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DOE/SC-ARM-13-021

ARM Climate Research Facility Quarterly Value-Added Product Report

C Sivaraman

October 2013

ARM

CLIMATE RESEARCH FACILITY

DISCLAIMER

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Fourth Quarter:
July 1–September 30, 2013

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Abstract

The purpose of this report is to provide a concise status update for value-added products (VAP) implemented by the Atmospheric Radiation Measurement (ARM) Climate Research Facility. The report is divided into the following sections: (1) new VAPs for which development has begun, (2) progress on existing VAPs, (3) future VAPs that have been recently approved, (4) other work that leads to a VAP, and (5) top requested VAPs from the archive. New information is highlighted in blue text. New information about processed data by the developer is highlighted in red text. The upcoming milestones and dates are highlighted in green.

Acknowledgements

This report is developed largely from the information submitted by the developers and task leads to the Extraview reporting system (http://ewo.arm.gov). Special thanks to our VAP development team for providing timely and complete updates to the Engineering Change Orders and Engineering Work Orders, Dana Dupont and Rolanda Jundt, who make sure that this information is posted accurately on the ARM website, Stefanie Shamblin of Oak Ridge National Laboratory for providing the metrics report on VAPs, and Dennis Ryley for preparing the graphics related to the metrics.

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1.0 New Value-Added Products (VAPs)

This section describes new activities that have begun in the last quarter after being approved by the ARM Infrastructure and Science Team.

No new VAP has been approved and started in the last quarter.

2.0 Existing VAPs

This section describes the status of each VAP and the ongoing activities that were approved to improve the performance of or maintain existing VAPs. The information is abstracted primarily from the monthly updates provided by the development team to the Engineering Change Orders (ECOs).

2.1 ARM Cloud Retrieval Ensemble Data Set (ACRED)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Chuanfeng Zhao and Renata McCoy, Lawrence Livermore National Laboratory

Status: In Development

Tier: Evaluation

Engineering Work Order-13590 has been approved to address the uncertainty in cloud retrievals and provide three different retrievals at the five ARM permanent research sites.

Version 2 of ACRED data has been staged in the evaluation area.

Next Milestone: The development of an ensemble Continuous Baseline Microphysical Retrieval (MICROBASE) cloud retrieval data set has been pushed back until further notice.

2.2 Atmospherically Emitted Radiance Interferometer Noise Filter (AERINF)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Tim Shippert, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.3 AERI Profiles of Water Vapor and Temperature (AERIPROF)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Tim Shippert, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

2.4 Aerosol Best Estimate (AEROSOLBE)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.5 Aerosol Intensive Properties (AIP)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.6 Aerosol Modeling Testbed (AMT)

Translator: Jerome Fast, Pacific Northwest National Laboratory

Developer: Chen Song and Manish Shrivastava, Pacific Northwest National Laboratory

Status: Operational

Tier: Evaluation

Engineering Work Order-13683 has been approved to port data from the Brookhaven National Laboratory Aerosol Life Cycle intensive operational period field campaign to the testbed.

No progress has been made last quarter.

Next Milestone: The bundling of the processed final test bed has been pushed back to December 30, 2013.

2.7 Aerosol Optical Depth Derived from Either MFRSR or NIMFR (AOD)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Connor Flynn, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.8 Aerosol Observing System Cloud Condensation Nuclei Average (AOSCCNAVG)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Yan Shi, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Work Order-14576 was approved to update the VAP to read the new input that now produces a 10-minute average.

The work has been completed.

2.9 Aerosol Observing System Correction (AOSCORR)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: On Hold

Tier: Evaluation

Engineering Work Order-00934 was approved to apply instrument corrections and calibrations to handle the Brookhaven National Laboratory AOS datastream.

The original plan has been put on hold due to the discrepancies with the National Oceanic and Atmospheric Administration (NOAA) AOS data and Brookhaven National Laboratory (BNL) AOS data. A teleconference was held with key stakeholders, and this task has been put on hold until the ingest work is completed.

2.10 ARM Best Estimate Cloud Radiation Measurements (ARMBECLDRAD)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Renata McCoy, Lawrence Livermore National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00620 has been approved to make updates to run Southern Great Plains (SGP), North Slope of Alaska (NSA) and Tropical Western Pacific (TWP) sites, publish the Cloud Modeling Best Estimate (CMBE) VAP to the Earth System Federated Grid (ESFG), and adhere CMBE to ARM data object design (DOD) standards to produce ARMBE.

ARMBE LAND data set has been released to the evaluation area. 95% work has been completed to run this product at ARM Mobile Facility (AMF) China deployment.

Next Milestone: Develop ARMBECLDRAD for the AMF China deployment and land data has been pushed back to November 04, 2013.

2.11 ARM Best Estimate Atmospheric Measurements (ARMBEATM)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Renata McCoy, Lawrence Livermore National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00620 has been approved to make updates to run SGP, NSA, and TWP sites, publish CMBE to the ESFG, and adhere CMBE to ARM DOD standards to produce ARMBE.

ARMBE LAND data set has been released to the evaluation area. Ninety-five percent of the work has been completed to run this product at AMF China deployment.

Next Milestone: Develop ARMBEATM for the AMF China deployment and land data has been pushed back to November 04, 2013.

2.12 Active Remote Sensing of Clouds (ARSCL)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Karen Jones, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00086 has been approved to catch up on processing of ARSCL data and development of a new ARSCL product for the upgraded Ka-band ARM zenith radar (KAZR) system.

One month of processing has been completed for TWP –C2 data.

Next Milestone: Complete historical processing of data has been moved to December 31, 2013.

2.13 Best Estimate Fluxes from EBBR Measurements and Bulk Aerodynamics Calculations (BAEBBR)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.14 Broadband Heating Rate Profile (BBHRP)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Tim Shippert, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00086 has been extended test the scalability of BBHRP.

Significant progress has been made on examining how BBHRP scales with a different number of processors. The VAP has also been ported to the ARM computer cluster and the code has been implemented to use RRTM_G (Rapid Radiative Transfer Model for General Circulation Model), and testing is in progress using RRTM_G on the Pacific Northwest National Laboratory Institutional Computing (PIC).

2.15 Best Estimate Surface Radiative Flux (BEFLUX)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Yan Shi, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.16 Cloud Concentration Nuclei Profile (CCNPROF)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

2.17 Cloud Classification (CLDCLASS)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chaomei Lo, Pacific Northwest National Laboratory

Status: No Development

Tier: Evaluation

There are no open ECOs for this VAP.

2.18 Corrected Moments in Antenna Coordinates (CMAC)

Translator: Scott Collis, Argonne National Laboratory

Developer: Scott Collis, Argonne National Laboratory

Status: In Development

Tier: Evaluation

Next Milestone: Review comments from beta users by December 30, 2013.

2.19 Convective Vertical Velocity VAP (CONVV)

Translator: Scott Collis, Argonne National Laboratory

Developer: Kirk North, McGill University

Status: In Development

Tier: Evaluation

Engineering Work Order-13978 was approved to initiate and coordinate the development of the Convective Vertical Velocity (CONVV) VAP to assist in implementing a convective Vertical Velocity VAP for the Midlatitude Continental Convective Clouds Experiment (MC3E).

Next Milestone: Review comments from beta users by December 30, 2013.

2.20 G-Band Vapor Radiometer Precipitable Water Vapor (GVRPWV)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.21 Interpolated Sonde (INTERPSONDE)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.22 Ka-band Zenith-Pointing Radar Active Remote Sensing of Clouds (KAZRARSCL)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Karen Johnson, Brookhaven National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00899 was approved to initiate and coordinate the development of an ARSCL-like VAP to enhance the scientific value of data collected by the KAZR, the follow-on to the now-retired millimeter-wavelength cloud radar.

No progress has been made due to other priorities.

2.23 Langley Regression (LANGLEY)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.24 Microwave Radiometer-Scaled Sonde Profiles (LSSONDE)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

The data has been sent to be hosted in the evaluation area.

2.25 Merged Sounding (MERGESONDE)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: Operational

Tier: Production

2.26 Cloud Optical Depth from MFRSR (MFRSRCLDOD)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Yan Shi, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00287 has been approved to update the VAP to run with the Microwave Radiometer Retrievals VAP (MWRRET) to input, run, and evaluate data from the AMF Azores deployment, then release the product.

The data has been run at NSA for a long period of time. Waiting on WACR-ARSCL data to run at GRW.

Next Milestone: No new milestone has been set.

2.27 MFRSR Column Intensive Properties (MFRSRCIP)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00823 has been approved to develop a VAP to retrieve aerosol column intensive properties from the multifilter rotating shadowband radiometer (MFRSR), including single scattering albedo, asymmetry parameter, and bi-modal log-normal size distributions.

Comments have been reviewed and progress has been made in adding quality checks.

Next Milestone: No new milestone has been set.

2.28 MICRO-ARSCL (MICROARSCL)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Ed Luke, Brookhaven National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00847 has been approved to solve the spectral imaging problem and porting MICROARSCL to the ARM computer cluster at Oak Ridge National Laboratory.

The header has been updated to meet ARM standards.

Next Milestone: Reprocess historical data at Oak Ridge National Laboratory. This milestone has been pushed back to December 31, 2013.

2.29 Continuous Baseline Microphysical Retrieval (MICROBASE)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Karen Johnson, Brookhaven National Laboratory

Status: On Hold

Tier: Evaluation

2.30 MAGIC KAZR and MAGIC WACR (MKAZR and MWACR)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Order-00957 has been approved to correct ship motion for the cloud radar data for the MAGIC deployment.

2.31 Mapped Moments to Cartesian Grid (MMCG)

Translator: Scott Collis, Argonne National Laboratory

Developer: Scott Collis, Argonne National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Order-00887 was approved to develop a VAP to map the radar moments to the Cartesian grid.

Next Milestone: Review of the user feedback to be completed by December 30, 2013.

2.32 Micropulse Lidar Cloud Optical Depth (MPLCOD)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chaomei Lo, Pacific Northwest National Laboratory

Status: No Development

Tier: Evaluation

There are no open ECOs for this VAP.

2.33 Micropulse Lidar Polarized Average (MPLAVG)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.34 MPL Cloud Mask (MPLCMASK)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

2.35 Microwave Radiometer Retrievals (MWRRET)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00526 has been approved to transition the product from evaluation to production, release the product, and process historical data.

This product is waiting for the WACR-ARSCL VAP to be available at the ARM Data Archive.

Next Milestone: Process AMF data when WACR-ARSCL is reprocessed.

2.36 Microwave Radiometer Retrieval Version 2 (MWRRET2)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00985 has been approved to update the current retrieval algorithm to be more flexible so that it can work with any set of n microwave frequencies to retrieve precipitable water vapor (PWV) and liquid water path (LWP).

One year of data is being processed with significant progress on the development of the VAP.

Next Milestone: Process SGP, GAN, NSA, and GRW data with the latest code by December 30, 2013.

2.37 Droplet Number Concentration (NDROP)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Order-00955 has been approved to initiate and coordinate the development of a VAP to implement a method for determining droplet number concentration.

Comments from the Standard Committee has been reviewed and incorporated to the VAP. The DOD has been approved by the committee.

Next Milestone: Waiting on WACR-ARSCL data to process Azores data. Review user feedback by December 31, 2013. No other milestone has been set.

2.38 Organic Aerosol Component Analysis (OACOMP)

Translator: Jerome Fast, Pacific Northwest National Laboratory

Developer: Tim Shippert, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00838 has been approved to develop a VAP to estimate organic aerosol components from Aerosol Mass Spectrometers (AMS) and Aerosol Chemical and Speciation Monitors (ACSM) to be deployed at ARM's sites and as part of the Mobile Aerosol Observing System (MAOS).

The data have been processed and staged in the archive.

2.39 Planetary Boundary Layer Height (PBLHT)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00893 has been approved to initiate and coordinate the development of a VAP to implement methods for PBL height detection using radiosondes, ceilometer, and Micropulse Lidar.

The VAP has been released and made operational at the Data Management Facility (DMF).

Next Milestone: Release the PBLHT VAP to production by September 30, 2013.

2.40 Python ARM Radar Toolkit (PYART)

Translator: Scott Collis, Argonne National Laboratory

Developer: Scott Collis, Argonne National Laboratory

ARM Data Integrator (ADI) and PYART have been integrated and ongoing work will not be documented in this report.

2.41 Quality Checked Eddy Correlation (QCECOR)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Yunyan Zhang, Argonne National Laboratory

Engineering Work Order-00941 was approved to apply quality checks, and to correct the latent and sensible heat fluxes for historical eddy correlation flux measurement system (ECOR) data.

The data have been updated to meet DOD standards using ADI and sent to the archive. The work is complete.

2.42 Data Quality Assessment for ARM Radiation Data (QCRAD)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Yan Shi, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.43 Quantitative Precipitation Estimate (QPE)

Translator: Scott Collis, Argonne National Laboratory

Developer: Scott Collis, Argonne National Laboratory

Status: On Hold

Tier: Evaluation

Engineering Work Order-00936 was approved to produce the QPE VAP for the Manus C-band scanning ARM precipitation radar for ARM MJO Investigation Experiment (AMIE) campaign data.

The C-Band ARM Precipitation Radar (CSAPR) data at SGP and TWP has been released to the evaluation area.

Next Milestone: No other milestone has been set.

2.44 Raman Lidar Profiles—Aerosol Scattering Ratio (RLPROFASR)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.45 Raman Lidar Profiles—Best Estimate (RLPROFBE)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.46 Raman Lidar Profiles—Depolarization Ratio (RLPROFDEP)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

2.47 Raman Lidar Profiles—Extinction (RLPROFEXT)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.48 Raman Lidar Profiles—MERGE (RLPROFMERGE)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.49 Raman Lidar Profiles—Mixing Ratio (RLPROFMR)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.50 Raman Lidar Profiles—Temperature (RLPROFTEMP)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.51 Radiatively Important Parameters Best Estimate (RIPBE)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Tim Shippert, Pacific Northwest National Laboratory

Status: Operational

Tier: Evaluation

The RIPBE data was generated and sent to the evaluation area for the MC3E period.

2.52 Shortwave Array Spectroradiometer Hemispheric Aerosol Optical Depth (SASHE AOD)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Brian Ermold, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00959 has been approved to initiate and complete development of additional input to the existing Aerosol Optical Depth (AOD) VAP, using Shortwave Array Spectroradiometer–Hemispheric (SASHE) data to calculate AOD.

The VAP has been released to operations. The work is complete.

2.53 Shortwave Array Spectroradiometer Hemispheric Column Intensive Properties (SASHECIP)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Annette Koontz, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-01014 has been approved to develop a VAP to retrieve aerosol column intensive properties from the shortwave array spectrometer hemispheric column, including single scattering albedo, asymmetry parameter, and bi-modal log-normal size distributions. The proposal is to extend this MFRSRCIP product to use measurements from the SASHE, including wavelengths in the NIR, which will improve the retrieval sensitivity to coarse-mode particles.

No progress has been made to this VAP.

2.54 Shortwave Array Spectroradiometer Hemispheric Langley (SASHE LANGLEY)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Brian Ermold, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00958 has been approved to initiate and coordinate the development of additional input to the existing LANGLEY VAP, implementing the Langley regression on SASHE instrument data.

The VAP has been released to operations. The work is complete.

2.55 SGP Area Surface Cloud and SW Radiation Grid (SFCCLDGRID)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.56 SONDE Adjust (SONDEADJUST)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: In Development

Tier: Production

2.57 Sea-Surface Temperature (SST)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Yan Shi, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00970 has been approved to develop to derive sea-surface temperature (SST) from the IRT measurements for the MAGIC deployment.

Some progress has been made to calculate the angular dependent emissivity values.

Next Milestone: Release the data to evaluation by November 30, 2013.

2.58 Surface Spectral Albedo (SURFSPECALB)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-13943 and 14346 have been opened to manage processing of the data at the DMF and to adapt to NSA.

The VAP has been released to operations. The work is complete.

2.59 Shortwave Flux Analysis (SWFLUXANAL)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.60 Tower Water Vapor Mixing Ratio (TWRMR)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Krista Gaustad, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

There are no open ECOs for this VAP.

2.61 UHF ARM Profiling Radar Actively Remotely Sensed Atmospheric Layers (UAPARSAL)

Translator: Scott Collis, Argonne National Laboratory

Developer: Edwin Campos, Argonne National Laboratory

Status: On Hold

Tier: Evaluation

Engineering Change Order-00967 has been approved to initiate and complete a product that uses the UHF ARM Zenith Radars (UAZR) and a variety of supporting instruments to retrieve information about precipitating cloud systems and planetary boundary layer heights and information.

No progress has been made to this VAP.

Next Milestone: No milestone has been set.

2.62 Variational Analysis (VARANAL)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Renata McCoy, Lawrence Livermore National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Request-00096 (ECR-00096) has been approved to develop continuous large-scale forcing data.

The development of initial ensemble forcing for the MC3E period is progressing well. A new task has been added to reprocess continuous forcing at SGP for 2002-2010.

Next Milestone: The development of ensemble large-scale forcing data for MC3E has been pushed back to December 31, 2013.

2.63 Vertical Velocity in Stratiform Rain (VVSR)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Karen Johnson, Brookhaven National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Order-00865 was approved to initiate and coordinate the development of the VAP to generate profiles of vertical air motion during large-scale stratiform liquid precipitation. It will include information on the horizontal and vertical sheer of the velocity.

Next Milestone: Review user comments by December 30, 2013.

2.64 W-Band ARM Cloud Radar Active Remote Sensing of Clouds (WACR-ARSCL)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Request-00826 has been approved to run WACR-ARSCL at all AMF deployments and continue development at SGP.

The data for NIM, PYE and FKB has been sent to the archive after minor DOD corrections. The GRW data is being reviewed.

Next Milestone: Release the data to the ARM Data Archive by December 30, 2013.

3.0 Future VAPs

This section describes new activities that have been approved in the last quarter by the ARM Science and Infrastructure Steering Committee. Work on these activities will begin in the next quarter.

White papers are being written for VAPs related to the Liquid Water Content VAP, Scanning ARM Cloud Radar VAP and the Doppler Lidar Velocity-Azimuth-Display VAP.

4.0 VAP Metrics

This section lists the top five VAPs that were requested by users from the ARM Data Archive during the third quarter.

Figure 1. This chart shows the top five VAPs requested by users from the ARM Data Archive during the fourth quarter ordered by number of unique requests.

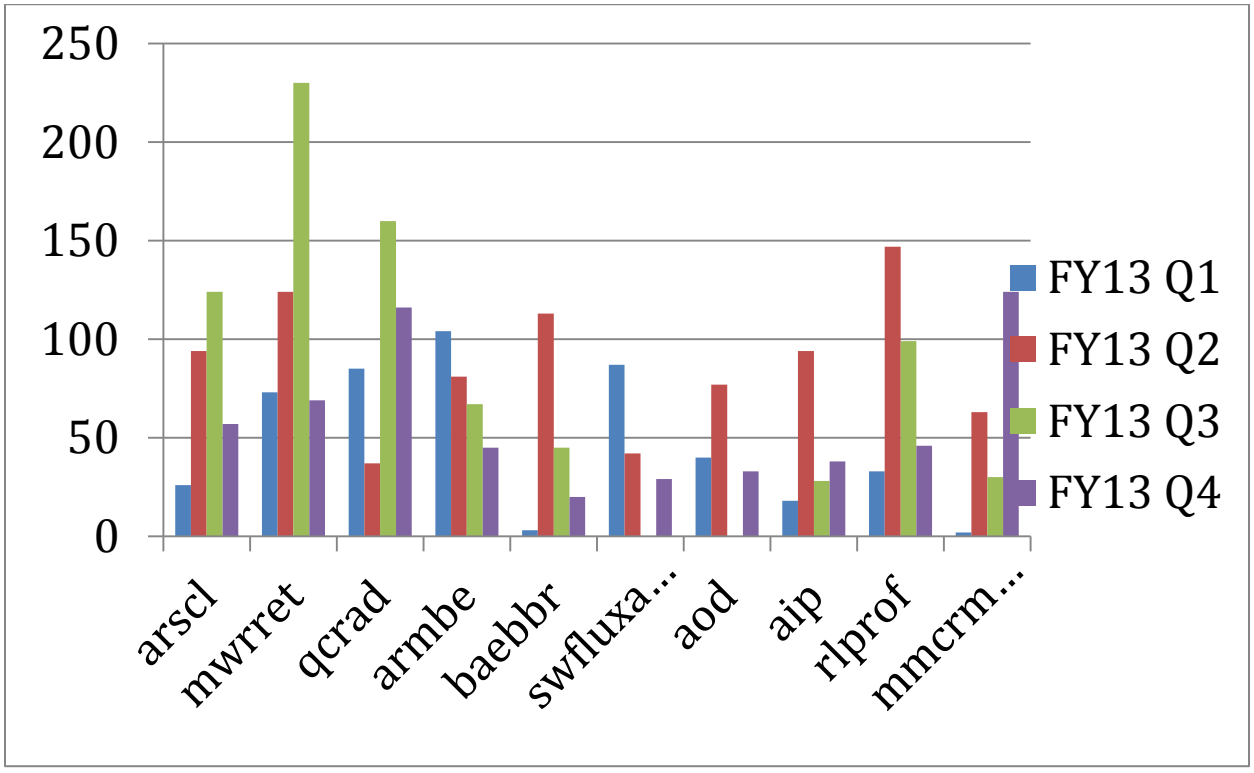


Figure 2. This chart shows the top five VAPs that were requested by users from the ARM Data Archive during the last four quarters ordered by unique users.

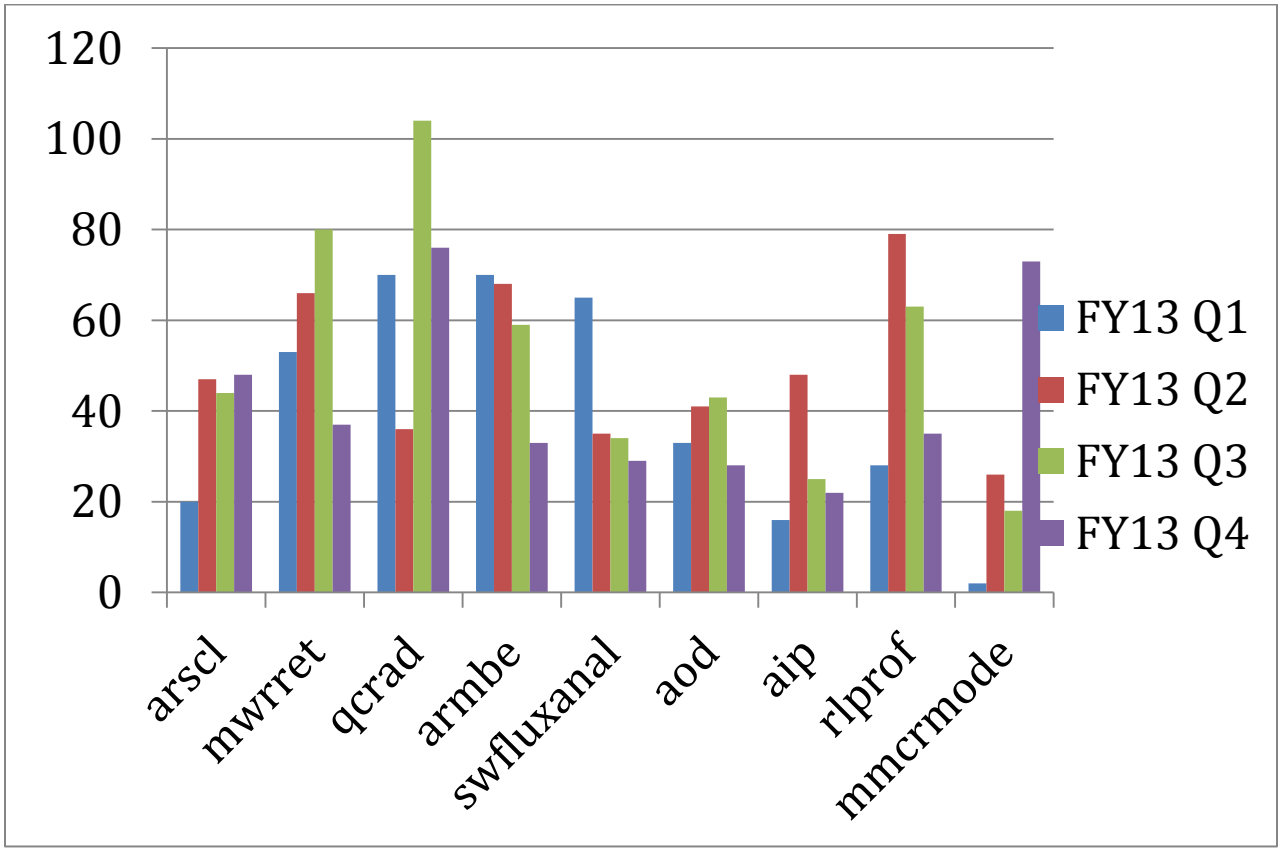
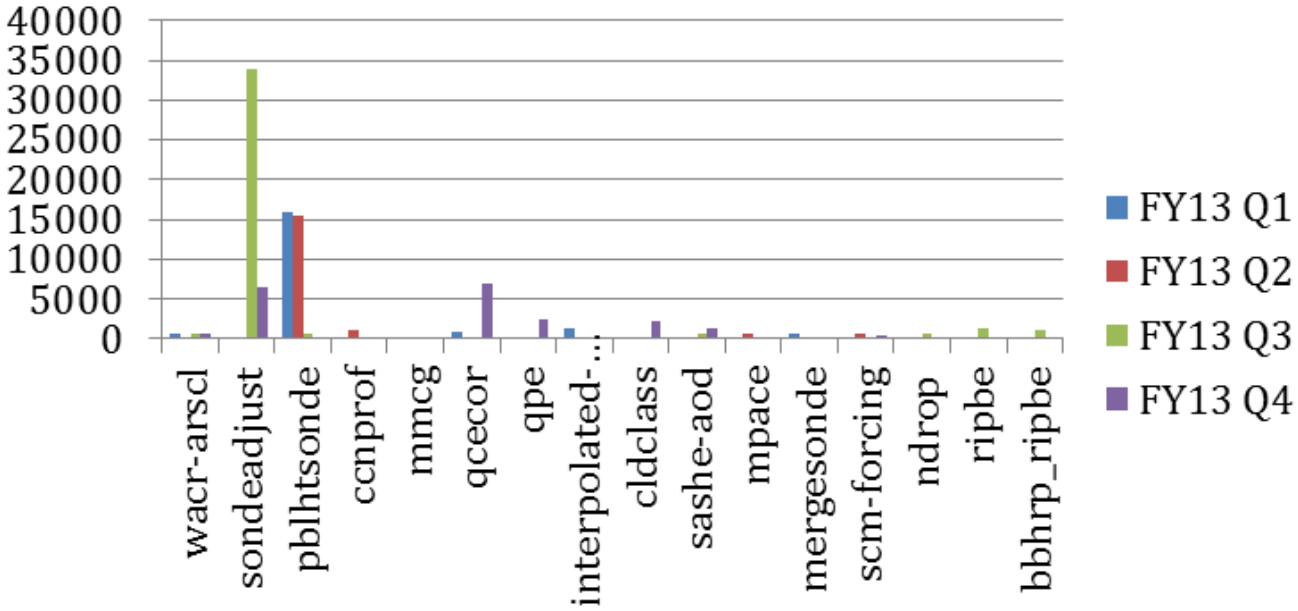


Figure 3. The chart shows the top five VAPs downloaded from the evaluation area for the last four quarters.



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