

# NCEP Synergy Meeting Highlights: June 1, 2015

*This meeting was led by Mark Klein (WPC) and attended by Scott Jacobs (WPC); Steven Earle and Kelly Kempisty (NCO); Mark Iredell and Yuejian Zhu (EMC); Avichal Mehra (MMAB); Andy Dean and Steve Weiss (SPC); Benjamin Schwedler (AWC); Phil Shafer and David Myrick (MDL); Michael Staudenmaier and Andy Edman (WR); Jack Settelmaier (SR); John Eise and Jeff Craven (CR); Brian Cosgrove and Mark Fresch (NWC).*

## 1. NOTES FROM NCO (Kelly Kempisty / Steven Earle)

### Discontinuation of the NCEP FTP Server

- Scheduled for August 18, 2015
- This applies to the following links:
  - <http://www.ftp.ncep.noaa.gov>
  - ftp://ftp.ncep.noaa.gov
  - <http://www.ftpprd.ncep.noaa.gov>
  - ftp://ftpprd.ncep.noaa.gov
- Users who access any of the above links will need to transition to NOMADS.
- FTP is not available on NOMADS, so FTP users will need to transition to HTTP for data downloads.
- The purpose of this change is to leverage cloud services for NOMADS, which will improve reliability and availability of data and is expected to improve download performance. These improvements are expected only after NOMADS transitions to cloud services after August 18, 2015.
- FTPPRD users are encouraged to configure parallel HTTP data pulls from NOMADS prior to August 18, 2015.
- This change will not impact the NWSTG FTP server (tgftp.nws.noaa.gov)
- The TIN is available here:  
[http://www.nws.noaa.gov/os/notification/tin15-21ftpprd\\_end.htm](http://www.nws.noaa.gov/os/notification/tin15-21ftpprd_end.htm)

### ETSS

- Implemented on May 19
  - <http://www.nws.noaa.gov/os/notification/tin15-18etss.htm>

### NAM SMARTINIT

- Implementation scheduled for June 2, 2015
- Summary of changes

- Addition of Haines Index grids to SBN/NOAAPORT
- The wind adjustment algorithm was corrected in regions where the terrain height is below sea level to correct erroneously large adjusted wind speeds in the vicinity of the Salton Sea in California in NAM-DNG.
- For these and other details, please reference:  
<http://www.nws.noaa.gov/os/notification/tin15-22nam-dng-dgex.htm>

#### PSURGE

- Implementation scheduled for June 2

#### HIRESW

- Summary of Changes
  - Updates the NMMB forecast code using a January 2015 version of the model, yet retains the microphysics from the v6.0.x code.. WRF-ARW code is updated from v3.5 to v3.6.1, but with a local modification to the microphysics. The WSM6 microphysics routine used in the WRF-ARW run was modified to expand the anvil region in clouds. This was achieved by slowing graupel production processes, allowing more production of snow aloft.
  - Number of vertical levels increased from 40 to 50 for both models.
  - Adds new products for severe weather and aviation purposes
  - Adds a new high resolution ensemble product generating system, which combines information from the most recent runs of the Hires Window and NAM Conus Nest
  - File name changes
- 30-day Evaluation is on-going and will end on June 18.
- Implementation planned for June 30
- For additional details, please reference the TIN::  
<http://www.nws.noaa.gov/os/notification/tin15-27hiresw.htm>

#### HWRF and GFDL

- Canned testing in on-going
- Real-time data feed starting June 2 to para.nomads for eastern Pacific storms. mageval.ncep.noaa.gov is also getting populated
- NCEP Director brief on June 8
- Implementation scheduled for June 9

- HWRF TIN: <http://www.nws.noaa.gov/os/notification/tin15-25hwrp.htm>
- GFDL TIN: <http://www.nws.noaa.gov/os/notification/tin15-26gfdl.htm>

#### ECMWF-based MOS Station Guidance

- 30-day evaluation is on-going and will end on June 18
- Implementation planned for June 30

#### SREF

- 30-day evaluation scheduled to start second week of June
- Implementation scheduled for late-July
- TIN: **COMING SOON!**

#### GEFS

- 30-day evaluation delayed until after SREF completes (late-July)
- Implementation planned for late-August

#### RTOFS Global

- NCO has received the code
- 30-day evaluation to start in mid-June
- Implementation planned for late July
- TIN: **COMING SOON!**

#### GLAMP

- NCO expected to receive code next week
- 30-day evaluation to start in June

#### NHC Guidance Suite

- Planned implementation in June

#### AWC Graphical Turbulence Guidance (GTG)

- Evaluation planned for June
- Implementation planned for Q4

## 2. NOTES FROM EMC

***2a. Global Climate and Weather Modeling Branch (GCWMB) (Mark Iredell and***

Yuejian Zhu):

Next NAEFS upgrade - 1-2 months after GEFS

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

HIRESW upgrade : See NCO notes

SREF upgrade (early Q4), no updates from last month

- Drop WRF-NMM members
- Increase from 21 to 26 members (13 NEMS-NMMB, 13 WRF-ARW)
- Increase # of vertical levels from 35 to 40
- More physics diversity
- Use bred vectors and global EnKF to perturb initial conditions
- NCO 30 day test starts in mid-late May
- Q4 (July) implementation

NAM upgrade (2016Q1, targeting early-mid December). Update of convection changes. 3 km parallel CONUS nest web page, and NAMRR real-time web page.

- Increase resolution of CONUS nest from 4 km to 3 km; CONUS nest output grid will be the same as that from the HRRR. Hourly (1-60 h) graphics for 3 km CONUS nest :  
[http://www.emc.ncep.noaa.gov/mmb/mmbpll/nampll\\_conusnest\\_3km\\_hourly60](http://www.emc.ncep.noaa.gov/mmb/mmbpll/nampll_conusnest_3km_hourly60)
- Increase resolution of Alaska nest from 6 km to 3 km
- Physics changes (now being tested or under development; subject to change)
  - New shallow convection dropped due to degraded CAPE and QPF bias during warm season. Now testing experimental version of BMJ convection.
  - “Drier” soil adjustment (address winter cool/moist bias)
  - PBL changes to address maritime shallow cloudiness
- Replace 3-h NDAS (12 m domain only) with hourly cycled system (NAMRR) with 12-km parent/3 km CONUS and 3 km Alaska nest; make 18-24h 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). Jacob Carley is now running NAMRR in real-time, viewable at <http://www.emc.ncep.noaa.gov/mmb/jcarley/namrr/CONUSNEST/> .

- 4-d version of hybrid GSI analysis (tentative)
- Resume use of AFWA snow depth product with envelope adjustment procedure used in global
- Use radar-derived temperature tendencies in model's diabatic digital filter
- Post-processing changes : testing changes to ceiling height computation and using a modified version of the GSD cloud fraction algorithm

RAP/HRRR upgrade (2016Q1) : No changes from May except planned implementation changed from 2015Q4 to 2016Q1

- RAP domain increased to match NAM domain
- forecast extensions for RAP and HRRR (length still being determined)
- HRRR will start using hybrid data assimilation
- begin assimilation of mesonet obs, radial velocities, and lightning data
- satellite radiance bias correction added to RAP assimilation
- improved assimilation of radar reflectivity in the HRRR
- Grell-Freitas shallow convective scheme (RAP only), MYNN PBL scheme modifications, and land-sfc scheme updates to reduce warm/dry bias
- begin using Thompson aerosol-aware microphysics

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

Global RTOFS v1.1.0 has been approved for implementation by EMC later this year. Significant *changes* from v1.0.6 include:

1. Number of vertical layers has been increased to 41 from 32 hybrid layers, with extra iso-level coordinate layers in the upper ~200m.
2. Ocean component HYCOM is now coupled to Los Alamos National Lab's CICE (Community sea-ICE) model using ESMF (Earth System Modeling Framework).
3. The bathymetry has been updated which allows grid points in shallow regions, where minimum depth is set to 5m.

4. The climatology has been updated to U.S. Navy's GDEM (Generalized Digital Environmental Model) v4.2 from v3.0.
5. An updated equation of state, 17-term sigma2 instead of a 9-term definition.

Primary *benefits* of this upgrade:

1. Air-Sea boundary flux improvements for coupled applications (including for Hurricanes).
2. Fine vertical resolution for mixed layer (9 additional near surface layers).
3. Improved vertical coastal resolution for downstream applications (NOS-OFS systems, Eco-forecasting).
4. Additional Sea Ice products (Sea-Ice drift, Sea-Ice Stress etc.).

**3. NATIONAL OCEAN SERVICE** (*Representative from NOS - Aijun zhang*):

- CO-OPS will coordinate with SPA team and deliver updated package of ROMS version update for CBOFS, DBOFS, and TBOFS in late June.
- CO-OPS will coordinate with SPA team for delivery package of FVCOM-based Lake Erie model in September 2015.
- CO-OPS updated NOS shared COMF codes for directory and file name changes due to ETSS and NDFD product updates.

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

**4a. MDL**

- Upcoming Implementations (not listed in NCO section above):
  - Updates to GFS-based Gridded MOS and changes to GFS MOS COOP and RFC SHEF Messages - planned 7/28/15
    - Code delivery 6/2/15
    - Addition of Day 8-11 Gridded MOS to support WPC ops (will be available in tgftp/ndgd and on SBN. DRG request pending for headers.)
  - Gridded LAMP updates to T, Td, Ceiling & Vis + adding Sky Cover and Wind Speed

- Code delivery delayed 3 weeks to June 10th due to:
      - GFS MOS upgrade required changes to Gridded LAMP system
      - Work necessitated by new NCO standards
      - OpenMP bug found in final testing/optimization of code. Bug was fixed on 5/26/2015
    - 30-day parallel is planned, feedback appreciated
  - ETSS v2.1-Alaska - early September
  - Upgrade/Refresh NAM MOS Station Guidance - late September

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

- Weather Prediction Center (WPC): What is the status of NCO obtaining 0.5-degree ECMWF ensemble data?
- Storm Prediction Center (SPC):
- National Hurricane Center (NHC): What is the status of NCO obtaining 0.5-degree ECMWF ensemble data? Are the new 06/18Z ECMWF ensemble runs being made available to NCEP?
- Ocean Prediction Center (OPC):
- Aviation Weather Center (AWC):
  - 2015 Summer Experiment: Aug 10 - 21 - Invitations sent
- Climate Prediction Center (CPC):
- Space Weather Prediction Center (SWPC):

#### Answers to questions from Centers:

1. NCO will pursue the ECMWF ensembles after the UKMET data call is over
2. According to EMC, ECMWF does not run 06/18Z cycles

#### **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

- Began initial discussions with WPC regarding assessment and testing of WPC QPF products in NWC operations
- What is the status of CFS data onto the SBN (planned implementation date was June 15)?
  - Answer: CFS data onto the SBN will be June 16.
- In light of GEFS delay, is there a similar delay to the parallel GEFSv10 run, and URL for the data?
  - Answer: - There is a similar delay to the GEFS v10 (legacy). We will give a minimum 2 week parallel of v10 and v11 to allow people to adapt. The location of v10 data will change but the final location is not confirmed yet (should be in the next 2-3 weeks).

## 6. NESDIS

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## 7. Offline Discussions

Topic:

Lead:



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**The next Synergy Meeting is scheduled for Monday, June 29 at 2:30 pm EDT in NCWCP conference room 2890, with remote teleconferencing capability.**

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

Passcode: **524234#**