Project Overview
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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 (e.g., 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 (e.g., 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


• 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.

P.Napier EVLA Advisory Comm, 14 Dec 2004
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 availability 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.