations include:
     - ○ ESTOFS-Micronesia
     - ○ Upgrading the existing Great Lakes OFS to have more robust operational capabilities
     - ○ Upgrading the Hurricane Surge On-demand Forecast System, including a water level bias correction and increased ensemble capabilities.

5. **FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS**

   5a. MDL *(Dave Rudack)*
   - ● LAMP/GLMP: the LAMP/GLMP implementation which will add 1-hr convection and lightning guidance, as well as produce 15-minute updates of guidance for ceiling and visibility out to 3 hours, is on track to be implemented into NWS operations on January 25, 2018.
   - ● EKDMOS: Development for V2.2 (expanded CONUS and AK grids for NBM; inclusion of additional MOS forecasts; add PQPF, wind speed, and apparent temperature forecasts; addition of text products) has been completed. Testing is currently being conducted along with reforecasts for verification.
   - ● GMOS: Expanded CONUS grids to support the NBM have been completed.

Development of expanded Alaska grids is expected to be completed on time (1/30/18). Testing and reforecasts for verification are expected to begin soon.

5b. NCEP Centers
- Weather Prediction Center (WPC):

- Storm Prediction Center (Israel Jirak, Steve Weiss):
    - Calibrated thunderstorm probabilities (including the addition of hourly probabilities for input to NBM) are being updated in the SPC SREF post-processing job. NCO is nearly ready to begin the official 30-day parallel test.
    - The 2018 HWT Spring Forecasting Experiment is scheduled for five consecutive weeks from April 30 - June 1.

- 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):
    - Now that V2.6 of RTMA/URMA is operational, what is the expected timeline for the rollout of the observational "blacklisting" form for SOOs to help QC the database?
        - Been rolled out. Send Jacob Carley an email with any questions.
    - Any chance of getting output fields created in the NAM Fire Wx nest output to match those in NBM v3.1 (e.g. Transport Winds) ?
        - Looks like the majority, if not all, of these fields are output from the NAM Fire Wx Nest

- Central Region (CR):

- Eastern Region (ER):

6. Office of Water Prediction

7. NESDIS

GOES-13 GVAR and LRIT Disabled:
On January 8, 2018 at 1532 UTC, GOES-13 GVAR and LRIT was disabled and the satellite began drifting on January 10th to its storage location at 60 degrees West. On January 31, 2018, GOES-13 will reach storage location at 60 degrees West. A number of satellite derived products using GOES-13 data have been impacted or become unavailable. NOAA/NESDIS plans to produce a set of equivalent products from the new GOES-East satellite (GOES-16); however, in some cases legacy products have been degraded or discontinued entirely as a result of the loss of GOES-East coverage. Therefore, all users should review our product transition status documentation that outlines those changes and/or discontinued products. This information is accessible directly via the following link: (http://www.ospo.noaa.gov/Operations/GOES/16/GOES-13toGOES-16_Product_Mapping_Latest.pdf). Additionally, to facilitate user awareness and effectively prepare for the transition from GOES-13 to GOES-16 GOES-East operations, the Office of Satellite and Product Operations (OSPO) has established the following informational webpage on the transition: (http://www.ospo.noaa.gov/Operations/GOES/16/transition.html). Users may reference this webpage and refer to ESPC notifications for the latest updates on the transition. As of 1700 UTC on December 18, 2017, GOES-16 is the official GOES-East satellite stationed at 75.2 degrees West. (J. Taylor, 301-683-3248)

GOES-16 SST Data Successfully Replaces GOES-13 SST Data:
On Wednesday, January 10, GOES-16 Sea Surface Temperature (SST) data began being incorporated into the 5km global blended SST products, replacing GOES-13 SST data. This will continue the excellent temporal coverage that geostationary SST data provide for the blended SST products, maximizing the chances of obtaining cloud-free scenes which are absolutely essential when retrieving SSTs using infrared bands from radiometers. (J. Sapper, 301-683- 3234)

Jason-2 and Jason-3 Product Outage:
Starting around 00Z on January 20, all Jason-2 andJason-3 product processing began failing. The root cause of the anomaly was an overflow of the counter used by the processing software to measure the time. It reached a maximum value threshold preventing the generation of Near Real-Time (3-5 hour expected latency) Jason-2 and Jason-3 Operational Geophysical Data Records (OGDRs) containing sea surface height, sea surface height anomaly (SSHA), wind speed, and significant wave height products used for ocean forecasting and wave model verification. Intermediate (1-2 day expected latency) Geophysical Data Records (IGDRs) from the Naval Oceanography Office (NAVO), which provide SSHAs for input to satellite-derived Ocean Heat Content (OHC), are also impacted. On January 23, France's Centre National d'Etudes Spatiales (CNES) provided a software patch which was applied at NOAA and EUMETSAT to resume normal product processing. Jason-2 Data Outage: 89 hours, 12 mins secs. Jason-3 Data Outage: 91 hours, 41 mins, 18 secs. (D. Donahue, 301-683- 3236)

The next Synergy Meeting is scheduled for March 12, 2018 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.

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