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From:    Daryl Kleist
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Modeling and Data Assimilation Branch

Subject: NAM, RAP, RTMA, URMA, GFS, GDAS, and CDAS obsproc.v1.1.0 Upgrade
Due to the Addition of New Observation Types and the Removal of
One Observation Type: Effective November 29, 2022

Effective November 29, 2022, the National Weather Service will deploy an
upgrade to the Observation Processing to include observations from marine
surface autonomous vehicles (Saildrone), subsurface profilers (subsurface
float, glider and argos), snow cover from ground stations, and Global
Precipitation Mission Microwave Imager L1C radiances. Also, the current
Metop-B Advanced Very High Resolution Radiometer (AVHRR) Atmospheric
Motion Vectors (AMVs) will be replaced by new Metop-B and Metop-C AVHRR
AMVs products. Additionally, GPS Radio Occultation (RO) observations from
Sentinel-6A will be added to the existing Radio Occultation dump files.

The new Rapid Refresh (RAP), Real Time Mesoscale Analysis (RTMA),
UnRestricted Mesoscale Analysis, (URMA), Global Forecast System (GFS),
Global Data Assimilation System (GDAS), and Climate Data Assimilation
System (CDAS) networks will provide:

a) New GFS and GDAS bufr dump files:

*snocvr*.bufr_d - snow cover, depth/density, water equivalent from ground
stations
*gmicr*.bufr_d - GMI Level 1C-R Brightness Temperature Family (GPM-core
satellite)
*saldrn*.bufr_d - Surface Marine Saildrone (when available)
*subpfl*.bufr_d - Oceanographic subsurface float and glider profiles

b) Updated contents in bufr dump files for all networks except the North
American Model (NAM):

*satwnd*.bufr_d* - the current Metop-B AVHRR AMVs (tank b005/xx080, i.e.
NC005080) will be retired on Oct 31, 2022 and replaced by Metop-B and
Metop-C AVHRR AMVs (tank b005/xx081, i.e. NC005081) from a new winds
retrieval (so called nested-tracking) utilizing the BUFR format used for
GOES AMVs.
Users will need GFS v16.3 GSI code to read and use these new winds. *gpsro*.bufr_d.nr - GPSRO files will now include GPS Radio Occultation (RO) observations from Sentinel-6A (NC003010, SAID=066)

- All of the above new and updated BUFR dump files will be generated at the temporal frequency of the existing observational products, and will be shared on NCEP web services (NOMADS and FTPPRD)

- NAM will no longer include SYNDATA subsets in the generation of prepbufr files.

The above changes will affect data on NOMADS/FTTPRD as follows:

- New GFS and GDAS bufr dump files listed in a) will be available on NCEP web services at:

  https://nomads.ncep.noaa.gov/pub/data/nccf/com/obsproc/prod/
  https://ftpprd.ncep.noaa.gov/data/nccf/com/obsproc/prod/
  ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/obsproc/prod/

  {MOD}.{YYYYMMDD}/{MOD}.t{CC}z.{TYPE}.tm00.bufr_d

  where YYYYMMDD is forecast date, MOD is gfs and gdas, CC is forecast cycle, and TYPE is snocvr, gmiler, saldrn, and subpfl

- Updated contents of bufr dump files listed in b) will affect the following files on NCEP web services:

  https://nomads.ncep.noaa.gov/pub/data/nccf/com/obsproc/prod/
  https://ftpprd.ncep.noaa.gov/data/nccf/com/obsproc/prod/
  ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/gobsprocfs/prod/

  {MOD}.{YYYYMMDD}/{MOD}.t{CC}z.satwnd.tm00.bufr_d

  where YYYYMMDD is forecast date, MOD is gfs, gdas, rap, rap_e, rap_p, rtma_ru and CC is forecast cycle

  {MOD}.{YYYYMMDD}/{MOD}.t{CC}z.gpsro.tm00.bufr_d.nr

  where YYYYMMDD is forecast date, MOD is gfs and gdas and CC is forecast cycle

  cdas.{YYYYMMDD}/cdas.t{CC}z.satwnd.tm*.bufr_d.unblok

  where YYYYMMDD is forecast date and CC is forecast cycle

NCEP encourages users to ensure their processing is flexible to adequately handle the new data, as well as increased file sizes for satwnd and gpsro data. Even though content within the files has changed, downstream file readers should not need to change in response, except for the reader for satwnd data (see b) above).

Parallel data is available in the following locations:

https://nomads.ncep.noaa.gov/pub/data/nccf/com/obsproc/v1.1
https://nomads.ncep.noaa.gov/pub/data/nccf/com/obsproc/para
https://ftpprd.ncep.noaa.gov/data/nccf/com/obsproc/v1.1
https://ftpprd.ncep.noaa.gov/data/nccf/com/obsproc/para
ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/obsproc/v1.1
ftp://ftpprd.ncep.noaa.gov/pub/data/nccf/com/obsproc/para

Any questions, comments, or requests regarding this implementation should be directed to the contacts below. We will review any feedback and decide whether to proceed.

For any comments/feedback on the GPS-RO BUFR dump file upgrade at the Environmental Modeling Center (EMC), please contact:

Dr. Daryl Kleist
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NCEP Environmental Modeling Center
College Park, MD
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For questions regarding the data flow aspects, please contact:

Anne Myckow
NCEP Central Operations Dataflow Team
ncep.pmb.dataflow@noaa.gov

National Service Change Notices are online at:

https://www.weather.gov/notification

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