

ARM Infrastructure Meeting

Thursday, March 13



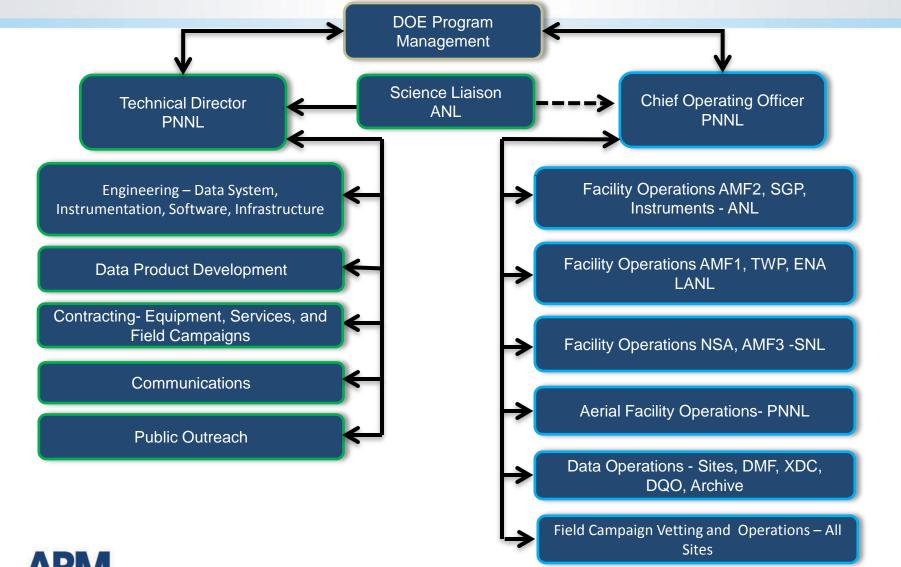


- Current activities
- New staff/staff changes
- Upcoming activities and topics for discussion
 - Facility Reconfiguration
 - Characterizing and communicating data quality
 - AMF deployment start-up plan
 - ACAPEX and AWARE
 - Engineering processes
- Closing thoughts





Management of ARM Functions



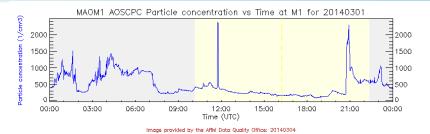


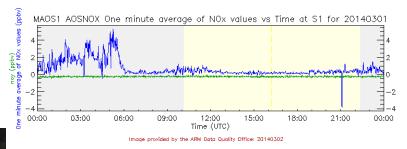


Office of Science

Current Activities

 Green Ocean – Amazon (GOAmazon): AMF1 campaign in Brazil





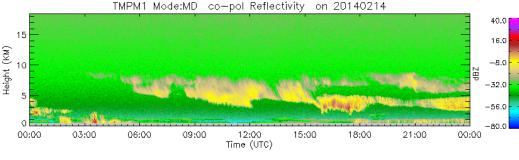
CPC particle # (above) and NOx concentration (below) for Mar 1





Current Activities

 Biogenic Aerosols – Effects on Clouds and Climate (BAECC): AMF2 campaign in Finland



Reflectivity from the KAZR for Feb 14





Current and Upcoming Activities

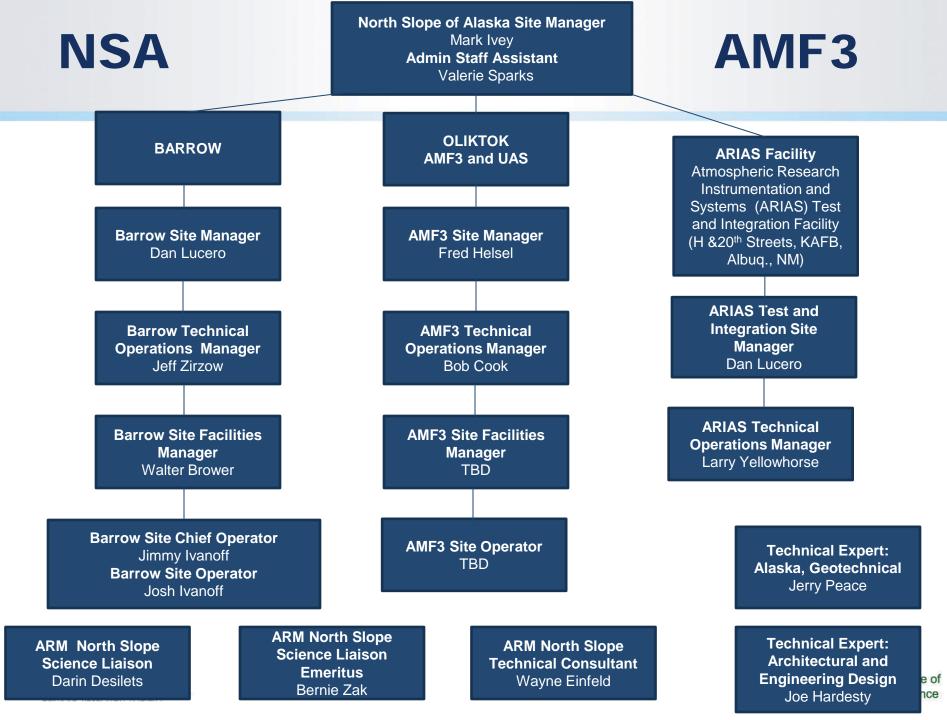
- Beginning of operations and deployment of remaining instruments to the Eastern North Atlantic and Oliktok
- Beginning of Unmanned Aerial System Operations at Oliktok
- Transition to the Next Generation ARM Facility
- Tri-annual Review (April 15-17)
- Next Generation ARM Workshop (May 19-20)



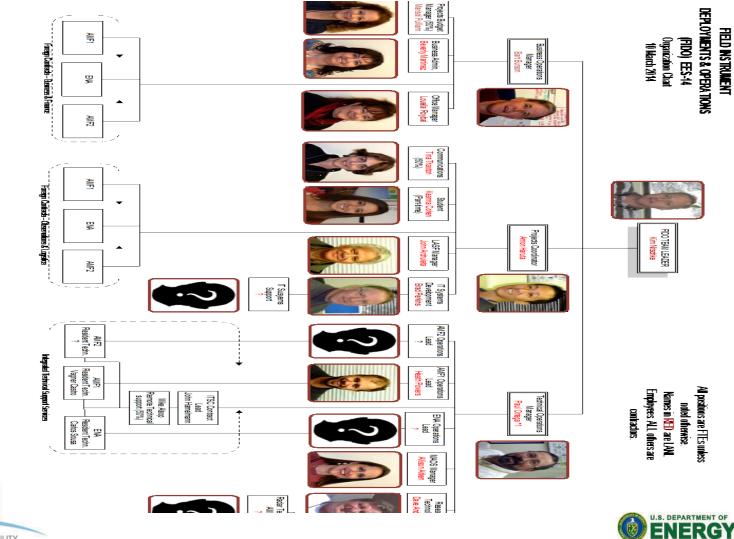








TWP, ENA, AMF1



CLIMATE RESEARCH FACILITY

ARM



Other Staff Changes

- Communications team is now: Lynne Roeder, Rolanda Jundt, Sarah Shoemaker, Jessica Church, and Kyle Wescott
- New: Brent Kolasinski at ANL
- Retired: Sig Christensen from ORNL
- Robin Perez retiring: roles being parsed out to Rick Wagoner, Sherman Beus, Randy Peppler (and staff at the DQ Office), Nicole Keck, and Alice Cialella





ARM Data Lifecycle Group (aka The Group of Six [G6])

Mission: Formed to produce the long-term vision for the ARM computing environment and overall architecture and to work with the broader ARM Data Lifecycle development team to implement this vision.

Members:

Tom Boden (ORNL) ARM Data Lifecycle Manager

- (1) Alice Cialella (BNL)
- (2) Ken Kehoe (Oklahoma University)
- (3) Matt Macduff (PNNL)
- (4) Giri Palanisamy (ORNL)
- (5) Cory Stuart (ANL)
- (6) Shaocheng Xie (LLNL)





Effects of the Reconfiguration

A key motivation for concentrating measurements at the SGP and the NSA was to reduce operating costs - freeing funds to support the remaining sites and activities around ARM.

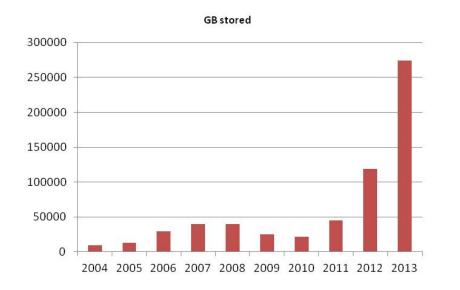
Offsetting this to some extent ...

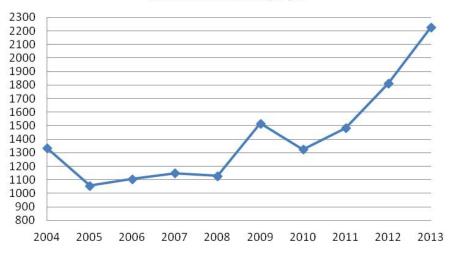
- There will be an increase in operational complexity at the two supersites
- There will be short-term impacts as the sites are reconfigured and periodic efforts to relocate measurements – similar to an AMF
- There will be data/computational challenges as models become more integrated with operations.





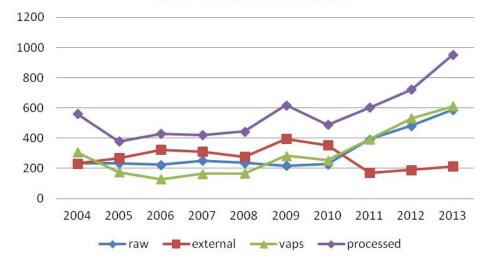
Increasing Data Volume and Complexity





Number of Data streams per year







*Includes reprocessed datastreams

Known and Reasonable Data Quality

Defining the state of data – including quality, history, and uncertainty - and communicating that state to the community is among our largest challenges

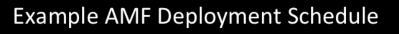
- Documentation of the baseline state including web pages, handbooks
- Characterization of uncertainties and methods for arriving at uncertainties including calibrations of instruments and test equipment
- Communication through Data Quality Problem Reports when things go wrong
- Well thought out Data Quality Reports to communicate status to users
- An efficient reprocessing process to fix correctable data
- Implementation of data versions

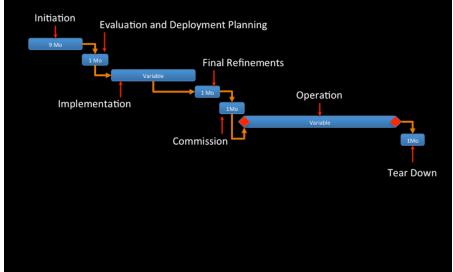




Mobile Facility Start-up With a Focus on Product Delivery - Jimmy Voyles

- This plan is drafted and out for review
- Review comments due at the end of March
- Will provide a Program Document Record and will be used as a guide
- The is a very complex process and requires:
 - Role and responsibility clarity
 - Planning and task definition
 - Tracking and communication
- This plan can be tailored for general site start-up demands









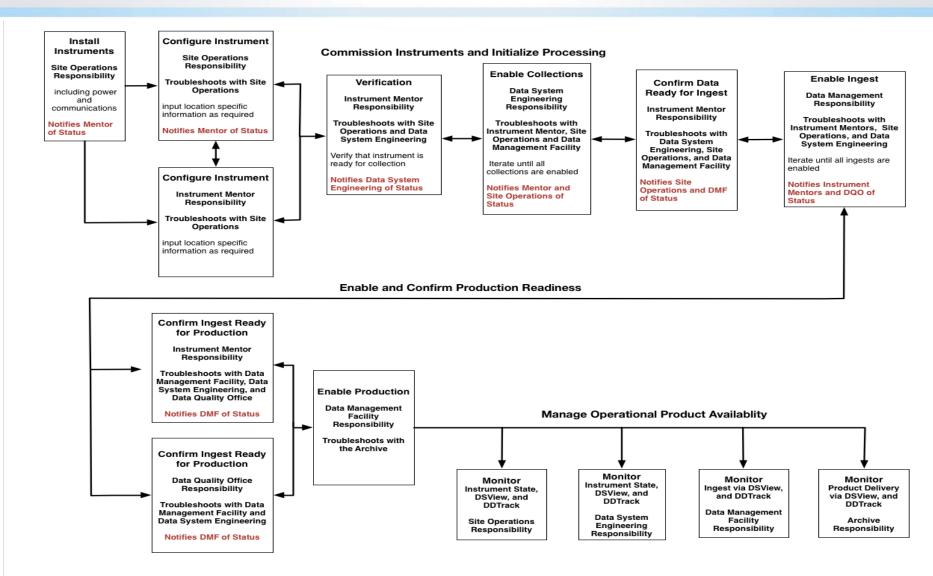
Key Phases

- Initiation and Campaign Planning
- Evaluation and Deployment Planning
- Implementation
- Final Refinements
- Commissioning
- Operations
- Roles and Responsibilities





Final Refinements Phase



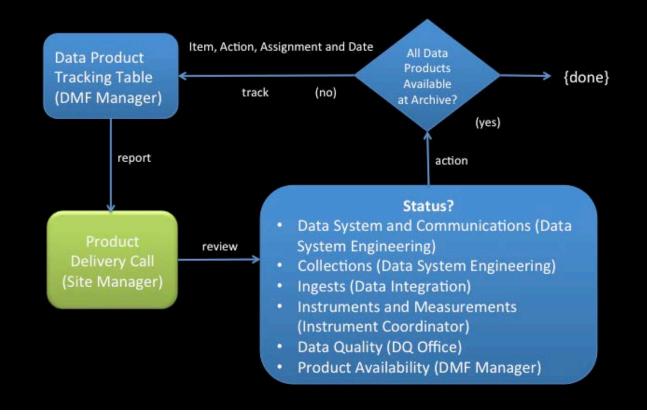
AMF Product Delivery, Final Refinements and Commissioning — Workflow

Jimmy Voyles

Commission Phase

- Final operational, processing, and QA completed for all instruments and measurements
- Completed before Operational Start Date
- Data Products are available from the Archive

Product Tracking to Archive







ACAPEX and AWARE

ACAPEX

- Integration of SACR
- Preparation period at end of BAECC
- Deployment timing
- Experiment operations



ARM West Antarctic Radiation Experiment (AWARE; McMurdo Station; FY2016)

- Preparations for extreme cold
- Pre-experiment staging
- Experiment Operations







Office of Science

Engineering Processes

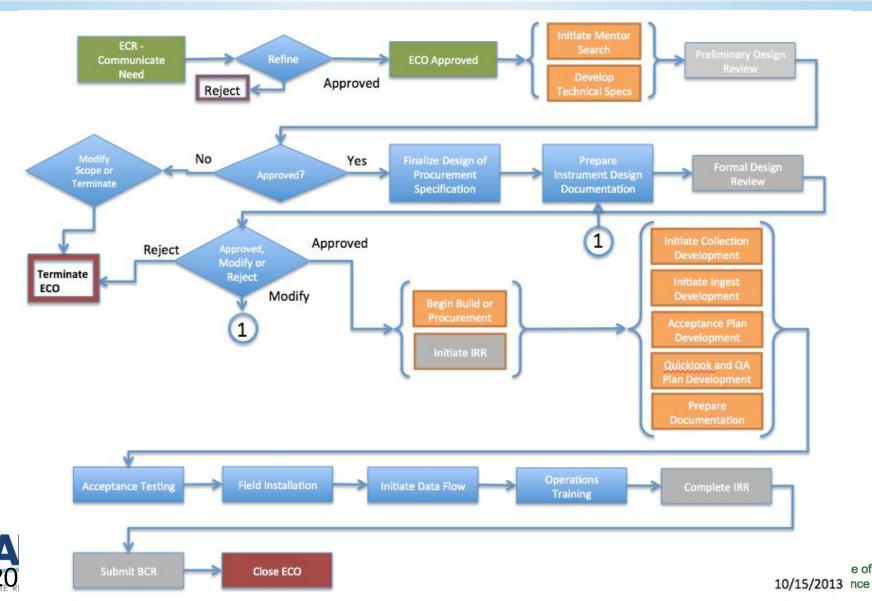
ECO-00870 – Engineering Processes (and related tasks)

- In process of overhauling engineering.arm.gov/task (engineering home page)
 - Updating and expanding documentation
- Documenting (and clarifying) key processes including roles and responsibilities and decision points
- Exploring improved tools for tracking engineering tasks





Enhancing the Impact of ARM on Model Development



Closing Thoughts

