

Project Overview

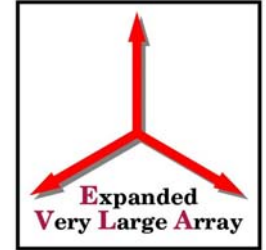
Peter Napier, EVLA Project Manager

Status

2003 Committee Response



Status



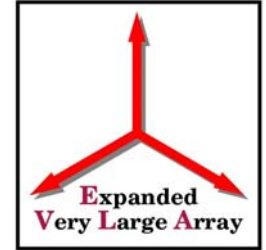
Activities since last meeting

- **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.



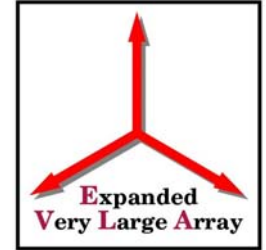
Status (cont)



- **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



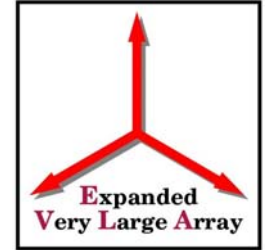
Status (cont)



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- **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).



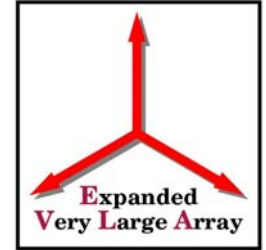
Status (cont)



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- **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)

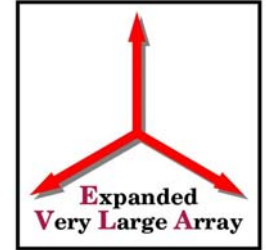


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- **Design Reviews Completed**
 - Overall software design
 - M/C hardware and IF/LO/FO CDRs

 - Correlator PDR, Feeds, FE and software CDRs planned



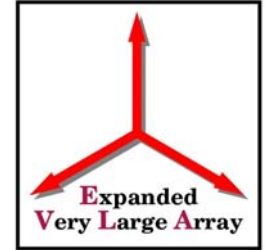
2003 Committee Response



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- 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.



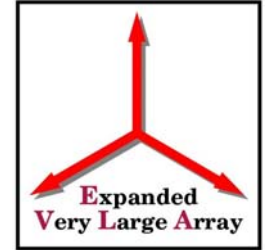
2003 Committee Response (cont)



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- **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



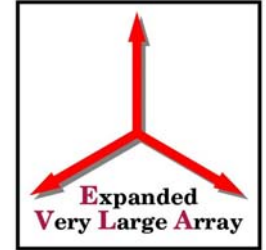
2003 Committee Response (cont)



- 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).



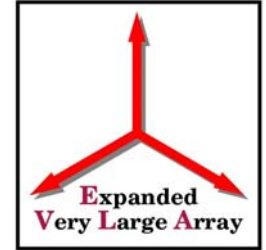
2003 Committee Response (cont)



- 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.