Upcoming WSR-88D Software Changes
That May Impact
Radar Product Central Collection Dissemination Service (RPCCDS) Users

Updated 24 July 2012

PURPOSE: Assist RPCCDS and other WSR-88D product users plan for WSR-88D changes that may impact data format, availability, uses, or data quality.

CURRENT STATUS:

- Dual Polarization Technology. The Dual Polarization modification has been completed at 79 operational WSR-88D sites. All 160 operational sites will be retrofitted by the end of summer 2013. The retrofit schedule, status updates and other information on the Dual Pol Project are available at: http://www.roc.noaa.gov/WSR88D/DualPol/Default.aspx.
    - Note: After a site is modified to Dual Polarization, the Automated Volume Scan Evaluation and Termination (AVSET) and Clutter Mitigation Decision (CMD) algorithms will be temporarily absent because the Dual Polarization contract-provided RDA software does not have the required software to support those algorithms. These capabilities will return when RDA Build 13 is installed, as described below.
- Build 13
    - Deployment
        - Shipment of RPG Build 13 software to sites has begun and will continue through September 2012. The software has been installed at 25 field sites.
        - Shipment of RDA Build 13 software to sites will begin in August 2012 to sites already modified to Dual Polarization. For other sites, RDA Build 13 will be shipped within 30 days after their Dual Polarization modification is completed. The software is in Beta Test at four sites (Tucson, AZ; Amarillo, TX; Vance AFB, OK; and Melbourne, FL).
    - Major RDA Build 13 changes
        - The AVSET function will return to sites as they load RDA Build 13 software. The AVSET function terminates a volume scan after the radar has scanned all the elevations with significant reflectivity returns and a new volume scan is started. Each volume scan is "dynamic" – the number of elevation angles scanned can change scan-to-scan. The net effect of AVSET is that lower elevations are scanned more often. The time savings achieved by AVSET depends on the volume coverage pattern (VCP) in use, and the areal coverage of and location of significant returns. For example, the VCP12 0.5^o base product update rate is 14/hr. With AVSET the VCP12 update rate can be ~19/hr. The Build 13 version of AVSET includes a new threshold to account for small convective cells.
        - The CMD algorithm capability will return to sites as they load RDA Build 13. The CMD is an advanced science algorithm that identifies clutter on a scan-by-scan basis and automatically builds a Bypass Map each volume scan. The Build 13 version of CMD includes two Dual Polarization variables to further improve algorithm performance at all scan angles.

- Improved spectrum width estimates will be possible through the use of new software in Build 13
- Major RPG Build 13 changes
  - The Enhanced Vertical Wind Profile (EVWP) algorithm will replace the legacy VWP algorithm (Note: there is no change in product format or product number (48)). The new algorithm improves the availability and accuracy of VWP wind estimates.
  - The RPG adds the top elevation angle AVSET terminated the scan to the Product Description Block.

PLANNED CHANGES:

- Build 13.1
  - Beta Test. The Beta Test of RPG and RDA Build 13.1 software at ~5 field sites is scheduled to begin in late October 2012.
  - Deployment. The shipment of RPG and RDA Build 13.1 software to field sites is scheduled to begin in January 2013.
  - Major RDA Build 13.1 changes:
    - Improved Velocity Dealiasing. The implementation of the Two-Dimensional Velocity Dealiasing (2D VDEAL) algorithm is the biggest improvement in reducing WSR-88D velocity dealiasing errors to date.
- Build 14 The projected Build 14 Beta Test start is August 2013. The start of software deployment is scheduled for the fall of 2013. The major build contents are being finalized.

ADDITIONAL INFORMATION:

- The configuration control requests included in Build 13 and Build 13.1 (RDA and RPG) are listed at: http://www.roc.noaa.gov/WSR88D/BuildInfo/SWBuildsList.aspx.
- Additional information on AVSET, EVWP, and 2D VDEAL is at: http://www.roc.noaa.gov/WSR88D/NewRadarTechnology/NewTechDefault.aspx.
- Warning Decision Training Branch (WDTB) materials:
  - For NEXRAD agency operators/all users for Build 13 RDA/RPG software are at: http://www.wdtb.noaa.gov/buildTraining/Build13/index.html.
  - A Dual Polarization training module for external users is at: http://www.wdtb.noaa.gov/courses/dualpol/index.html.
- Build 13.0 RPG Software Available. The NWS has a LINUX version of the WSR-88D RPG software called "The Common Operations and Development Environment" (CODE). The Build 13.0 software is available at: http://www.weather.gov/code88d/.
- Family of Service (FOS) Presentations. The slides presented in the radar portion of the June 2012 FOS meeting are at: http://www.roc.noaa.gov/WSR88D/Level_III/Level3Info.aspx.
- The ROC has a URL (https://ssm.roc.noaa.gov/hotline/main_ie.asp) for users to obtain:
  - A list of sites and which RPG and RDA software build the sites are using,
  - A list of sites and which VCP the sites are using, and
  - Other related information.
  - An updated version of FMH-11, Part A, is being reviewed by the NEXRAD agencies. The update is primarily for changes in Build 13 and Build 13.1. A near-final version of Part A should be available by early August 2012 and will be posted on the ROC web site.

Its posting will be announced in the "News & Information" section on the front page of the ROC web site. The final version of the updated Part A will be posted on the Office of the Federal Coordinator for Meteorology web site: (http://www.ofcm.gov/homepage/text/pubs.htm).

Send comments and questions to: Tim.D.Crum@noaa.gov.