

# **A Review of the Status and Direction of VAP Development and Operations**

**Working Group Meetings  
Fall 2006**

The ARM Science Translators:

Connor Flynn, Chuck Long, Jennifer Comstock,  
Mike Jensen, Dave Turner, Shaocheng Xie

## **Aerosol Working Group:**

Connor Flynn

## **Cloud Modeling Working Group:**

Shaocheng Xie

## **Cloud Properties Working Group:**

Mike Jensen

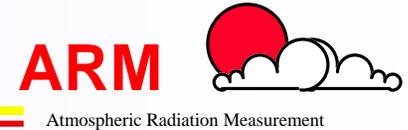
## **Radiative Properties Working Group:**

Chuck Long

## **CLOWD Working Group:**

Jennifer Comstock & Dave Turner

# VAPs Add Critical Value to ARM Data



## VAPs add value to input datastreams:

- Geophysical quantities unavailable by direct means
  - Cloud properties from ARSCL
  - Vertical profiles from MWR
- Apply corrections or calibrations to input data
  - SW Diff Corr, RL Prof, MPLnor
- Perform comparisons of geophysical quantities
  - QME AERI LBL, QME AERI Prof
- Best Estimate of geophysical quantity.
  - RL Prof BE, SW Flux Anal, Aerosol BE

❖ **VAPs are recommended, and supported by the Working Groups with an identified Science Team Point-of-Contact**

**Total VAPs in production or development: 47**

# Official VAP Development Cycle

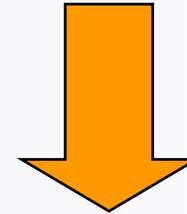
## 1. Discussion

- VAP idea proposed to Working Group
- WG/Translator prioritize VAPS
- Sponsor POC identified



## 2. Planning

Programmatic prioritization  
Allocation of resources



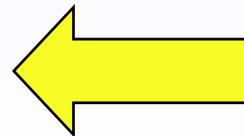
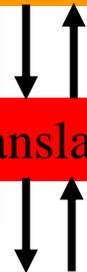
## 3. Development

Beta-Test  
Documentation

PI Sponsor

Translator

Developer



## 4. Production

- Hands-Off Operations
- VAP output stored in the archive

# ... with a dose of “Reality”.

- **Complex VAPs tend to remain in the development stage**
  - Examples: BBHRP, MICROBASE, MWR Retrieval
- **Near-real time operation is applicable only to some VAPs**
  - Corrections/calibrations often require extended time series
  - Examples: MFRSR OD, IR Loss Correction
- **Some are impossible or impractical to fully automate**
  - Examples: ARSCL, Variational Analysis
- **Some VAPs may automate well but are dependent on varying corrections that change unpredictably**
  - Examples, Raman Lidar and Micropulse Lidar VAPs

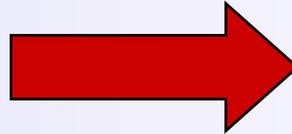
# Other Issues Impacting VAP Schedules

- Program-wide standardization
  - Example: Updating existing VAPs to new QC standards
- Reprocessing due to problems with VAP dependencies
  - Example: MFRSR raw -> MFRSR AOD -> BBHRP
- Needs for updating existing VAPs
  - Examples: updating codes and data object design; documenting older VAPs currently in production

# Revised VAP Development Cycle

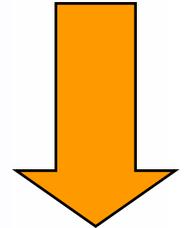
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VAP idea proposed to Working Group  
WG/Translator prioritize VAPS



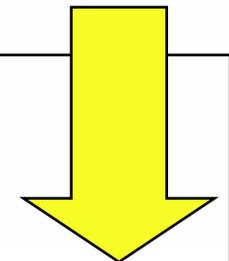
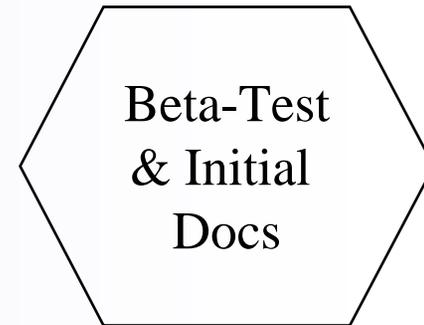
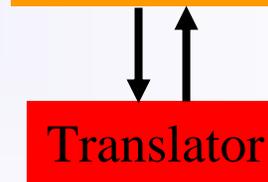
## 2. Planning

Programmatic prioritization  
Allocation of resources



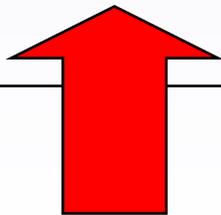
## 3. Development

PI Sponsor



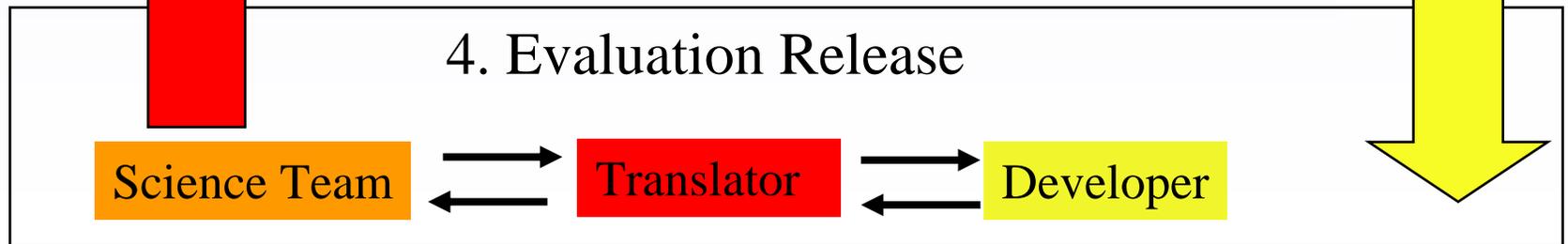
## 5. Production

Manual or Auto. Operations  
VAP output stored in the archive

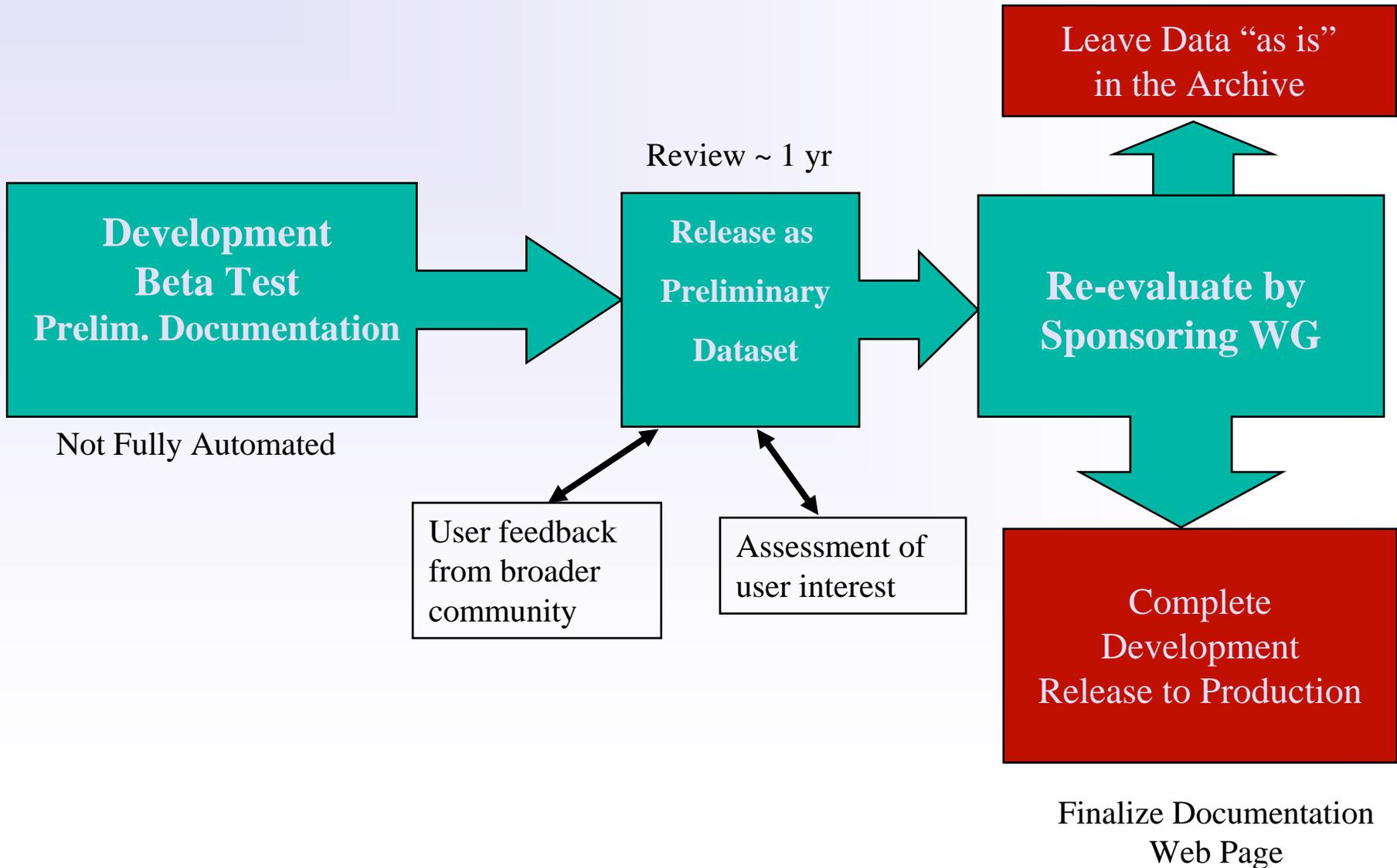


## 4. Evaluation Release

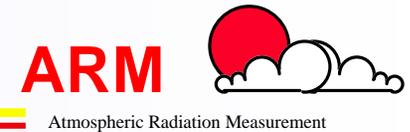
Science Team



# “Evaluation Release of VAPs”



# Benefits of Evaluation Release



- Facilitate earlier availability of VAP output to the user community
- Provide greater opportunity for community feedback/suggestions in the development process before finalization of development cycle
- Include VAP output for those cases where full automation is not desirable
- Allow the assessment of community interest and use to be included in the VAP development process
- Culminate in “standard” VAP output into Archive
- Current ER Products: Merged Sonde, BBHRP, MICROBASE

# VAPs: Current Status

## **Total VAPs: 47**

### Autonomous vs. Manual Operation

- 26 - "autonomous"
- 11 - manual operation
- 10 – both autonomous and manual aspects

### Operational Status

- 16 - in some need of repair or updating
- 3 - have been retired
- 2 - recommended for sunsetting

### QC/Web Pages/Tech. Reports

- 26 - updating to the new QC standards
- 21 - need some degree of Web page work
- 22 - do not have a technical report.

# Working Group recommendations: Prioritization of Translator Tasks

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- VAP QA/QC monitoring
- VAP production for cases where autonomous operation is either not possible or not cost-effective.
  - i.e. ARSCL, MicroBase, MergedSonde
- Updating and repairing VAPs, including QC flagging
- Updating web pages, technical reports, and documenting data format/content for VAPs currently in production