NCEP Synergy Meeting Highlights: March 27, 2017

This meeting was led by Mark Klein (WPC) and attended by Steven Earle (NCO); Glenn White (GCWMB); Israel Jirak (SPC); Mike Brennan (NHC) Scott Scallion (MDL); Brian Miretsky (ER); Jack Settelmaier (SR); Andy Edman (WR); John Eise (CR), and Curtis Alexander (ESRL).

1. NOTES FROM NCO (*Steven Earle)*

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

LMP/GLMP - Implementation scheduled for 3/29
http://www.nws.noaa.gov/os/notification/scn17-22lamp_glmpaaa.htm

ECMWF-MOS - Implementation tentatively scheduled for 3/30; Likely to delay at least a week. Internal NWS only

NHC Guidance Suite (NHC only) - Scheduled implementation in mid-May
http://www.nws.noaa.gov/os/notification/pns17-09chghurche77removal.htm

ESTOFS-Atlantic - Feedback due by COB today with implementation April 25
http://www.nws.noaa.gov/os/notification/scn17-34extratropical.htm

NWM - 30-day IT stability test scheduled to begin today. Implementation scheduled for early May. SCN to be released soon.

GFS - 30-day IT stability test scheduled to begin in May; Implementation scheduled for mid-June. SCN will be released in early May.

CMAQ - CONUS only upgrade. Evaluation and IT stability test expected to start at the end of April

PETSS/ETSS - NCO began work on the upgrade; Evaluation and IT stability expected to start in early May

2. NOTES FROM EMC

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

The Office of the Director has approved the implementation of the GFS NEMS. The 30-day IT test is now scheduled for May and implementation is scheduled for mid-June. The GFS NEMS continues to be run in parallel and should be available on a more timely basis than earlier. A review of this year's implementation and evaluation has been conducted and results will be

presented at the Model Evaluation Group meeting on Thursday.
The global branch will work to improve the implementation and evaluation for the next implementation.

The global branch would like to move ahead with enabling Globalhawk dropsonde data assimiliation in our Q3FY17 GFS upgrade package. It may be straightforward by removing rejection flags to allow the data coming into the tanks; the dropsonde data would be assimilated just like other P3/G-IV/AF dropsonde data. Kate Howard, Jason Sippel, and Daryl Kleist demonstrated the positive value of GH dropsonde DA for TC track and intensity forecasts from GFS and added benefit to HWRF due to assimilating GH drops in GFS. A presentation on the results is available. Also thanks to NHC for their feedback on our recent experiments with GH dropsonde data assimilation into GFS and endorsement for operational implementation of this capability. *"Based on experimental results documenting improvements in GFS tropical cyclone track forecasts due to the assimilation of Global Hawk dropsonde data, NHC supports EMC's effort to accelerate the assimilation of Global Hawk dropsonde data into the operational GFS for the upcoming hurricane season. The observed improvements are intuitive to us, and are consistent with older results that documented improvements to tropical cyclone track forecasts when similar data were collected from the NOAA P3 and G-IV aircraft."*

The global branch is now considering making 1/8th degree files available with a satellite data implementation next year. A number of variables are now available on ftp at full model resolution on a Gaussian grid in the flx file.

Current plans are to have a satellite data implementation next year and to implement the FV3 dynamic core in 2019.

2b. Mesoscale Modeling Branch (MMB) (No representative)

2c. Marine Modeling and Analysis Branch (MMAB) (Shastri Paturi).

Waves: The great Lakes wave code hand off will be happening during the first week of April.
Ocean: The RTOFS Atlantic was decommissioned last week.

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

Experimental real-time RAPv4/HRRRv3 development

- Currently producing experimental extended-length RAPv4/HRRRv3 forecasts
    - RAPv4/HRRRv3 39/36 hr forecasts at 00, 03, 06, 09, 12, 15, 18, 21z and 21/18

hrs otherwise
    - https://rapidrefresh.noaa.gov/RAP
    - https://rapidrefresh.noaa.gov/hrrr/HRRR

- Currently producing experimental OCONUS HRRRv3 runs
    - HRRR-Alaska, 36 hr forecasts, every 3 hrs
    - HRRR-Hawaii, 24 hr forecasts, every 3 hrs
    - HRRR-Puerto Rico, setup underway

- April 2017 code freeze for experimental RAPv4/HRRRv3 real-time runs
    - More weight to ensemble in data assimilation (from 75% to 85%)
    - More consistent building of clouds between METAR and satellite data
    - Refined assimilation of surface observations
    - Storm-scale ensemble data-assimilation for HRRR (hourly)
    - Higher-resolution land use data (15" MODIS)
    - Real-time greenness fraction
    - Non-local mixing (eddy diffusivity mass-flux) in MYNN PBL
    - WRF-ARW version 3.9

- June 2017 code delivery to EMC
- February 2018 scheduled implementation

Experimental real-time HRRR-TLE

- Uses multiple consecutive runs of experimental HRRRv3 with time/space filters
    - Currently producing 24 hr forecasts, updated hourly
    - Probabilistic products for QPF, winter weather, severe weather, aviation
    - Added probability of significant hail, wind and critical fire weather
    - https://rapidrefresh.noaa.gov/hrrr/hrrrtle
- NCO implementation as ensemble post-processor possible sometime later in 2018

Experimental real-time HRRRE

- Real-time runs resumed 01 March 2017 for VORTEX-SE
    - 55% CONUS HRRR domain (central and eastern US)
    - Nine forecast members produce 18 hr fcsts every three hours from 12z to 21z each day, 36 hr fcst from 00z
    - Initializing downstream Warn-On-Forecast prototype ensemble
    - Evaluated in the 2017 NSSL/SPC Spring Forecast Experiment as part of CLUE
    - Adding HRRR-TLE ensemble post-processing capability
    - https://rapidrefresh.noaa.gov/hrrr/HRRRE
- Candidate for HREFv3 in late 2019, pending science and resource evaluations

4. NATIONAL OCEAN SERVICE:

5. FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS

5a. MDL (*Scott Scallion*)

- ECMWF-MOS handoff to NCO on 10/7/16 for updated temperature equations and new snowfall forecasts. Targeting an April implementation, pending the resolution of an open ticket with IBM to resolve runtime inconsistency issues between the two Cray platforms. Experimental websites are below (NOAA internal only):
  - http://www.mdl.nws.noaa.gov/~ecmwf/moscomp_eval.php
  - http://www.mdl.nws.noaa.gov/~ecmwf/snowfall/mos_snowfall.php

- Blend Version 3.0 has completed it's development phase and will be handed off to NCO in late March (EE Kickoff 2/6). 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 is preparing for the Apr 5 NCEP Director Briefing with a planned implementation on Apr 11.

- 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 roughly Apr 21 with an implementation in early 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
    - In addition, we continue to produce experimental LAMP/HRRR "Meld" gridded forecasts of ceiling and visibility.
      (http://www.mdl.nws.noaa.gov/~rlamp/glmp_expr_viewer_meld.php) - Requires LDAP credentials
      Soon to be available to public 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 April and implemented in July. Test data will be available for this shortly.
    - Implementations:
        - The LAMP ceiling and visibility Meld forecasts will be implemented into NWS operations on or about **1100 UTC Wednesday March 29, 2017.**
        - The LAMP convection and lightning implementation has been slightly delayed, and is now planned for handoff to NCEP/NCO in April 2017 with implementation in July 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): A quick status on the NBM v3 and v4 would be appreciated. MDL's Scott Scallion provided a briefing during the meeting, with the main focus on version 3.

- Southern Region (SR):

- Central Region (CR):

- Eastern Region (ER):

6. Office of Water Prediction

- NWM V1.1 on track for mid-April implementation
- Development work ongoing for V1.2, targeted for implementation in November timeframe

7. NESDIS

GOES-16 ABI L1b Data Released Over GRB on March 1, 2017 and GOES-16 ABI SCMI sent over the SBN or NOAAPORT on March 2, 2017:

NESDIS released the Advanced Baseline Imager (ABI) Level 1b data from GOES-16 through GRB on March 1, 2017 at 1500 UTC. The ABI data at this time is considered Beta Mature and should be considered preliminary, and non-operational. There will be occasional interruptions to the flow while various post-launch tests occur and those interruptions will be communicated through the GRB forum distribution list. A notification will be sent when the data is considered Provisionally Mature (projected to occur in May 2017) and suitable for operational use after further testing and validation. Also,on March 2, 2017 at 1800 UTC, GOES-16 ABI Sectorized Cloud and Moisture Imagery (SCMI) was added to the SBN (also known as NOAAPORT). Snapshots of the imagery are currently being posted on the NESDIS website (www.nesdis.noaa.gov/GOES-16), Facebook (www.facebook.com/NOAANESDIS/), and Twitter (twitter.com/NOAASatellites. *Please note*: *NOAA's GOES-16 satellite has not been declared operational and its data are preliminary and undergoing testing. Users receiving these data through any dissemination means (including, but not limited to, PDA and GRB) assume all risk related to their use of GOES-16 data and NOAA disclaims any and all warranties, whether express or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose.* (Kathryn Mozer, 301-286-3647).

S-NPP/GCOM transitioned to new operational data processing/distribution systems (Block 2.0 and PDA):

NESDIS officially transitioned the new S-NPP/GCOM-W1 data processing/distribution systems to operations on March 8, 2017 starting at 1500 UTC. S-NPP/GCOM users obtaining data from the current operational NDE system were operationally transitioned to the new NESDIS enterprise Product, Distribution and Access (PDA) dissemination system. As a notice to our users, there were no expected changes for those receiving NESDIS Unique Products (NUPs); however, users receiving HDF5 pass-through data will see filename convention changes and the HDF5 data are internally compressed using Zlib lossless compression. Current NDE pull users needed to modify their pull script to accommodate the file name change for IDPS pass-through products. (Chris Sisko, 301-817-4783).

Routine Meteosat-8 IODC Data Distribution Achieved:

On March 1, NESDIS OSPO started routine distribution of new EUMETSAT Meteosat-8 McIDAS imagery as a replacement to Meteosat-7 covering the Indian Ocean. To support numerous environmental applications, all 12 imager channels from Meteosat-8 are being made available. Parallel data distribution between Meteosat-8 and Meteosat-7 will occur until March 31, 2017 at which time Meteosat-7 will be decommissioned and data transmission will cease. As some of the network nodes are deemed non-operational (i.e. demonstration mode) by EUMETSAT and NOAA, the Meteosat-8 data will be provided to users on a best effort basis.

Meteosat-8 IODC McIDAS imagery is currently available from ESPC GEODIST and being accessed by NOAA and other users to support their missions. Using Meteosat-7 legacy products as a baseline, OSPO is currently developing composite imagery employing replacement Meteosat-8 data. The new Meteosat-8 composite products will be ready for user access the week of March 20. To improve data reliability, OSPO is also investigating the feasibility of pulling the Meteosat-8 data from the ESPC PDA in lieu of the College Park STAR server. EUMETSAT plans to end Meteosat-7 satellite operations on March 31, 2017; all users should be configured to receive Meteosat-8 data at that time. (John Paquette, NESDIS/OSPO, 301-683-3237)

Blended-Hydro Products with GPM Capability Operational:
On March 2, 2017, the Blended-Hydro products with the Global Precipitation Measurement (GPM) capability were implemented into operations. The newly added GPM capability, improvements on data quality, temporal refresh rate, and spatial coverage are expected, which enhances the quality of the blended-hydro products in support of NWS operations. GPM capability will help to improve NWS's ability to monitor and predict severe hydrological events (i.e., hurricanes, flash floods, drought, coastal evacuations, etc.) (Limin Zhao, 301-683-3240).

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8. Offline Discussions
Topic:
Lead:

The next Synergy Meeting is scheduled for Monday, April 24, 2017 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.

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