

NOUS41 KWBC 151316  
PNSWSH

Technical Implementation Notice 15-32  
National Weather Service Headquarters Washington DC  
915 AM EDT Thu Jun 25 2015

To: Subscribers:  
-Family of Services  
-NOAA Weather Wire Service  
-Emergency Managers Weather Information Network  
-NOAAPORT  
Other NWS partners and NWS employees

From: Timothy McClung  
Chief Operating Officer  
NWS Office of Science and Technology Integration

Subject: Upgrade the Short Range Ensemble Forecast System:  
Effective August 4, 2015

Effective August 4, 2015, at 1500 Coordinated Universal Time (UTC), the National Centers for Environmental Prediction (NCEP) will upgrade the Short Range Ensemble Forecast System (SREF). The SREF model upgrades include the following:

- Eliminate the seven Weather Research and Forecast (WRF) Nonhydrostatic Mesoscale Model (NMM) members including the following members: ctl, n1, p1, n2, p2, n3, p3.
- Increase the Nonhydrostatic Multiscale Model on B-Grid (NMMB) model members from 7 to 13 members. The new NMMB members will be: n4, p4, n5, p5, n6, p6.
- Increase the Advanced Research WRF (WRF-ARW) members from 7 to 13 members. The new ARW members will be: n4, p4, n5, p5, n6, p6.
- Encode each ensemble member ID in the GRIB data for the 26 individual raw SREF members.
- Change cloud ceiling height from Above Ground Level (AGL) to Above Sea Level (ASL) as requested by the aviation user community.
- Add more diverse in model initial conditions (IC), IC perturbation and physics and increase the vertical resolution of the model from 35 to 40 vertical levels.

The Environmental Modeling Center (EMC) Mesoscale Modeling Branch (MMB) website offers more information on the SREF modeling system and other NCEP regional modeling systems:

<http://www.emc.ncep.noaa.gov/mmb/mesoscale.html>

#### AWIPS product changes:

Increase the total number of ensemble members from 21 to 26 due to the discontinuation of the NMM member and the increase of both the NMMB and ARW members from 7 to 13 members. The increase in ensemble membership will be reflected in the following AWIPS products:

- For 2-meter Temperature and 3-hourly Precipitation products on Grid #221 (32 km North American Lambert Conformal Grid), the GRIB2 Product Definition Template (PDT) will be modified to identify the individual ensemble members.

- For the Mean, Probability, and Spread products on Grids #212 (40 km Contiguous United States (CONUS) Lambert Conformal Grid), #216 (45km Alaska Polar Stereographic Grid), and #243 (Eastern North Pacific Grid), the GRIB2 encoding will reflect the total increase in ensemble members from 21 to 26.

#### File name changes:

There will be no changes in the file naming convention for the NMMB files, where the model core in file names is represented with the string "nmb"; however, the file naming convention for all ARW files will be modified by replacing the previous "em" string with the "arw" string.

Also, the file naming convention for the mean, probability and spread cluster files on the NCEP FTP server and NOMADS will change to lead with "sref" and the model cycle:

```
[mean|prob|spread].sref.cluster[1-6].fHH.grib2 ->  
sref.tCCz.[mean|prob|spread]_cluster[1-6].fHH.grib2
```

where CC is the model cycle (03, 09, 15, 21), HH is the 2-digit forecast hour (00, 03, 06, ..., 81, 84, 87)

#### Data delivery timing/volume/content changes:

NCEP expects no changes in delivery times. The GRIB2 product definition section (PDS) will be modified to identify the individual SREF members. In combination with the model ID (111=NMMB and 116=ARW), users will be able to identify each of the unique SREF members as follows: ctl, p1 (+1), n1 (-1), p2 (+2), n2 (-2), ..., p6 (+6), n6 (-6).

Due to the increase in SREF members from 21 to 26 and the addition of the member ID to each member's GRIB2 file, users can expect approximately a 10 percent increase in the data volume for each of the raw individual ensemble member's files.

Output from the SREF is available for North America, the

Contiguous United States, Alaska and Eastern Pacific domains on the NCEP FTP server, NOMADS and NOAAPORT.

On the NCEP FTP server, data is available in the following location:

<ftp://ftp.ncep.noaa.gov/pub/data/nccf/com/sref/prod/sref.YYYYMMDD>

<http://www.ftp.ncep.noaa.gov/data/nccf/com/sref/prod/sref.YYYYMMDD>

where YYYY is the 4-digit year, MM is the month, and DD is the day.

NOMADS data is available via the following URL:

<http://nomads.ncep.noaa.gov>

Output from the SREF is available for the CONUS domain on the NWS FTP server at the following location:

[ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/MT.sref\\_CY.CC/RD.YYYYMMDD](ftp://tgftp.nws.noaa.gov/SL.us008001/ST.opnl/MT.sref_CY.CC/RD.YYYYMMDD)

where CC is the cycle (03, 09, 15, 21) and YYYYMMDD is the current date.

A consistent parallel feed of data will be made available on the NCEP HTTP server at the following URL:

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

NCEP encourages all users to ensure their decoders are flexible and are able to adequately handle changes in content order, changes in the scaling factor component within the product definition section (PDS) of the GRIB files, and also any volume changes which may occur. These elements may change with future NCEP model implementations. NCEP will make every attempt to alert users to these changes prior to any implementations.

For questions regarding the scientific content of the modeling system, please contact:

Geoff DiMego  
NCEP/EMC  
College Park, Maryland 20740  
Phone: 301-683-3764  
[Geoff.Dimego@noaa.gov](mailto:Geoff.Dimego@noaa.gov)

Or

Jun Du  
NCEP/EMC  
College Park, Maryland 20740  
Phone: 301-763-3704

Jun.Du@noaa.gov

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

Kelly Kempisty  
NCEP/NCO Dataflow Team  
College Park, Maryland 20740  
Phone: 301-683-0567  
Email: ncep.list.pmb-dataflow@noaa.gov

National Technical Implementation Notices are online at:

<http://www.nws.noaa.gov/om/notif.htm>

\$\$