NRAO End to End (e2e) Operations Division

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The Organization

• After a three-year period of focusing software resources on meeting the objectives of individual telescope projects, the NRAO End to End Operations Division was formalized on April 3, 2006.
• Currently consists of N. Radziwill (management) and Ed Fomalont (science)
• Key stakeholders include NM Operations, EVLA Development, ALMA Development, GBT Operations, NAASC/NA ARC
• Many staff already involved in relevant planning, design and/or prototype development; leveraging this immediately
Mission

• To **broaden access** to NRAO facilities, enabling all astronomers to focus on the science rather than the instrumental details
• To **increase science impact and throughput** via improved quality of data and efficient delivery of science products
• To help NRAO better **optimize its investments** in software, services and resources (e.g. through reuse of ideas, models, systems and information stores)

*Provide a sharp focus on the community… deliver what’s needed by users internal and external to NRAO, at the appropriate times*
What’s Changed?

• Strong executive sponsorship
• Stakeholders involved from the beginning
• Recognition that EVLA effort must be supplemented
• Committing to several smaller intermediate deliverables
• Managing tightly coupled feedback from scientists and lead users into computing and software development
• Setting realistic goals, compatible with affordable resources in development and maintenance stages, aligned with operations
• Simplifying ideas, clarifying objectives/task definitions, communicating across sites more effectively
• Answering the critical question for many computing staff at NRAO: how do I fit in with overall NRAO development?
Common Terminology

• **Classifications of work:**
  
  • **Monitor & Control** – Real-time systems that command the telescopes, instruments and data acquisition and monitor their status
  
  • **Data Post-Processing** – Systems that generate science products from the raw data (calibrated data, reference images)
  
  • **Scientific Support Systems** – Systems and processes that facilitate the users’ access to the telescopes and the science products (proposal system, observation preparation, pipelines, archives)
  
  • **e2e Operations Division** provides a concerted focus on supporting the users of our facilities and their access to data:
    
    • Research based on proposing new observations
    
    • Research based on archived data
Tactical Plan Q2 2006

• **Make incremental progress in technical areas while developing strategic plan:**
  – VLA/VLBA Pipeline Vitalization & Data Center Gap Analysis; can we start populating archive with images now?
  – Proposal Tool/Data Model Summit
  – Shared Source Catalog Repository
  – Achieve readiness for extended user testing with CASA
  – Science Capabilities Blueprint

• **Develop strategic plan:**
  – Organizational plan (org chart, staffing, roles, responsibilities)
  – Normalize development plans for all sites/projects
  – Develop unified terminology, management metrics
  – Survey employees’ collaboration habits
2006 Strategic Goals

• Develop and manage to Strategic Plan. Elements will include:
  – Complete description of the new division, its roles and responsibilities with respect to EVLA computing, and
  – Detailed project plan for supplementing EVLA computing to ensure that immediate needs (Milestones A and B) are being met – while not losing sight of the bigger picture (Milestones D and E: Full Science Observing)
• Ensure timely completion of key functionality and release to users of CASA data post-processing software
• Complete Data Integration Plan (roadmap for information repositories needed for e2e)
• Define Common Operational Model (VLBA, EVLA, ALMA, GBT)
• External annual reviews established
NRAO e2e Operations

under development

Stakeholders
NM Ops (Ulvestad)
GB Ops (Prestage)
NAASC (Carilli)
NA ARC (Hibbard)
EVLA (McKinnon)
ALMA (Russell)

AD, e2e Operations Division
(Radziwill)

Systems Development
(Radziwill)
Principal Scientist
(Fomalont)

Science Advisory
DSAA (Frail)
Advanced Algorithms (Myers)

• Solid lines indicate exclusive reporting relationships
• Dotted lines indicate shared reporting relationships with line managers in operations groups
• Day to day management from line managers; strategic steering from NRAO e2e Operations
• Funding from NRAO e2e Operations in yellow, from EVLA/NM Ops in Blue, from ALMA in peach, from GBT in Green