Long Term Transition Plan

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2002 May 15

Assumptions

- We will never want to correlate un - upgraded antennas with the new correlator
- No one, except perhaps the project scientist, sees any value in truly concurrent operations, *viz*, splitting the IF from the enhanced antennas so that the same signals can be processed in the old and new correlators at the same time

Summer 2002
(initial engineering support)

- Basic support for engineering development is needed
- As mentioned elsewhere, this date is going to be tight due to the availability of the MIB chip and the RTOS for the chip

Early 2003
(tests with enhanced antenna)

- The MIB board will be needed in early 2003 for the engineering groups to develop interfaces to the modules
- Outfitting of the first antenna is scheduled for April 2003
- Adequate control will be needed if we are to move the antenna
- The achievement of this is tight

Correlator System Controller

- This is needed as soon as possible
- The tape (or equivalent) output will probably be written directly from the CSC
  - (Replacement for 6250 bpi drives)
- The new CSC is a new device, and has been designed so that both old and new systems will be able to communicate with it easily

Tape Data Format

- If the data format is unchanged, the CSC will have to write FP data to the tape in ModComp format for the AIPS and AIPS++ fillers to digest
- If the format is changed, then time will have to be given to allow the on-line and downstream data tasks to change – any time until 2009

Late 2003
(observing with two enhanced antennas)

- When the second enhanced antenna is available at the end of 2003, we will want to have a single baseline correlated
- To achieve this date is extremely challenging
  - Should we adopt another telescope's control system?
  - Decisions on languages and tools needed in 2002

Early 2004
(observing with enhanced antennas)

- With more antennas, a subarray of enhanced antennas will be available
- The EVLA M&C system will have to have sufficient functionality to support these when needed
  - EVLA debugging
  - Or as a science component with the VLA

True Concurrent Operation

- New antennas controlled by new M&C
- At least two possible paths to achieve this
- Both options require a significant amount of throw-away coding effort
  - Need to make good estimates

Concerns

- We need to be able to retire the (recently upgraded) ModComps as soon as possible
- Minimize effort on throw-away code
- Operation with "main" array as reliable as possible
  - Transition from a majority of un-upgraded antennas to enhanced ones in 2006 (?)
- Operate with the new system as soon as practical
  - Maximize debugging availability
- Easy to use in parallel by the Operators

2005

- Prototype correlator
- Only a few (4?) antennas will be supported
- Old correlator still the workhorse
- Begin passing new correlator data through the backend computer systems to the pipeline and archive

2007

- New correlator shipped to the VLA site for assembly and testing
  - Installation and final debugging of correlator backend computers begins
  - Prototype pipeline and archive hardware
- Shared risk science observations begin
- Old correlator still the workhorse

2009

- Full deployment
- Acquisition of “final” pipeline processors and archive systems
- Old correlator decommissioned