Activities for the FY2014 Program Operating Plan for NM Operations

Claire Chandler

06/06/13

POP Structure

- Useful to think of our activities for FY14 in terms of the POP structure (items that require local input in *green italics*):
  1. Overview
  2. Community-driven Science Goals
  3. *Observatory Science Operations*
  4. *Observatory Telescope Operations*
     - ALMA
     - *VLA*
     - *VLBA*
     - GBT
  5. Observatory Development Programs
     - CDL Development
     - *ALMA Development*
     - GBT Development

POP Structure

- Continued:
  6. Observatory-Wide Services
     - CDL
     - *DMSD*
     - PMD
     - EPO
     - *Administration*
     - HR
     - Diversity
     - *CIS*
     - Director's Office
  - Appendices include:
     - *FY13 Annual Summary*
     - *Work for Others*

POP sections requiring input from NM

3. Observatory Science Operations

- Science Support and Research (T. Bastian)
  - Telescope Time Allocation
  - Science Users Support
  - Science and Academic Affairs
- Content development will be coordinated by Tim Bastian and Tony Remijan
  - Will likely require input from
    - VLA and VLBA schedulers (Wrobel/Claussen)
    - Observer Support Group (van Moorsel)
    - SAA Head (Carilli)

4.2. Observatory Telescope Operations: VLA

- Overview (Frail)
- Operations
  - Telescope Science Support (Shepherd)
    - Observing Programs (general, SRO, RSRO)
    - Receiver, antenna, and array performance (description of on-gong science operations to maintain the performance of the array – see later)
    - Scheduling (planned observing fraction, fraction of time going to large projects, description of DDT)
  - Array Operations (P. Perley)
    - Description of operations model, including array reconfiguration dates
    - Move of night-time ops to Socorro (pending test results)
    - RFI mitigation activities
    - Other operations activities

4.2. Observatory Telescope Operations: VLA

- Upgrade Projects (Durand)
  - ACUs (describe number of antennas to be outfitted in FY14)
  - Low-band receiver and Ellingson feed commissioning (pending test results)
  - Solar retrofit
  - L and C-band thermal gap retrofits
- Enhancement Projects (Shepherd)
  - Capability enhancements for semesters 2014A/2014B/2015A (see later)
- Infrastructure Maintenance and Renewal (P. Perley)
  - High level description of infrastructure supported for the VLA
  - Maintenance activities
- Major milestones for all of the above (Shepherd/Perley/Durand)
- NB: VLA System Software to support above activities go under DMSD

4.3. Observatory Telescope Operations: VLBA

- Overview (Frail)
- Operations
  - Telescope Science Support (Shepherd)
    - Observing Programs (general, SRO, RSRO)
    - Receiver, antenna, and array performance (description of on-gong science operations to maintain the performance of the array – see later)
    - Scheduling (planned observing fraction, description of DDT, impact of UT1−UTC on astronomical observing, coordination with other observatories for globals, HSA, GMVA, fraction of time going to large projects, etc.)
  - Array Operations (P. Perley)
    - Description of operations model
    - Focus on stabilizing DDC and HSA operation following completion of upgrade project
    - RFI mitigation activities
    - Other operations activities

4.3. Observatory Telescope Operations: VLBA

- Upgrade Projects (Durand)
  - Retirement of VMEs as step towards using EVLA executor
- Enhancement Projects (Shepherd)
  - Capability enhancements for semesters 2014A/2014B/2015A (see later)
- Infrastructure Maintenance and Renewal (P. Perley)
  - High level description of infrastructure supported for the VLBA
  - Maintenance activities: Tiger Team visits, maser maintenance
- Major milestones for all of the above (Shepherd/Perley/Durand)
- NB: VLBA System Software to support above activities go under DMSD

5. Observatory Development Programs

- No development projects for VLA or VLBA during FY14
  - By end FY13 we will have completed 3 development projects:
    - Low-band feeds: status pending final tests
    - ACUs: start outfitting a couple of antennas in FY14
    - VLBA synthesizer: implementation not approved at Budget Summit

- POP input for approved ALMA development projects and studies will be coordinated by Bill Randolph

6. Observatory-wide Services

- DMSD (Glendenning)
  - Software Development
  - Scientific information Services
  - VLA System Software
  - VLBA System Software
  - GBT System Software
  - DMS Major Milestones (should map to milestones in OSO and OTO sections, where applicable)
- Administration (Geiger)
  - Business Services
    - Include description of NM and GB leases and facility costs, (as well as Edgemont Road and CDL), and a breakdown of facilities costs and infrastructure maintenance/ renewal plans that are not associated directly with the telescopes (these are already covered in OTO section)
- Computing & Information Services (Halstead)
  - Include all NM, VLA, and VLBA CIS

Appendices

- Appendix A: Preliminary financial plan & WBS
- Appendix B: Major Milestones Summary
- Appendix C: FY 2014 Infrastructure Maintenance & Renewal Summary
- *Appendix D: FY 2013 Annual Progress Summary (Chandler)*
  - *Status of all FY13 milestones*
- Appendix E: Risk Register
- *Appendix F: Work for Others (Perley/Durand)*
  - *Status of all work for others*
- Appendix G: Acronyms

POP Development Timeframe

Action	Who	Due date
FY14 POP template and NM Ops sections of FY13 POP distributed	Claire & Lori	June 10
POP sections submitted to Lori	Group leads and division heads	July 8
NM Ops POP compiled and distributed for local review	Claire	July 15
Local comments/feedback due	Claire	July 17
Final version of NM Ops POP contribution submitted to CV	Dale	July 19

Enhancement programs: timeframes

- Capability enhancements for semesters 2014A/2014B/2015A
  - 2014A: already defined (upcoming call for proposals in July)
  - 2014B, SRO (Feb 1 proposal deadline, capability needs to be demonstrated operational by Oct 2013)
  - 2014B, RSRO (does not need to be demonstrated ahead of time, but needs to be prioritized against other activities)
  - 2015A, SRO (Aug 1 proposal deadline, capability needs to be demonstrated operational by Apr 2014)
  - 2015A, RSRO (does not need to be demonstrated ahead of time, but needs to be prioritized against other activities)

Enhancement programs: VLA

Capability	2014A	2014B	2015A
Mixed 3/8-bit samplers	SR	General	General
P-band Stokes I	SR	SR	General
1s > T_{int} >= 50ms	SR	SR	General
Recirculation x 4	RSR	SR	General
Y27 “PFB/DDC-8”	RSR	SR	General
OTF	RSR	RSR	SR
Very fast dumps	RSR	RSR	SR
Y1	RSR	RSR	SR
Pulsar de-dispersion	RSR	RSR	RSR
Real-time transient detection	RSR	RSR	RSR
74MHz	RSR	RSR	RSR
P-band sp. line/polarimetry	RSR	RSR	RSR
Pulsar phase bins	RSR	RSR	RSR
32 sub-bands per baseband with variable T_{int} per spw	N/A	N/A	RSR

VLA: Science Support/Ops Activities

- Support Calls for Proposals: technical reviews, documentation
- Hardware, software, and operational documentation
- Flux calibrator models, flux density run
- Polarization stability and service calibration tests
- Sensitivity, gain curves, holography, baselines, collimation
- Reference pointing with multiple spws, ACU commissioning
- Low-band receiver commissioning
- Low-band feed commissioning (Erickson/Ellingson)
- New API evaluation
- Implement tipping scans, improve switched power calibration
- High frequency scheduling improvements
- Pipeline heuristic development, testing, pipeline QA
- Stabilize Y27/VLBI operations
- System health and data QA
- Software testing

Enhancement programs: VLBA

- Capability enhancements for semesters 2014A/2014B/2015A

Capability	2014A	2014B	2015A
Y27 “PFB/DDC-8”	RSR	SR	General
Ultra-rapid response	RSR	RSR	RSR
Narrow BW, quasi-real-time correlation	RSR	RSR	RSR

- Other
  - Develop plan for “DDC” spectroscopic mode for HSA (depends on effort from, and priorities of, other observatories)

VLBA: Science Support/Ops Activities

- Support Calls for Proposals: technical reviews, documentation
- Hardware, software, and operational documentation
- Dual RDBE testing
- RDBE calibration
- Decommissioning of legacy VLBA equipment
- Sensitivity, pointing, focus, clock maintenance
- RFI characterization and mitigation
- Stabilize Y27/VLBI and DDC operations
- GBT/VLBI operations
- System health and data QA
- Software testing