Project Overview

Peter Napier, EVLA Project Manager

Status

2003 Committee Response

Status

Activities since last meeting

- **EVLA Test Antenna (#13)**
  - Prototype system. First light and fringes at X-band and L-band
  - Continuing addition of capabilities (eg time synchronization, fringe rotation)
  - Debugging and testing slower than expected
    - Robustness of prototypes, complexity of equipment, reduced monitor data, AOC-VLA separation.

Status (cont)

- **Second EVLA Antenna (#14)**
  - Second generation prototypes. First EVLA-EVLA fringes.
  - Came to life much more easily than 13
  - “Production-like” modules early 2005
- **Third EVLA Antenna (#16)**
  - Undergoing EVLA structural modifications
  - First “production” modules

Status (cont)

- **Lab test system**
  - Mockup of antenna electronics system established in AOC lab.
- **Production orders**
  - Lifetime supplies of adequately tested components being ordered to prevent obsolescence problem and reduce cost (eg DTS chips, cryo-refrigerators, feed support structures, antenna HVAC, synthesizer YIG oscillators).

Status (cont)

- **Correlator**
  - Chip contract in final process
  - Prototype board construction beginning
- **Software**
  - Monitor and Control (M/C): keeping up with antenna test needs, working on transition software.
  - e2e: EVLA overall software design completed
  - AIPS++: passed ALMA acceptance test, EVLA specific tasks begun.

Status (cont)

- **Design Reviews Completed**
  - Overall software design
  - M/C hardware and IF/LO/FO CDRs
  - Correlator PDR, Feeds, FE and software CDRs planned

2003 Committee Response

- Last meeting 30 Sept., 2003. Project Response 4 Nov., 2003.
- Management Issues
  - **Schedule delay**. Recovery plan in place (see schedule presentation)
- Hardware Issues
  - **Location of FE hybrids**. Detailed study concluded no change.
  - **Calibration of solar data**. Calibration procedure devised.
  - **Dual LO phase stability test**. Not yet achieved. Effort had to be used for synthesizer improvements, fringe rotation, temperature chamber phase stability tests.

2003 Committee Response (cont)

  - **Obsolete electronic components**. So far sufficient funds available to buy lifetime supplies of critical components.

- Correlator
  - **Chip schedule contingency**. Study contracts with two vendors completed, detailed chip CDR planned (Jan 2005).
  - **Correlator software definition and management**. Software specification documents in place, some NRAO programmers under HIA direction.
  - **Simultaneous observations with EVLA, NMA and VLBA.** Funds in Phase II budget for additional programming effort

2003 Committee Response (cont)

- Correlator
  - **Pulsar Observing**. Supported by WIDAR correlator and correlator backend design.
- Software
  - **NRAO/EVLA computing management structure.** The structure has worked – all EVLA software under single lead. Major issue now is not management but resource availability. NRAO Director intends to appoint NRAO-wide Software Leader (Ulvestad talk).
  - **VLA and VLBA observers should use AIPS++.** Not in current short-term plan, although VLA data is used for testing.
  - **An algorithm development group is needed.** A group is now functioning. (See Bhatnagar talk).

2003 Committee Response (cont)

- Software
  - **Need for overall EVLA Software System Design.** Completed, (see Van Moorsel talk),
  - **AIPS++ performance, robustness and interface.** Significant improvements and plans. (see Myers/McMullin talks).
  - **Need for User and Scientist involvement in testing**. Good involvement in AIPS++ testing. Concern over resource availablity for EVLA software commissioning (see Owen talk).
- RFI
  - **Design for RFI excision**. Significant module testing for self-generated RFI, no obvious problems on test antenna. Headroom specification revisited – OK. Hooks for high time resolution data from samplers and total power detectors in place to allow auto-flagging.

2003 Committee Response (cont)

- RFI
  - **Need for Algorithm Development**. New AIPS autoflagging algorithm, new excision algorithm (EVLA Memo 86) developed.
- Phase II Issues.
  - **Submit proposal ASAP**. Proposal submitted April 2004. NSF Review underway. (see Perley talk)).
  - **Include low frequencies if possible**. Low frequencies removed from this proposal because technical concept not sufficiently developed.