

# Value Added Products (VAP) Status and Recommendations

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# Introduction

Value Added Products (VAPs) provide additional information relative to basic ARM datastreams:

- Higher order geophysical parameters (LWC, IWC, flux profiles, cloud classification, variational analysis)
- Improved retrievals (physically-based LWP)
- Data QC (radiation quality assessment)
- Synthesis Products (Cloud Modeling Best Estimate)

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Analysis by sunset committee (and others) indicates that VAP resources are overcommitted.

# Evaluation of VAP Status

## Review of the current VAP status

- Same conclusion as Sunset C.— spend more on VAPs or trim effort
- Updated and expanded analysis of VAP effort to reflect different states of VAPs: development, operations, and reprocessing and to account for additional effort due to the AMF.

Breakdown in effort expected for FY09 (given status quo and projection of likely AMF needs) expressed in FTEs:

Development	2.9
Operations	5.0
AMF	1.9
<u>Reprocessing</u>	<u>0.2 (Low estimate)</u>
Total	10.0

# Current VAPs

QC'd Broadband Fluxes  
Broadband Flux Analysis  
Shortwave Flux Analysis  
Shortwave Diffuse Correction  
Global Shortwave Correction  
Surface Spectral Albedo

Radiation

Misc.  
Multi-input

Radiative Heating Profile  
Variational Analysis  
Cloud Modeling Best Estimate

T/RH

Raman Lidar Profiles  
AERI T/RH Profiles  
MWR Retrievals  
Merged Sounding  
Leibe-Scaled Sondes  
Tower mixing ratios

35 GHz Radar/lidar cloud mask  
94 GHz Radar Cloud Mask  
Cloud prop. from radar spectra  
Cloud Classification  
Baseline Microphysical retrievals  
MPL, Cloud Optical Depth  
MFRSR Cloud Optical Depth  
Shortwave Cloud Grid

Clouds

**31 VAPs**

Misc.  
Instrument

Microwave Radiometer Average  
Lidar, Polarization Average  
Infrared Spectrometer Noise Filter  
Lidar, Corrected/normalized Profiles  
Best Estimate Bulk Fluxes

Aerosol

MFRSR Langley  
MFRSR Optical Depth  
Aerosol Best Estimate  
Aerosol Intensive Properties

# Additional Needs

- Scanning WACR products
- Products for 3-channel MWR
- Support for AMF2
- MPL products (TBD by lidar group)
- Additional BBHRP cases
- QA/QC (For VAPs and with VAPs)

# Potential Applications for VAP Effort

How do we best make use of VAP effort?

Are there VAP-related activities that would have more impact than current mode of operation?

# Potential Applications for VAP Effort

A few alternatives to sole focus on generation of advanced datastreams:

- Refinement of BBHRP as a retrieval testbed
- Support for a community radiative transfer model
- Development of a parameterization testbed using NCAR/CAM
- Facilitate use of ARM data by science community (eg. code sharing)
- Facilitate development of PI products (eg. shared libraries)

# Status

Do we need to change?

- We are currently saturated
- There are Specific needs on the horizon
- There are activities that may enhance use of ARM data

***It seems clear that we need to reduce or eliminate effort on some VAPs.***

# Status

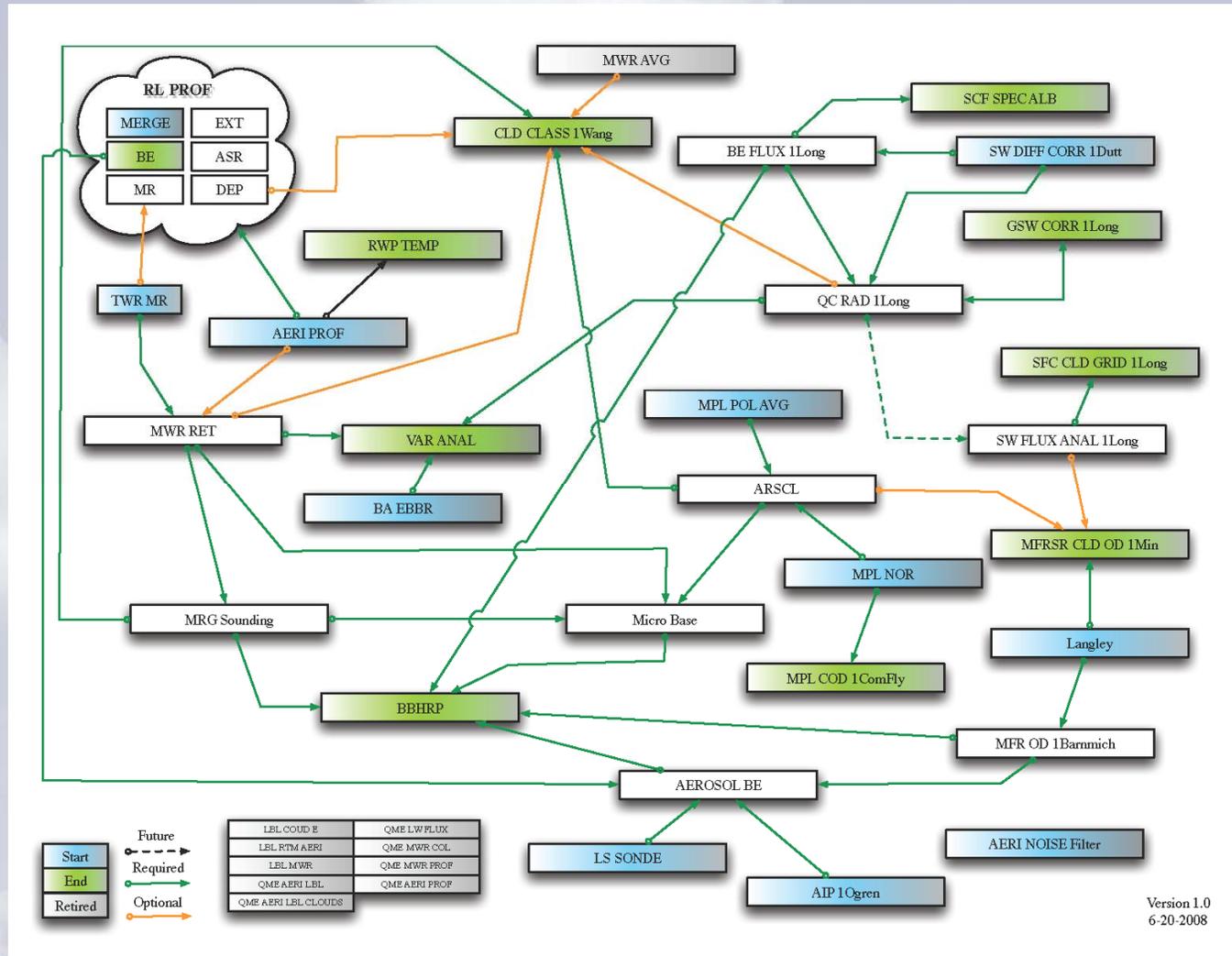
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Can we solve the problem by eliminating lower priority VAPs?

# VAP Dependencies



Which do we cut?

# Challenges to Reducing Effort

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→ ~6 FTE

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Conclusion: We need to reduce effort in some of these complex VAPs.

# VAP-Related Activities

There are a range of activities associated with the production of a VAP:

- Development
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- Refinement
- Reprocessing

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Some of these are more appropriate for the infrastructure than others.

# Recommendations

- Reduce effort of selected second order VAPs (possible candidates: Surface spectral albedo, Aerosol Best Estimate, Microbase, BBHRP, Variational Analysis)
- Adopt process like instrument rankings within working groups to provide recommendations for use of limited VAP resources
- Facilitate use of BBHRP by user community to expand cases
- Work to improve efficiencies of complex first order VAPs (particularly ARSCL), could include outsourcing of some VAP development
- Develop framework/tools to facilitate sharing of codes within science community to expand use of data

# Challenges

- Improving efficiency requires an investment, won't save right away.
- Need to do better at balancing loads among working groups/labs
- Proposing to push complex VAP work to science community just as the emphasis there is shifting to models
- Outsourcing VAPs may provide some relief but need to bring core capability to infrastructure

# Next Steps

- Working with translators/developers to reduce effort for the most complex VAPs.
- Support new products for scanning radar and lidar
- Enable broad access to BBHRP and CAM Single Column Model
- Develop mechanisms for code sharing – pending community interest