NCEP Synergy Meeting Highlights: April 24, 2017

This meeting was led by Mark Klein (WPC) and attended by Vijay Tallapragada (EMC), Glenn White (GCWMB); Eric Rogers (MMB); Israel Jirak (SPC); Mike Brennan and Richard Pasch (NHC); Scott Scallion (MDL); Jack Settelmaier (SR); Mike Staudenmaier (WR); Bruce Smith (CR), Jason Taylor (NESDIS); and Bill Bua (COMET).

1. NOTES FROM NCO (*Steven Earle)*

ESTOFS-Atlantic - Implementation scheduled for April 25, pending today's approval
http://www.nws.noaa.gov/os/notification/scn17-34extratropical.htm

RTMA/URMA - Implementation scheduled for May 2
http://www.nws.noaa.gov/os/notification/scn17-17rtma_urma.htm

NWM - Implementation scheduled for May 4.
http://www.nws.noaa.gov/os/notification/scn17-41natl_water_model.htm

NHC Guidance Suite (NHC only) - Scheduled to freeze code this week and implement at the end of May; Product termination below will occur on May 10.
http://www.nws.noaa.gov/os/notification/scn17-47nhc_products_termination.htm

GFS - 30-day IT stability test scheduled to begin in late May; SCN will be released in May with full details, with a currently anticipated implementation in mid-late June.

CMAQ - CONUS only upgrade. Evaluation and IT stability test expected to start this week (4/24)

PETSS/ETSS - Evaluation and IT stability expected to start in early May

Blend - Evaluation and IT stability expected to start at the end of May

GLWU - Evaluation and IT stability expected to be during the month of June

2. NOTES FROM EMC

2a. Global Climate and Weather Modeling Branch (GCWMB) (Glenn White):

FV3
The FV3 model is being tested and developed. A version of the global FV3 with a 3 km nest and a stretch coordinate run at 0Z will produce forecasts for the HWT spring

experiment in Norman. There will be two versions, one with the Thompson microphysics developed at Oklahoma University and one with GFDL microphysics. The results of these tests will determine whether this version of the FV3 or the 13 km global will be run for the summer flash flood experiment (FFaIR) in WPC. A fully cycled version of the global FV3 is being developed and it is hoped that it will be ready by Aug. 1 for a real-time parallel. A back-up date is Jan.1, 2018 when a real time parallel and retrospectives will be run. If the tests go well, the operational global model may switch to the FV3 dynamic core in April of next year, otherwise the GFS NEMS will remain operational, while the FV3 continues to run in parallel. The FV3 will be operational by April 2019. A page is available on VLAB describing these plans and the computer codes will be ported to VLAB for more open access. Also next spring the use of data from GOES-16, JPSS and perhaps COSMIC will be implemented in the operational global system.

A reorganization of EMC will occur in the very near future, eliminating separate global and mesoscale branches.

2b. Mesoscale Modeling Branch (MMB) *(Eric Rogers)*

RTMA v2.5, PCPANL v2.3 : To be implemented on May 2. 2017:

Expand CONUS grid westward; Improve CONUS ceiling analysis by using HRRR as a background over CONUS; Elevate CONUS ceiling analysis from experimental to operational; Switch from NAM to RAP background for visibility in Alaska Move mesonet reject lists from GSI fixed file to SDM-reject/edtbft; Add 24 hour precip total for URMA-CONUS; Add precip URMA for Alaska and Puerto Rico; Stage IV 24h total precip now mosaicked directly from 24h QPE from Northwest RFC and Missouri Basin RFC, 6h QPE from Colorado Basin and California/Nevada Basin RFCs, and 1h QPE from the other 8 central/eastern RFCs (currently it is a simple sum of the 6h Stage IV)

CMAQ v5 : Implementation planned for Summer 2017:

Move to Cray, upgrade with improved aerosol chemistry and emissions with 2011 base year estimates; update BlueSky smoke emission system; include 24-h pre-analysis for smoke initializationm use NGAC aerosol lateral boundary conditions; update PM Bias correction

RTMA v2.6, PCLANL v3.0 : Implementation planned for Fall 2017

Implement “GLERL adjustment” to coastal obs near Great Lakes; Add cloud cover, cloud ceiling analysis, unified terrain for OCONUS; 15-minute CONUS RU-RTMA output; Add dew point, wind, ceiling and visibility to airport listings for FAA; Hourly URMA for ConUS and Puerto Rico (requirement from MDL/NBM); Add significant wave height analysis; start use of UrbaNet observations; Loosen obs QC tolerances on

mesonet temperature and moisture; Add min/maxRH analysis (all domains); Use EMC/GFE unified terrain and land/sea mask for OCONUS domains; Hourly QPE from Puerto Rico; For CONUS: currently the Stage IV hourly does not cover Northwest RFC and CA/NV RFC domains (due to lack of hourly input). For this implementation, use the hourly gauge-corrected MRMS to dis-aggregate the 6-hourly QPE from Northwest RFC and CA/NV RFC into hourly amounts, then combine them with the hourly QPEs from the other 10 RFCs, to cover the entire CONUS. Fall 2017

SREF v8 : Implementation scheduled for Fall 2017

Move SREF to Cray; update to latest version of WRF/NMMB model, no science changes, last SREF implementation

HREF v2/HIRESW v7 : Implementation scheduled for Fall 2017

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.

RAP v4 / HRRR v3 : Implementation scheduled for Winter 2018

Upgrade to WRF 3.8.1; add storm-scale hybrid DA (tentative); Alaska HRRR (tentative); upgrade MYNN PBL and surface physics; improve surface data and cloud assimilation; enhancement of land-sfc model

2c. Marine Modeling and Analysis Branch (MMAB)

Ocean: No updates
Waves: The Great Lakes code has been handed over, operational in a few months.

3. EARTH SYSTEM RESEARCH LAB

4. NATIONAL OCEAN SERVICE:

5. FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS

5a. MDL (*Scott Scallion*)

- ECMWF-MOS was handoff to NCO on 10/7/16 for updated temperature equations and new snowfall forecasts and was implemented on April 3rd for the 1200 UTC cycle.

- GFS-MOS and EKD-MOS - handoff to NCO on track for 5/19
  - EKD-MOS to include expanded CONUS domain for NBM input
  - Updated Ceiling/Sky Cover Equations

- Blend Version 3.0 development is complete and was handed off to NCO on March 28th. This major update includes:
  - Hourly updates based on any new model inputs
  - Blend short-term models (HRRR, LAMP, SREF, etc.) over the CONUS
  - Ceiling, lowest cloud base, and visibility over the CONUS
  - Add PoP12 and QPF over Alaska, Hawaii and Puerto Rico
    - Also includes CONUS PoP/QPF improvements that were previously part of Blend V2.1 update which not implemented, due to NCO resources and MDL's reprioritization.
  - Create blended inputs to support production of Weather, Snow Amount and Ice Accumulation grids

- P-Surge was implemented on Apr 18, 2017

- P-ETSS 1.0 / ETSS 2.2 was handed off on Feb 28. SPA's started actively working on it on Mar 14. Plan is for testing to begin early May with an implementation in June.

- LAMP/Gridded LAMP
  - 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 working on producing updated LAMP/GLMP ceiling and visibility guidance every 15 minutes using the most recent hourly observations, including "Special" observations. The current run which provides guidance for the next 25 hours will continue to run, but will now use the most recent observation instead of the "top of the hour" observation as a predictor. In addition, LAMP will provide extra runs per hour,

and those interim runs will provide guidance for only ceiling height and visibility and only going out 2-3 hours. The 15-minute LAMP/GLMP will also be handed off in May and implemented in September. Test data will be available for this shortly.

- Implementations:
  - The LAMP ceiling and visibility Meld forecasts was implemented into NWS operations on **1100 UTC April 4, 2017.**
    - http://www.weather.gov/mdl/lamp_experimental
  - The LAMP convection and lightning implementation has been delayed, and is now planned for handoff to NCEP/NCO in May 2017 with implementation around September 2017.

5b. NCEP Centers

- Weather Prediction Center (WPC):
  - Flash Flood and Intense Rainfall Experiment to be held the weeks of:
    - June 19-23
    - June 26-30
    - July 10-14
    - July 17-21

- Storm Prediction Center (SPC): HWT Spring Forecasting Experiment is scheduled to run five (5) consecutive weeks (M-F) beginning May 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):

- Central Region (CR):

- Eastern Region (ER):

6. Office of Water Prediction

-NWM V1.1 (first NWM upgrade) scheduled for implementation on May 5th
-NWM V1.2 science evaluation scheduled mid-May to mid-June, with implementation in

November

7. NESDIS

Meteosat-7 Decommissioned:
Since 2006, Meteosat-7 has been supporting the Indian Ocean Data Coverage (IODC) mission. On February 1, due to fuel limitations on Meteosat-7, EUMETSAT planned and transitioned the prime IODC mission to Meteosat-8. Following a parallel operational period, EUMETSAT decommissioned Meteosat-7 on March 31 (Meteosat-7 had a remarkable 20 year total mission). Starting from March 1, NESDIS/OSPO continues to provide processed Meteosat-8 imagery including various global composites to its users. To improve reliability, OSPO has submitted a Configuration Change Request (CCR) to transition Meteosat-8 level 1b data pulls from the NESDIS/STAR server to the Product Distribution and Access (PDA) system (the STAR server is only maintained 8x5). Once implemented, the PDA will be the primary source of Meteosat-8 level 1b HRIT data for imagery processing and the NESDIS/STAR server will be the backup source.
(John Paquette, 301-683- 3237)

GOES-R Update:
NWS SOO/DOH GOES-R Mode and Mesoscale Domain Request Process Prep Courses in Kansas City, MO are all complete. The Post-Launch Test mesoscale process is in place and being executed successfully. An exercise of the operational mesoscale procedure was conducted (April 10-14) and included cross-organizational participation from NWS OT&E organizers and forecast offices. GOES-16 EXIS science data were marked at Beta Validation Maturity: Due to this maturity achievement, EXIS L1b data were inserted to the GOES Rebroadcast (GRB) direct readout service on 3/23/17. (Kathryn Mozer, 301-286- 3647).

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8. Offline Discussions
Topic:
Lead:

The next Synergy Meeting is scheduled for Monday, May 22, 2017 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.

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