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PNSWSH

Service Change Notice 18-96 Updated
National Weather Service Headquarters Silver Spring MD
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To: Subscribers:
 -NOAA Weather Wire Service
 -Emergency Managers Weather Information Network
 -NOAAPort
 Other NWS Partners, Users and Employees

From: Dave Myrick
 NWS Office of Science and Technology Integration

Subject: Updated: RTMA/URMA/RTMA-RU Upgrade Implementation Start Time
Changed to the 1200 UTC Cycle on December 4, 2018

Updated to change the implementation start time to the 1200 UTC cycle
instead of the 1500 UTC cycle on December 4, 2018.

Effective on or about December 4, 2018, beginning with the 1200
Coordinated Universal Time (UTC) cycle, the National Centers for
Environmental Prediction (NCEP) will upgrade the Real-Time Mesoscale
Analysis (RTMA), the Unrestricted Mesoscale Analysis (URMA) and the RTMA
Rapid-Update (RTMA-RU).

This upgrade will include:

- Changes to model components.
- Addition of new product fields and changes.
- Product removals, including Web Services and Satellite Broadcast
Network (SBN)/NOAAPort.

1) Changes to Model Components

- The RTMA-RU system latency is improved such that product delivery
occurs within 15 minutes of the cycle time.
- Guam RTMA will change from a three-hourly analysis system to an hourly
analysis system.
- Guam RTMA will change to use a background field from the 3-km Guam
High-Resolution Window forecast, rather than a 13-km Global Forecast
System (GFS) forecast.

The new high spatial resolution background is generally of a longer
forecast length, since the High-Res Window model only makes forecasts for
cycles 0000 UTC and 1200 UTC, while the GFS makes forecasts for cycles
0000 UTC, 0600 UTC, 1200 UTC and 1800 UTC. In addition, the first five
hours of each High-Res Window forecast are discarded to avoid noise in
the RTMA background.

- Alaska RTMA and Alaska URMA will change to use a background field from
the 3-km High-Resolution Rapid Refresh (HRRR) Alaska forecast, rather
than a 13-km Rapid Refresh (RAP) forecast. The new high-resolution
background is generally of a longer forecast length, since the HRRR-AK

model only makes forecasts for cycles 0000 UTC, 0300 UTC, 0600 UTC, 0900 UTC, 1200 UTC, 1500 UTC, 1800 UTC, 2100 UTC, while the RAP model makes forecasts for hourly cycles.

- The ceiling/sky cover analysis is expanded to all outside the contiguous U.S. (CONUS) domains in support of the National Blend of Models (NBM).
- The significant wave height analysis is expanded to the CONUS URMA domains.
- The ceiling and visibility analysis is improved for all domains through the use of a general nonlinear transformation of variables in the data assimilation algorithm.
- CONUS RTMA/URMA/RTMA-RU will begin assimilating new visibility observations from Mesonets via a use-list provided by NOAA Earth System Research Laboratory (ESRL).
- The coastal gaps in the contiguous U.S. (CONUS) URMA precipitation analysis are filled via the incorporation of available Multi-Radar Multi-Sensor (MRMS) and the Climate Prediction Center MORPHing Technique (CMORPH) precipitation analysis data.
- Updates to improve how well the analysis matches observations:
- For CONUS domains of RTMA, URMA, and RTMA-RU, update the analysis observation selection algorithm to only use the observation closest to analysis time instead of fitting among the full window of reports from a single station.
- For the CONUS domains of RTMA, URMA, and RTMA-RU, update temperature background error covariance in complex terrain.
- Updated wind Quality Control (QC) lists for Mesonets.

2) Product changes and additions on the NCEP Web Services under rtma/prod and urma/prod:

<http://nomads.ncep.noaa.gov/pub/data/nccf/com/>
<http://www.ftp.ncep.noaa.gov/data/nccf/com/>
<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/>

- A new parameter, significant wave height (HTSGW), will be added to URMA gridded binary version two (GRIB2) files (with pattern 2dvaranl|2dvarges|2dvarerr) over Alaska, Hawaii and Puerto Rico. Significant wave height uses WaveWatch III output as a first guess field, and includes observations from buoys and satellite altimeters.
 - A new parameter, ceiling height (CEIL), will be added to RTMA GRIB2 and URMA GRIB2 (with pattern 2dvaranl|2dvarges|2dvarerr) over Hawaii and Puerto Rico, and to RTMA over Guam.
 - A new parameter, sky cover (TCDC), will be added to RTMA GRIB2 and URMA GRIB2 (with pattern 2dvaranl|2dvarges|2dvarerr) over Alaska, Hawaii and Puerto Rico, and to RTMA over Guam.
 - New Hourly Guam RTMA data will become available. Files will be in the same format and have the same naming convention as current three-hourly Guam RTMA files.
- Files under gurtma.YYYYMMDD/ like:
gurtma.tHHz.[2dvaranl|2dvarges|2dvarerr]_ndfd.grb2

Where YYYYMMDD is year, month, and day, HH is cycle from 00-23.

- The RTMA and URMA GRIB2 data available on NCEP web services will be increased from two days available to 10 days available.
- URMA's CONUS precipitation grid has been expanded to use the larger "WEXP" grid (pcpurma_wexp.yyyymmddhh.xxh.grb2).
- CONUS URMA data files with validation time more than 24-hours ago will have an accompanying data mask: (pcpurma_mask.yyyymmddhh.xxh.grb2; this is a new product) showing source of coverage (98-CMORPH; 99-MRMS, 150,152-162: CONUS River Forecast Centers (RFCs) [using RFC IDs]). The CONUS precipitation URMA files sent to the NOAA Operational Model Archive and Distribution System (NOMADS) will be on the WEXP grid, replacing the current G184 (smaller CONUS Grid) and G188 (NWRFC area) files, while the files distributed through AWIPS will remain on G184 and G188.

3) Product removals from the NCEP Web Services

- Remove the following RTMA and URMA grids, as originally announced in [Service Change Notice \(SCN\) 17-105](#). All of the data within these files being removed can be extracted from the "wexp" files:

```
[rtma2p5|urma2p5].tCCz.[2dvaranl|2dvarges|2dvarerr]_ndfd.grb2
[rtma2p5|urma2p5].tCCz.[2dvaranl|2dvarges|2dvarerr]_nwrfc.grb2
```

```
[rtma2p5|urma2p5].tCCz.[2dvaranl|2dvarges|2dvarerr]_ndfd.grb2_ext
```

- Remove subsets of CONUS URMA precipitation
pcpurma_g184.YYYYMMDDCC.HHh.grb2
pcpurma_g188.YYYYMMDDCC.HHh.grb2
Where CC = cycle and HH is hour.

4) Product Removals from the NWS Web Services at:

<http://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.rtma/AR.conus/RT.CC>

<ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/DF.gr2/DC.ndgd/GT.rtma/AR.conus/RT.CC>

Where CC = cycle

- Removal of the National Environmental Satellite, Data and Information Service (NESDIS) created Total Cloud Cover grid:
ds.sky.bin (LAMA98 KNES)

5) There will be no additions to NOAAPort.

6) The following products will be removed from SBN/NOAAPort:

- The 5km (Grid 197) RTMA. These are hourly analysis and error files which are 14MB in size per cycle. The World Meteorological Organization (WMO) Headers being removed are as follows:

```
LHMA98 KWBR
LNMA98 KWBR
LPMA98 KWBR
LRMA98 KWBR
LTMA98 KWBR
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LUMA98 KWBR
LVMA98 KWBR

More information about the RTMA, URMA and RTMA-RU is available at:
<https://vlab.ncep.noaa.gov/web/715073/home>

A consistent parallel feed of data will be available on the NCEP server via the following URLs:

<http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/rtma/para/>
<http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/urma/para/>

NCEP urges all users to ensure their decoders can handle changes in content order and volume changes. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes before implementation.

Questions, comments or requests regarding this change should be directed to the contacts below. We will review feedback and decide whether to proceed.

For questions regarding these changes, please contact:

Jacob Carley
NCEP/EMC Modeling and Data Assimilation Branch
College Park, MD
301-683-3693
rtma.feedback.vlab@noaa.gov

For questions regarding the data flow aspects of these data sets, please contact:

Carissa Klemmer
NCEP/NCO Dataflow Team Lead
College Park, MD
301-683-0567
ncep.list.pmb-dataflow@noaa.gov

National Service Change Notices are online at:

<https://www.weather.gov/notification/archive>

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