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ARM Climate Research Facility Quarterly Value-Added Product Report

C Sivaraman

July 2013



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**Third Quarter:
April 1–June 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 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

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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.

1.1 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.

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 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.

2.2 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

The VAP has been updated and released to read the Rapid Refresh Data (RAP) input data.

2.3 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.

2.4 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.

No progress has been made.

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

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.

[Revised the documentation for the combined Carbonaceous Aerosols and Radiative Effects Study \(CARES\)/California Nexus \(CalNex\) data set.](#)

[Next Milestone: The bundling of the processed final testbed has been pushed back to August 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 AOSCCNAVg c2 data have not been processed due to changes in the mentor-edited input data.

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 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.

Seventy-five percent progress has been made to develop a land data set to support land modeling studies.

Next Milestone: Develop ARMBEATM for the AMF China deployment and land data set by September 30, 2013.

2.11 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.

Seventy-five percent progress has been made to develop a land data set to support land modeling studies.

Next Milestone: Develop ARMBECLDRAD for the ARM Mobile Facility (AMF) China deployment and land data set by September 30, 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.

No progress has been made in the last quarter due to other priorities.

Next Milestone: Complete historical processing of data has been moved to October 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

There are no open ECOs for this VAP.

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

Engineering Work Order-13977 was approved to initiate and coordinate the development of CMAC in evaluation at the SGP.

Progress has been made to improve clutter masking and phase processing for X-band scanning ARM precipitation radar (XSAPR) data. The CSAPR data is ready for review by the ARM Standards Policy Committee.

Next Milestone: The date to release data to evaluation has been extended to July 31, 2013, since there are challenges with clutter in the lowest tilt of the XSAPR.

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 CONVV VAP to assist in implementing a convective Vertical Velocity VAP for Midlatitude Continental Convective Clouds Experiment (MC3E).

Work is being performed on meeting DOD standards.

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

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

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.

2.25 MAGIC KAZR and MAGIC WACR (MKAZR and MWACR)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: In Development

Tier: Evaluation

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

[Ninety percent progress has been made in the development of this product.](#)

[Next Milestone: Complete documentation and upload it to the evaluation area.](#)

2.26 Merged Sounding (MERGESONDE)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: Operational

Tier: Production

Engineering Change Order-00092 has been approved to add quality check fields and release the second version of the code to the DMF.

[The VAP has been released to production.](#)

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.

[No task was scheduled for this quarter.](#)

Next Milestone: Review comments and update the VAP by October 1, 2013.

2.28 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) as input, run, and evaluate data from the AMF Azores deployment, and release the product.

The task of porting the VAP to ARM Data Integrator (ADI) has been completed. This will speed the tasks of running the VAP at NSA.

Next Milestone: Completion of processing and analyzing of historical data has been pushed back to September 30, 2013.

2.29 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 generic user profile (GUP) implementation of the insect clutter detection algorithm has been completed.

Next Milestone: Reprocess historical data at Oak Ridge National Laboratory. This milestone has been pushed back to June 30, 2013.

2.30 Continuous Baseline Microphysical Retrieval (MICROBASE)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: Karen Johnson, Brookhaven National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00804 has been approved to update the VAP with quality checks and release to production.

Next Milestone: Complete processing of data for the AMF GAN Island deployment as soon as MWRRET data are available.

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 Cartesian grid.

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

2.32 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.

2.33 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.

2.34 MPL Cloud Mask (MPLCMASK)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: Operational

Tier: Production

[A minor update was completed due to changes in the global attributes in the input file.](#)

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).

[Fifty percent progress has been made to update the DOD and code.](#)

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

Next Milestone: Waiting on WACR-ARSCL data to process Azores data. Review user feedback by September 30, 2013.

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 is ready to be staged in the evaluation area.](#)

2.39 Planetary Boundary Layer Height (PBLHT)

Translator: Laura Riihimaki, Pacific Northwest National Laboratory

Developer: Chitra Sivaraman, Pacific Northwest National Laboratory

Status: In Development

Tier: Evaluation

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 Micro Pulse Lidar.

The code has been ported to ADI. The DOD review for both daily and yearly files has been completed. The data has been processed at SGP, TWP, NSA, and AMF sites and has been submitted for review. The technical report is under development.

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

Engineering Change Order-00920 was approved to initiate and coordinate the development of a toolkit that is usable by the ARM community for working with all the radar data formats produced by the scanning ARM precipitation radars (SAPRs).

The work for PYART has been completed.

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, correct the latent, and sensible heat fluxes for historical eddy correlation (ECOR) data.

Data for all sites (surface flux using old ECOR data) have been released to the evaluation area.

Next Milestone: Review DOD comments and determine path forward.

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: In Development

Tier: Evaluation

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

[The CSAPR data at SGP is still under evaluation. The CSAPR Manus data has been provided to reviewers.](#)

[Next Milestone: The data will be released by August 30, 2013.](#)

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

2.52 Shortwave Array Spectroradiometer Hemispheric Aerosol Optical Depth (SASHEAOD)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Brian Ermold, Pacific Northwest National Laboratory

Status: Operational

Tier: Evaluation

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.

Next Milestone: Review DOD comments and determine path forward.

2.53 Shortwave Array Spectroradiometer Hemispheric Langley (SASHELANGLEY)

Translator: Connor Flynn, Pacific Northwest National Laboratory

Developer: Brian Ermold, Pacific Northwest National Laboratory

Status: Operational

Tier: Evaluation

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.

Next Milestone: Review DOD comments and determine path forward.

2.54 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.

2.55 SONDE Adjust (SONDEADJUST)

Translator: Mike Jensen, Brookhaven National Laboratory

Developer: David Troyan, Brookhaven National Laboratory

Status: In Development

Tier: Evaluation

Engineering Change Order-00824 has been approved to correct the documented biases in radiosonde humidity measurements.

[The VAP has been released to production.](#)

2.56 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.

[Progress has been made in calculating the SST data using a variety of constant emissivities.](#)

[Next Milestone: Release the data to evaluation by September 30, 2013.](#)

2.57 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.

Ninety-nine percent progress has been made to adapt the VAP to run at NSA, but the script is not yet processing data at the DMF. The historical data has been processed and archived for NSA.

Next Milestone: Complete the release process.

2.58 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.

2.59 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.

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

Translator: Scott Collis, Argonne National Laboratory

Developer: Edwin Campos, Argonne National Laboratory

Status: In Development

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.

Significant progress has been made to the PBL top code. The code is being developed in the ARM computer cluster.

Next Milestone: Release of evaluation data set by September 30, 2013.

2.61 Variational Analysis (VARANAL)

Translator: Shaocheng Xie, Lawrence Livermore National Laboratory

Developer: Renata McCoy, Lawrence Livermore National Laboratory

Status: Operational

Tier: Evaluation

Engineering Change Request-0096 (ECR-0096) has been approved to develop continuous large-scale forcing data.

The development of initial ensemble forcing for the MC3E period is 70% completed. 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.

2.62 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 shear of the velocity.

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

2.63 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 task of reviewing the DOD and the data is 90% complete.

Next Milestone: Release the data to the ARM Data Archive by August 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 and Scanning ARM Cloud Radar 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.

Table 1. Top five VAPs requested by users from the ARM Data Archive during the third quarter ordered by number of unique requests.

	N files requested	N unique requests	N unique users
MWRRET	315429	230	80
QCRAD	108649	160	104
ARSCL	100325	124	44
RLPROF	34617	99	63
ARMBE	638	67	59

Table 2. Top five VAPs requested by users from the evaluation area of the Data Archive during the third quarter.

	N files requested
SONDEADJUST	33940
RIPBE	1282
BBHRP_RIPBE	1189
NDROP	722
PBLHTSONDE	687

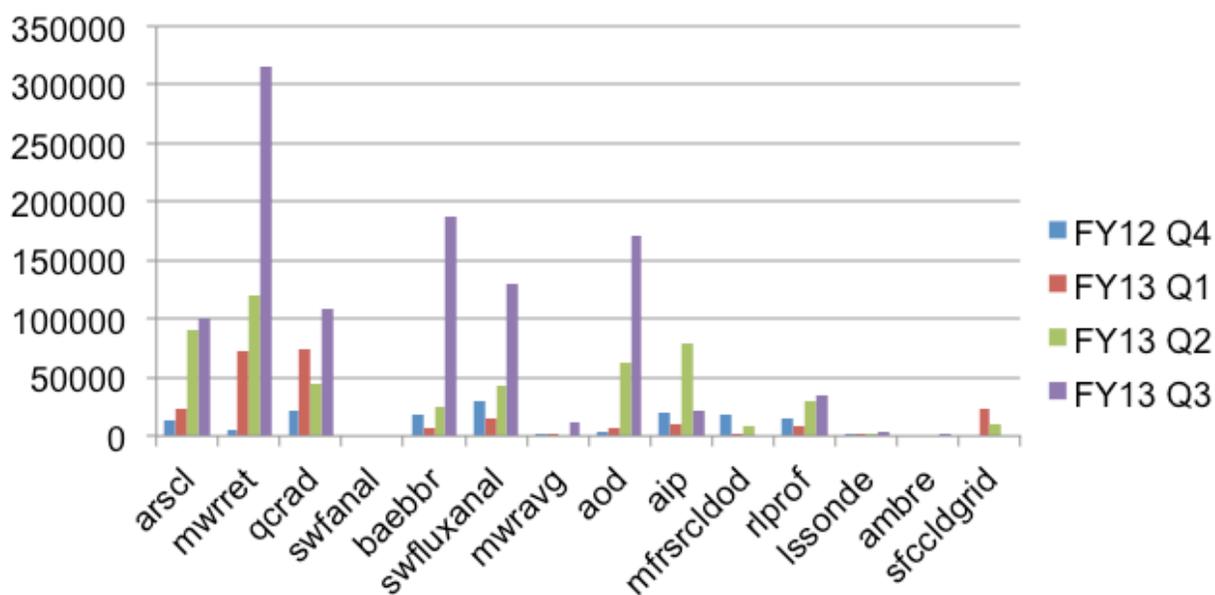


Figure 1. This chart shows the top five VAPs that were requested by users from the Data Archive during the last four quarters.

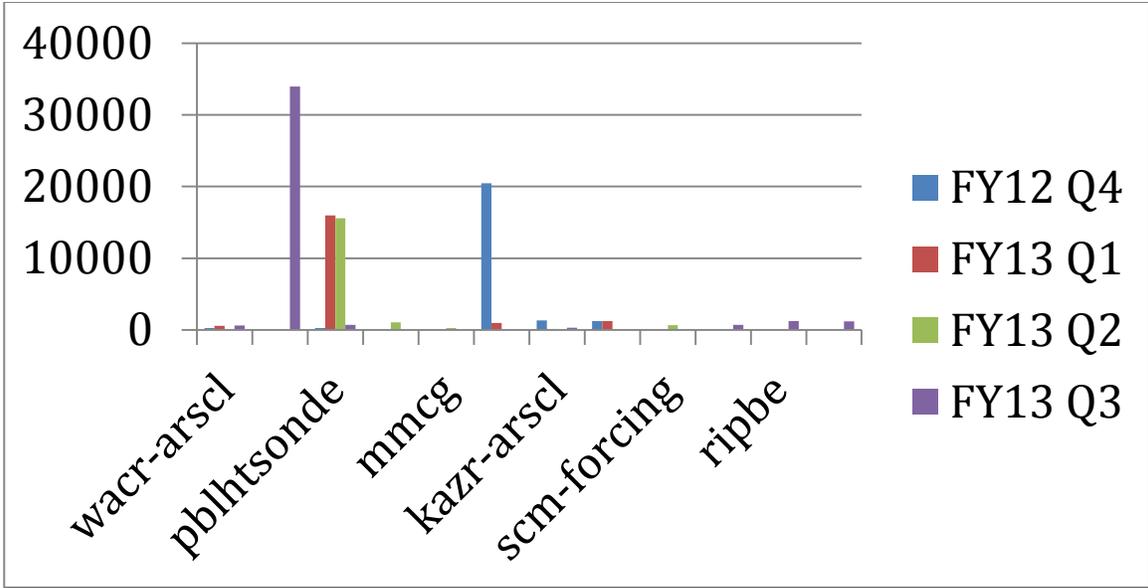


Figure 2. The chart shows the top five VAPs downloaded from the evaluation area for the last four quarters.



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