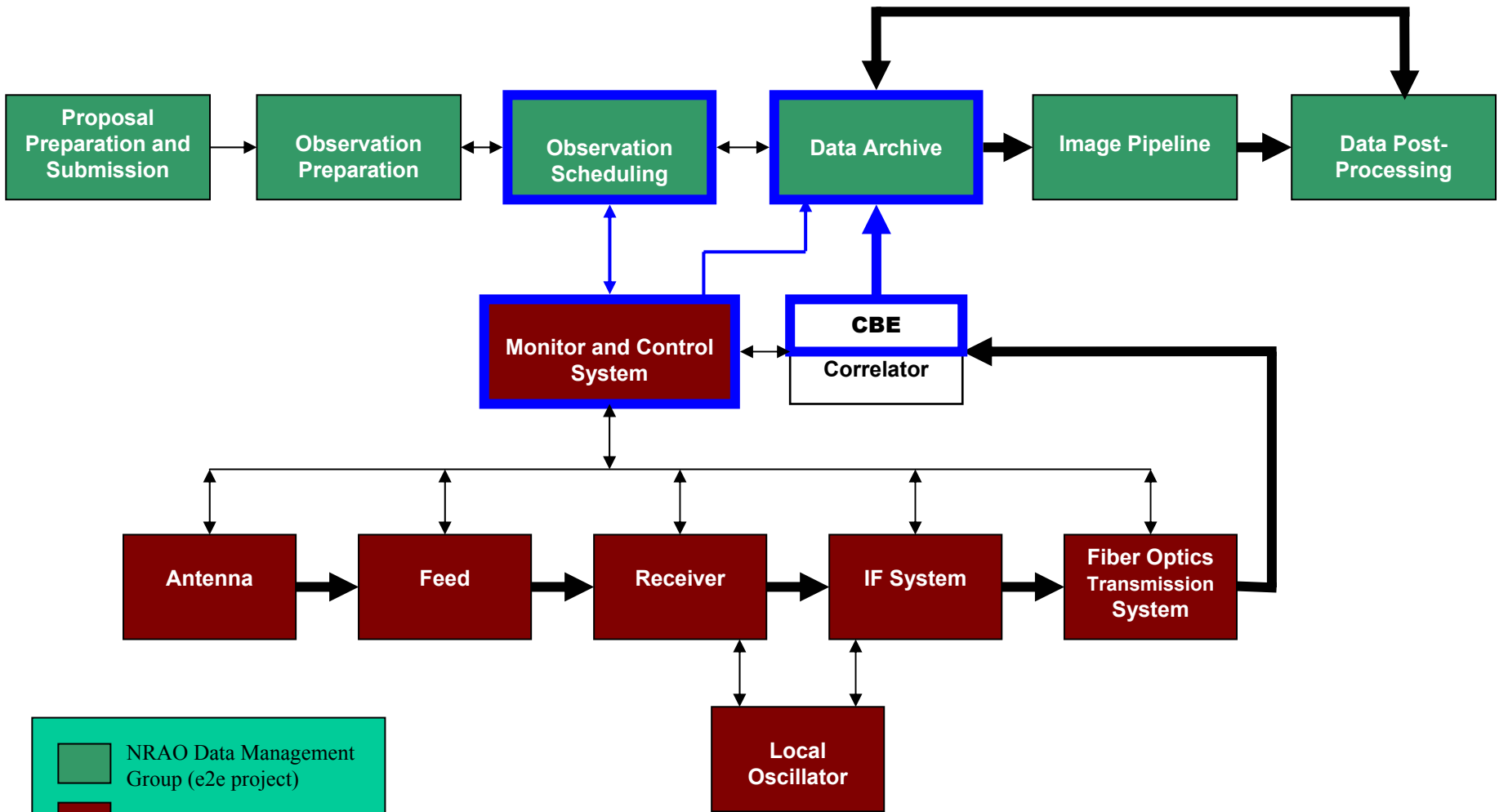


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# EVLA end-to-end (e2e)

Gustaaf van Moorsel  
September 9, 2003

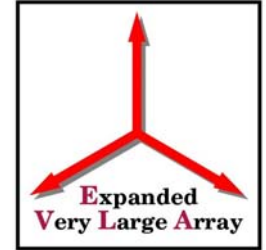
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Principal EVLA Subsystems



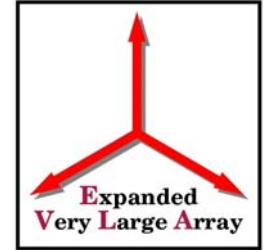
# Introduction



- e2e effort so far has been either
  - Instrument specific (e.g. VLA scheduling)
  - Multi-instrument (e.g. proposal handling)
- EVLA related effort needed EVLA specific requirements
  - Written in 2002 and 2003
  - 4 ready/advanced draft
  - 1 still in progress (real-time)



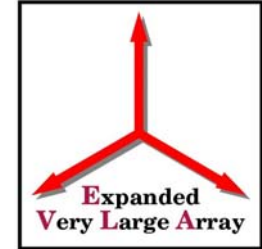
# EVLA Requirements



- Available or in progress:
  - Operations
  - Engineering
  - Scientific
  - Real-time
    - In preparation
    - Old (2001) version exists
  - Post-processing



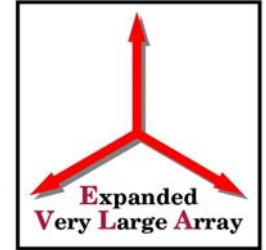
# EVLA Requirements (2)



- A sixth document, the Systems Requirements Specification (SRS) for the EVLA Software System is in preparation
- The SRS for the EVLA Software will:
  - Summarize the principal requirements contained in the other 5 requirements documents
  - Serve as a basis for an overall functional specification and design
  - Be placed under revision control. All changes will require the approval of the EVLA Change Control Board



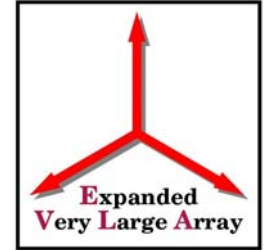
# Project management



- Reconcile requirement documents - done
  - E.g. M&C needs archive fast
- Estimate workload, assign resources – in progress
  - OK for next 12 months
- Decide about possible de-scoping, using priorities in requirement documents
- Define intermediate targets
- Keep abreast of parallel efforts in ALMA



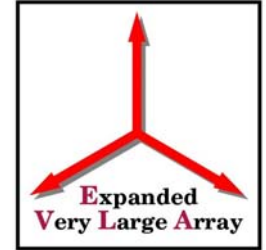
# Proposal Submission/ Management



- 
- Scientific Requirements: Q2 2007
  - Prototype ready for testing (VLA, GBT?)
  - EVLA Requirements not taken into account; some EVLA already there
  - Extra work for EVLA moderate
  - Currently: lower priority



# Observation Preparation

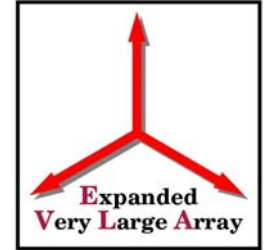


- 
- Scientific Requirements: Q2 2007
  - First needed: observing scripts – Q4 2003
    - Needed for test antenna
    - Written in Jython
  - GUI tool: lower priority





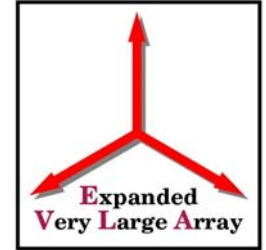
# Observation Scheduling



- Scientific Requirements: 2005 Q4
- Current status:
  - GUI has been developed for VLA
    - expandable to EVLA with some modifications
  - Simple VLA Dynamic Scheduling
    - Expandable to meet EVLA requirements
    - Look at ALMA dynamic scheduling



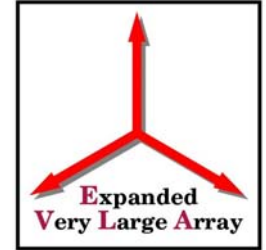
# Data Archive



- Requirements time scales:
  - M&C 2003 Q2 *completed*
  - Engineering 2004 Q2
  - Science 2007 Q2
- Current status
  - VLA, VLBA, GBT on disk
  - Catalog search and data retrieval tool



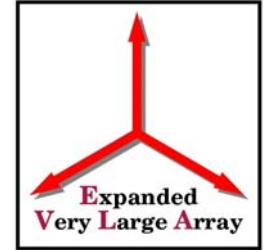
# Archive – EVLA specific additions



- 
- Support multiple data streams
  - Support TBD data format
  - User interface – mostly there
  - M&C data – done
  - Logging
  - Other items – proposal, observe file, etc



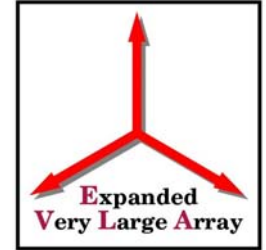
# Image Pipeline



- Scientific Requirements time scales:
  - Real-time Calibrator Analysis: 2007 Q2
  - Quick Look Pipeline: 2010 Q2
- Initially: emphasis on ALMA



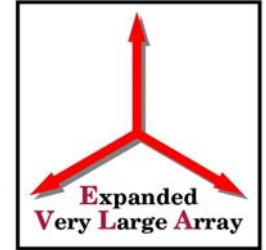
# Data Post-processing



- AIPS++, next 10 months
  - Development focused on ALMA acceptance
  - Acceptance criteria parallel with EVLA
- Thereafter: EVLA specific software, e.g.
  - Wide Field Imaging
  - Wide Band Imaging
  - RFI Excision



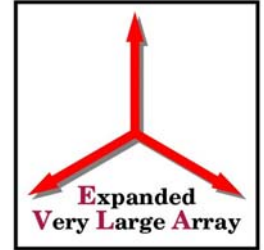
# Other Issues



- 
- Wrapper for CALC program – Q4 2003
    - Provides interferometer model to correlator
    - Needed for pointing test antenna
  - Real-time Calibrator Analysis Tool (RTCAT)  
Q3/4 2004
    - Required for certain observing modes
      - Reference pointing
      - VLBI auto-phasing
      - Determination of focus parameters
      - Data quality displays



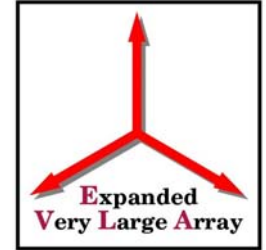
## Other Issues (2)



- Visibility Data may be needed prior to 2007
  - Capture output prototype correlator Q1 2005
  - Output first functional fraction Q4 2006
- Quick-look Pipeline Tool
  - Direct or through archive (too slow)?
- Astronomer's *what's up* Display – Q2 2007



# Questions to Advisory Committee



- 
- How should we proceed if our resources should turn out to be insufficient?
  - What are criteria to adopt software components developed for e.g. ALMA?