

# NCEP Synergy Meeting Highlights: June 26, 2017

*This meeting was led by Mark Klein (WPC) and attended by Steven Earle (NCO), Glenn White (EMC); Israel Jirak (SPC); Mike Brennan (NHC); Jeff Waldstreicher (ER); Jack Settelmaier (SR); Bill Ward (PR); Curtis Alexander (ESRL), Jason Taylor (NESDIS), and Bill Bua (COMET).*

## 1. NOTES FROM NCO (Steven Earle)

GFS - 30-day stability period is ongoing with implementation scheduled for July 19  
<http://www.nws.noaa.gov/os/notification/scn17-67gfsupgrade.htm>

GLW - Evaluation is ongoing; Feedback due July 14; Implementation July 25  
<http://www.nws.noaa.gov/os/notification/scn17-75glwu.htm>

HWRF - Canned testing at NCO is ongoing; Implementation July 26  
<http://www.nws.noaa.gov/os/notification/scn17-80hwrft.htm>

Blend - Evaluation is ongoing; Feedback due July 3; Implementation July 27  
<http://www.nws.noaa.gov/os/notification/scn17-59nbm3aaa.htm>

HMON - Canned testing at NCO is ongoing; Implementation August 1  
-- SCN will be released this week

ETSS/PETSS - Evaluation has restarted; Implementation now scheduled for the second week of August  
[http://www.nws.noaa.gov/os/notification/scn17-63etss\\_petss.htm](http://www.nws.noaa.gov/os/notification/scn17-63etss_petss.htm)

GFDL - To be discontinued on July 5  
[http://www.nws.noaa.gov/om/notification/scn17-45discontinue\\_ghm\\_v2.htm](http://www.nws.noaa.gov/om/notification/scn17-45discontinue_ghm_v2.htm)

Wave Multi 2 - To be discontinued in July with HWRF implementation  
PNS: [http://www.nws.noaa.gov/os/notification/pns17-06hurricane\\_wave.htm](http://www.nws.noaa.gov/os/notification/pns17-06hurricane_wave.htm)  
SCN: [http://www.nws.noaa.gov/os/notification/scn17-71removal\\_wave\\_multi2.htm](http://www.nws.noaa.gov/os/notification/scn17-71removal_wave_multi2.htm)

## 2. NOTES FROM EMC

### *2a. Global Modeling (Glenn White):*

#### **FV3**

Work continues on the FV3GFS, with a version 0 released to the community modeling community via VLab on May 15, 2017. Current verification results overall show it comparable to the current operational GFS. The planned initial implementation is

tentatively scheduled for April 2018, with an upgrade to 10km resolution and 128 levels possible during 2019.

## ***2b. Mesoscale Modeling***

**RTMA/URMA Upgrade** : Science Briefing to NCEP Director - June 26th

Highlights include min/max RH analysis, analysis of significant wave height, ceiling height improvements over Alaska, new WFO-adjusted terrain, GLERL adjusted obs over the Great Lakes, and relaxed QC criteria for temperature and moisture observations. We are also introducing RU-RTMA which updates every 15 minutes.

For details, go to <http://www.emc.ncep.noaa.gov/mmb/mmbpll/misc/upcoming.html> (RTMA/URMA v2.6/PCPANL v3.0 entry) and [RTMA/URMA/RURRTMA v2.6 Overview](#)

It is also worth noting that with this implementation process, the 30-day science evaluation will begin now. Science will then be reviewed by NCEP and EMC management at a briefing in mid-June. If approved, code will be frozen and handed off to NCO for ultimate implementation in October. Evaluation memos will be sent out to the relevant parties shortly.

Because of this new evaluation method, we can't guarantee reliability of the system yet. There will be times when the parallel can't run because of dev system outages or reliability of the dev system. When possible, we will notify you of these outages via this listserver.

For now, the best way to access the grids is through our FTP server:  
ftp.emc.ncep.noaa.gov/mmb/rtma/v2.6.0/\${NET}/para/\${RUN}.\${DATE}  
Where NET is rtma or urma  
and run is \${NET}2p5 (conus), ak\${NET} (AK), pr\${NET} (PR), hi\${NET} (HI) and gu\${NET} (Guam - note there is no URMA for Guam).

We also have our own web graphics you can use to take a quick look at differences. These web graphics are publicly accessible.

Parallel RTMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/RTMAP](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/RTMAP)

Parallel URMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/URMAP](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/URMAP)

Operational RTMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/RTMA](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/RTMA)

Operational URMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/URMA](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/URMA)

Parallel vs. Ops RTMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/RTMAP-RTMA](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/RTMAP-RTMA)

Parallel vs. Ops URMA:

[http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma\\_urma/URMAP-URMA](http://www.emc.ncep.noaa.gov/mmb/jcarley/rtma_urma/URMAP-URMA)

**RAPv4/HRRRv3** parallel files from EMC will become available by later in August. We are planning to extend the 00/06/12/18z cycles to 36 hours and add in a HRRR-Alaska. The HRRR-AK will likely not be run hourly, but the frequency has not yet been determined.

**HiResW/HREFv2** : Science Briefing to NCEP Director was on June 15th, handoff of system to NCO is imminent (if it has not happened already), implementation is scheduled for September 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.

## ***2c. Marine Modeling***

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

#### **Experimental real-time RAPv4/HRRRv3 development**

- Currently producing experimental extended-length RAPv4/HRRRv3 forecasts
  - RAPv4/HRRRv3 operational plan:

- ❑ RAP 39hr fcsts at 03z, 09z, 15z, 21z
  - ❑ HRRR 36hr fcsts at 00z, 06z, 12z, 18z
  - ❑ 21/18 hrs otherwise
- FFaIR special experimental runs: RAP 09/21z 51hr, HRRR 00/12z 48hr
  - <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 (operational plan TBD)
  - HRRR-Hawaii, 24 hr forecasts, every 3 hrs (operational plan TBD)
- June 2017 code delivery to EMC, Feb 2018 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 2018-19

#### **Experimental real-time HRRRE**

- Real-time runs resumed 01 March 2017 for VORTEX-SE and HWT
  - Nine forecast members produce 18 hr fcsts every three hours from 12-18z each day
  - 55% CONUS HRRR domain (central and eastern US)
- FFaIR special CONUS HRRR domain
  - Nine forecast members produce 36 hr fcsts from 00z
  - Adding HRRR-TLE ensemble post-processing capability
  - <https://rapidrefresh.noaa.gov/hrrr/HRRRE>

#### **Experimental real-time HRRR-Smoke**

- Development continues for CONUS and Alaska smoke forecasts
  - 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 HRRR later this year
  - <https://rapidrefresh.noaa.gov/hrrr/HRRRsmoke/>

## **4. NATIONAL OCEAN SERVICE**

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

### **5a. MDL (*Jeff Craven*)**

- GFS-MOS and EKD-MOS - handoff to NCO on track
  - Science briefing 5/30 - Approved for handoff.
  - To include expanded CONUS domain for NBM input (EKD-MOS only)
  - Updated Ceiling/Sky Cover Equations
  - **On hold due to higher MDL priorities being worked on**
  
- NBM V3.0 started running on May 2nd on WCOSS operational machine and the 30 day IT stability test was restarted on June 14. Current operational implementation is scheduled on **July 27, 2017**. (**Delayed Implementation date**)
  - This major update includes:
    - Hourly updates based on any new model inputs
    - Blend short-term models (HRRR, LAMP, SREF, etc.) over the CONUS
    - Expand CONUS and Alaska domains to support marine/NWPS
    - 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-ETSS 1.0 / ETSS 2.2 30-day evaluation was restarted 6/23.
  
- P-Surge 2.6 patch due to a compiler version issue. NHC indicated they could live with current version, but desired a patch before the active part of season. SPA's agreed to pick it up near the end of July but appear to have started work at the end of June.
  
- LAMP/Gridded LAMP (updates in **blue**)
  - 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](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.

- Implementations:
  - The LAMP ceiling and visibility Meld forecasts was implemented into NWS operations on **Wednesday April 5, 2017. This was delayed from the planned implementation date due to CWD status.**
  - 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 codes for the above changes will be handed off in June and implemented in September.
  - Test data will be available for this shortly.
  - The 1-hr convection guidance has been available experimentally for over a year, and the 1-hr lightning guidance has been available for roughly 9 months. We have already collected some user feedback on this guidance, and we will soon make the 1-hr convection and lightning data available for a two week period for user feedback before code handoff to NCEP. An email announcing this along with a presentation about the guidance and verification is expected to be sent out the week of May 22.
  - The 15-min guidance will be made available to AWC, but will not at this time be available on the SBN. Through coordination with the RAMs, it was decided to make the 15-minute guidance available experimentally on a web site for WFOs to test the usefulness of the data. Should it be guidance they would later like added to the SBN, we would put that into a future implementation.

## 5b. NCEP Centers

- Weather Prediction Center (WPC):

- Storm Prediction Center (SPC):
  
- National Hurricane Center (NHC):  
Noted that the TC Tracker was not available for the new NAM
  
- 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**

-30-day Science Evaluation test is proceeding for NWM V1.2 and is scheduled to end July 13th. Implementation is set for November/December of this year.

## **7. NESDIS**

### **Jason-2 Satellite in Safe Hold Mode Since May 18, 2017**

The National Centre for Space Studies (CNES), the French government space agency, continues to investigate the Jason-2 spacecraft gyros anomaly. Two of its three gyros are showing an abnormal behavior, very likely due to their aging during 9 years in the difficult radiation environment experienced at a 1336 km orbit. As 2 gyros out of 3 are required to ensure nominal attitude control, no mission recovery has been possible at this time. Actions for recovery are however ongoing and CNES is still optimistic about resuming Jason-2 data production in the future. A Joint Steering Group was held June 20th to discuss Jason-2 status. The Jason-2 Ocean Surface Topography Mission (OSTM) is a joint effort by four organizations to measure sea surface height by using a radar altimeter mounted on a low-earth orbiting satellite called Jason-2. The four mission participants are: NOAA, NASA, CNES, and the European Meteorological Satellite Organization (EUMETSAT). The Jason-2 altimetry mission provides sea surface heights for determining ocean circulation, climate change and sea-level rise. (David Donahue, 301- 683-3236)

### **GOES-16 Handover to NESDIS Office of Satellite and Product Operations (OSPO) June 23, 2017**

The official handover of the GOES-16 satellite to from NASA to NESDIS/OSPO for flight and ground operations occurred successfully on June 23, 2017. (Jason Taylor 301-683-3248)

### **2017 NOAA Satellite Conference July 17-20 City College of New York**

The 2017 NOAA Satellite Conference is scheduled July 17-20, 2017 and will be held at the City College of New York. The theme of this year's conference is "A New Era for NOAA Environmental Satellites." <http://www.nsc2017.org>. (M. Moser 301-817-4406)



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**The next Synergy Meeting is scheduled for July 31 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.**

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

**Passcode: 524234#**