

## NCEP Synergy Meeting Highlights: September 28, 2015

*This meeting was led by Mark Klein (WPC) and attended by Steven Earle (NCO); Vijay Tallapragada, and Geoff DiMego (EMC); Israel Jirak, Andy Dean, and Steve Weiss (SPC); Steve Lack (AWC); Scott Scallion (MDL); Andy Edman (WR); Jeff Waldstreicher (ER); Jeff Manion (CR); and Jason Taylor (NESDIS).*

### 1. NOTES FROM NCO (Steven Earle)

Below is a summary of current and upcoming WCOSS evaluations/implementations:

GLMP - NCEP OD briefing on 9/30. Implementation planned for Oct 1.

[GLAMP TIN](#)

RTOFS - NCEP OD briefing on 9/30. Implementation delayed - will be at the same time as NAVY upgrade

<http://www.nws.noaa.gov/os/notification/tin15-36global-rtofsaaa.htm>

SREF - Implementation delayed for further analysis; NCEP OD briefing will be rescheduled later this month

<http://www.nws.noaa.gov/os/notification/tin15-32srefaac.htm>

NAM MOS - Delayed due to lack of customer feedback

<http://www.nws.noaa.gov/os/notification/tin15-33nam.htm>

GFS MOS - NCEP OD briefing on 9/30. Implementation planned for Oct 1.

[http://www.nws.noaa.gov/os/notification/tin15-34gfs\\_mos1.htm](http://www.nws.noaa.gov/os/notification/tin15-34gfs_mos1.htm)

GTG - Evaluation ended; Need feedback by October 10

<http://www.nws.noaa.gov/os/notification/tin15-42gtg.htm>

ETSS - Evaluation ended; Need feedback by October 5

<http://www.nws.noaa.gov/os/notification/tin15-39etss.htm>

GEFS - Evaluation ended; Need feedback by September 30

<http://www.nws.noaa.gov/os/notification/tin15-43gefs.htm>

GEFS\_legacy data will be turned on on Wednesday September 30

Near Shore Wave Prediction (NWPS) - Delayed; evaluation will start in mid-November

Air Quality Model (AQM) - Evaluation to start next week

Global Wave (multi\_1) - Implementation will be delayed until Spring 2016

NOS OFS - Delayed; Implementation is currently TBD

National Blend of Models - NCO parallel start is targeting early November

\*\*\* The implementation / briefing process has been changing recently. There is a much more weight being put on evaluations and the feedback received from the field. If your organization can't formally participate in an evaluation then we at least need an email stating this and that you are okay with the upgrade proceeding.

## 2. NOTES FROM EMC

### ***2a. Global Climate and Weather Modeling Branch (GCWMB):***

- Testing and Evaluation (T&E) of FY16 GDAS/GFS upgrades will now include changes to the land surface characteristics to address the warm and dry biases in the 2m T/Td over Northern and Southern Plains.
- Implementation schedule for FY16 GDAS/GFS upgrades is moved to Q3FY16 due to additional T&E requirements
- GEFS upgrades are planned for implementation on October 14, 2015

### ***2b. Mesoscale Modeling Branch (MMB) (Geoff DiMego)***

NAM upgrade (Delivery of package to NCO now planned for 2016Q3)

- Increase resolution of CONUS nest from 4 km to 3 km; CONUS nest output grid will be the same as that from the HRRR. 3 km nest has improved QPF bias over 4 km CONUS nest at higher thresholds.
- Increase resolution of Alaska nest from 6 km to 3 km
- Increase frequency in calls to model physics and for the 12 km parent, call the radiation scheme every 20 min instead of once an hour
- Physics changes (now being tested or under development; subject to change)
  - Convection changes (higher 12 km NAM QPF bias)
  - Removed "Dry" soil adjustment due to increasing warm bias as we moved into summer. Cycled land states were restarted from ops NDAS on 2 August 2015. Investigations are ongoing to make a more "targeted" change for the cool season
  - PBL changes to address maritime shallow cloudiness
- Use of radar-derived temperature tendencies in model's diabatic digital filter initialization; call digital filter at start of NAM forecast (now only done at start of 3-h NDAS forecasts)
- Replace 3-h NDAS (12 km domain only) with hourly cycled system (NAMRR) with 12-km parent/3 km CONUS and 3 km Alaska nest; make 18h forecast of 12 km parent and 3 km CONUS/Alaska nest every hour; first step towards future convection-allowing

ensemble (ARW members (i.e., 3 km HRRR) + NMMB members (3 km NAM nests)  
- Resume use of AFWA snow depth product using envelope adjustment  
- For CONUS/Alaska/Fire Weather nest: Land-sea mask changed to add all lakes resolved by the new fresh water lake (FLAKE) climatology. Water temperatures at "FLAKE" lake points are a blend using a Cressman analysis of the FLAKE climatology and temperatures at nearby water points resolved by the RTG\_SST\_HR analysis.

The SREF upgrade (26 members with two model cores, NMMB and ARW) has been delayed for further analysis. The EMC briefing to the NCEP director can be found here: <http://www.emc.ncep.noaa.gov/mmb/mmbp11/eric.html#TAB4>

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RTMA/URMA v2.4.0 upgrade: The CCB was held on 16 September 2015 and the planned upgrade was approved. A PDF of the presentation can be found here: [http://www.emc.ncep.noaa.gov/impdoc/RTMA/RTMA\\_URMA%20CCB%20Q1FY16.pdf](http://www.emc.ncep.noaa.gov/impdoc/RTMA/RTMA_URMA%20CCB%20Q1FY16.pdf)  
The package will be delivered to NCO on 30 September 2015. The following is a summary of the upgrade:

- New min/maxT analysis as required by NBM project and requested by several WFOs
- New variational quality control for the observations
- Use EMC/GFE consensus terrain and land/sea mask for CONUS
- Implement URMA for Alaska
- RTMA/URMA precip enhancement

RAP/HRRR - code delivery to NCO now targeted for December with a late winter 2016 implementation

- no changes in resolution but RAP domain will be expanded to nearly match that of NAM: will assist with future ensemble efforts
- RAP will be extended to at least forecast hour 21 and HRRR to at least forecast hour 18; final decisions not yet made
- primary focus of this implementation is to reduce the models' warm/dry bias via changes to land/sfc model, PBL scheme, convective parameterization (RAP), and GSI
- Hybrid data assimilation introduced to HRRR and weight of GFS ensemble increased in RAP
- New version of Thompson scheme now has aerosol-aware microphysics

### ***2c. Marine Modeling and Analysis Branch (MMAB)***

- Wave Ensemble System update
- NWPS update
- Great Lakes season coming
- Wave Multi\_1 in Arctic, evaluation + implementation

- Atlantic RTOFS implementation
- Global RTOFS implementation
- Down the road:
  - RTG SST analysis implementation
  - Sea ice concentration analysis implementation

### **3. NATIONAL OCEAN SERVICE:**

None

### **4. FEEDBACK FROM MDL/OPERATIONAL CENTERS/REGIONS**

#### **4a. MDL**

- Implementations nearly complete = GLAMP, GFS MOS station and gridded guidance, NAM MOS Regional Operator Equations, ETSS (see NCO notes above)
- Autumn code hand-offs:
  - National Blend of Models v1.0 (code delivered 9/18/2015)
  - EKDMOS domain expansion to cover NWRFC to support NBM v1.0 (code previously delivered 8/18/2015)
  - Update to CONUS GFS-based Gridded MOS (re-incorporate meosnet stations that were previously removed from the 2.5-km CONUS analysis for T, Td, MaxT, MinT and winds) (code delivery scheduled for 10/21/2015)

#### **4b. NCEP Centers**

- Weather Prediction Center (WPC):
  
- Storm Prediction Center (SPC):
  
- National Hurricane Center (NHC):
  
- Ocean Prediction Center (OPC):

- Aviation Weather Center (AWC):
  - Winter Experiment Dates: Feb 8th-Feb 12th, Feb 22nd-Feb 26th
  - Test AWIPS2 product development for polygon based products (GAIRMET/SIGMET)
  - Focus on consistency between clouds and icing (new cloud diagnostics)
  - Focus on turbulence (new algorithms including GTG3)
  - Icing and turbulence collaborative aviation weather statement test
  
- Climate Prediction Center (CPC):
  
- Space Weather Prediction Center (SWPC):

#### **4c. NWS Regions**

- Pacific Region (PR):
  
- Alaska Region (AR):
  
- Western Region (WR)
  
- Southern Region (SR):
  
- Central Region (CR):
  
- Eastern Region (ER):

#### **5. National Water Center**

None.

## 6. NESDIS

Effective 1200 UTC November 16, 2015, the NESDIS Satellite Analysis Branch (SAB) Satellite Precipitation Guidance Message Product (SPENES, WMO header TXUS20 KWBC) will no longer be issued for the continental US (lower 48 states) but will continue to be issued for Hawaii, Puerto Rico and the Virgin Islands. SAB will continue satellite support to the Weather Prediction Center (WPC) and satellite-based information from SAB may be integrated by WPC's forecasters into their MPDs (Mesoscale Precipitation Discussions). This is intended to provide a single source of centralized guidance on heavy rainfall and flash flood threats and ensure consistent message delivery. More information about the MPD is available at:

[http://www.wpc.ncep.noaa.gov/metwatch/metwatch\\_mpd.php](http://www.wpc.ncep.noaa.gov/metwatch/metwatch_mpd.php)

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## 7. Offline Discussions

**Topic:**

**Lead:**

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**The next Synergy Meeting is scheduled for Monday, October 26 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.**

Telecon: **1-866-763-1213**

Passcode: **524234#**

**GoTo Meeting:** <https://global.gotomeeting.com/join/955815885>