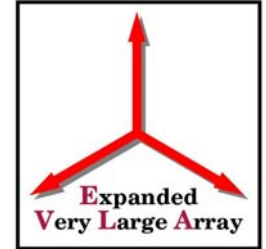




EVLA Monitor & Control



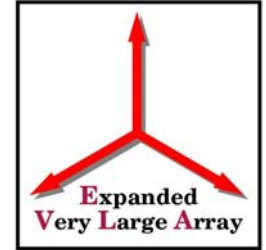
Topics



-
- The Overall Design
 - Module Interface Board Hardware & Software
 - The M&C Transition Plan
 - M&C Subsystem Design



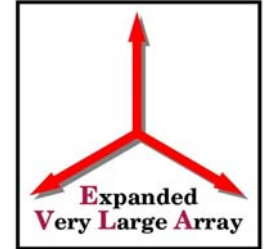
Overall Design



- In June 2004 a high-level design for all EVLA software was completed
- This design is presented in a document entitled “EVLA High Level Software Design”
- It is document # 33 on the EVLA Computing Working Documents web page:
<http://www.aoc.nrao.edu/evla/techdocs/computer/workdocs/index.shtm>



Overall Design



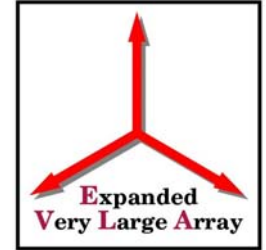
Transparency of Data Flow Diagram



EVLA Data Flow, w
Post Processing



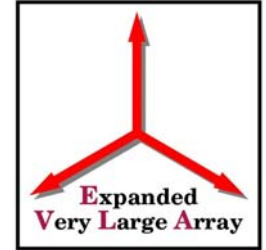
Module Interface Board Hardware



- The Module Interface Board (MIB) is the means by which EVLA antenna subsystems will be monitored and controlled.
- The hardware design has been finalized and is ready for quantity production.
- An M&C Hardware and MIB Software CDR was held on 10/20/2004
- No significant impediments to quantity production of the MIB were found
- The report of the review panel for the CDR can be found on the CDR web page:
<http://www.aoc.nrao.edu/evla/admin/reviews/MIB/MIB.html>



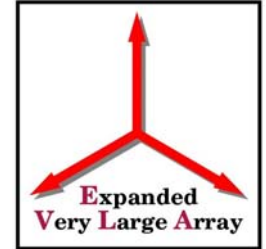
Module Interface Board Software



- Uniform, self-describing interface to all MIB-connected devices.
- Simple [set, get] <device name>.<MP or CP>.<attribute> syntax
- Consists of a generic framework common to all MIBs plus module specific software
- Framework services include a Service Port, Data Port, Alarms & Alerts, Error Messages, Logging Messages
- Documents describing the Framework SW, Service Port and Data Port are available on the Computing Working Documents web page:
<http://www.aoc.nrao.edu/evla/techdocs/computer/workdocs/index.shtml>



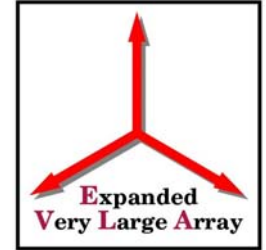
M&C Transition Plan



- The M&C Transition Plan referred to here is a plan for software development that accommodates the transition from the VLA to a hybrid VLA-EVLA array, and then to the EVLA.
- The document is entitled “VLA/EVLA Transition Observing System Development and Re-engineering Plan”, dated September 04, 2004, written by Tom Morgan of the ECD.
- Available on the Computing Working Documents web page: <http://www.aoc.nrao.edu/evla/techdocs/computer/workdocs/index.shtml>, as document # 37



M&C Transition Plan



- The M&C Transition Plan consists of 7 phases
- Phases I - III lead to the elimination of the Modcomp computers
- Phase IV develops support for on-the-sky testing of the WIDAR correlator prototype
- Phase V develops support for on-the-sky-testing of the production version of the WIDAR correlator
- At the end of Phase VI, shared risk observing by external users will be supported
- Phase VII completes EVLA support for regular science observing using EVLA antennas and the WIDAR correlator



M&C Transition Plan



Phase I Primary Objectives (Jan 31, 2005)

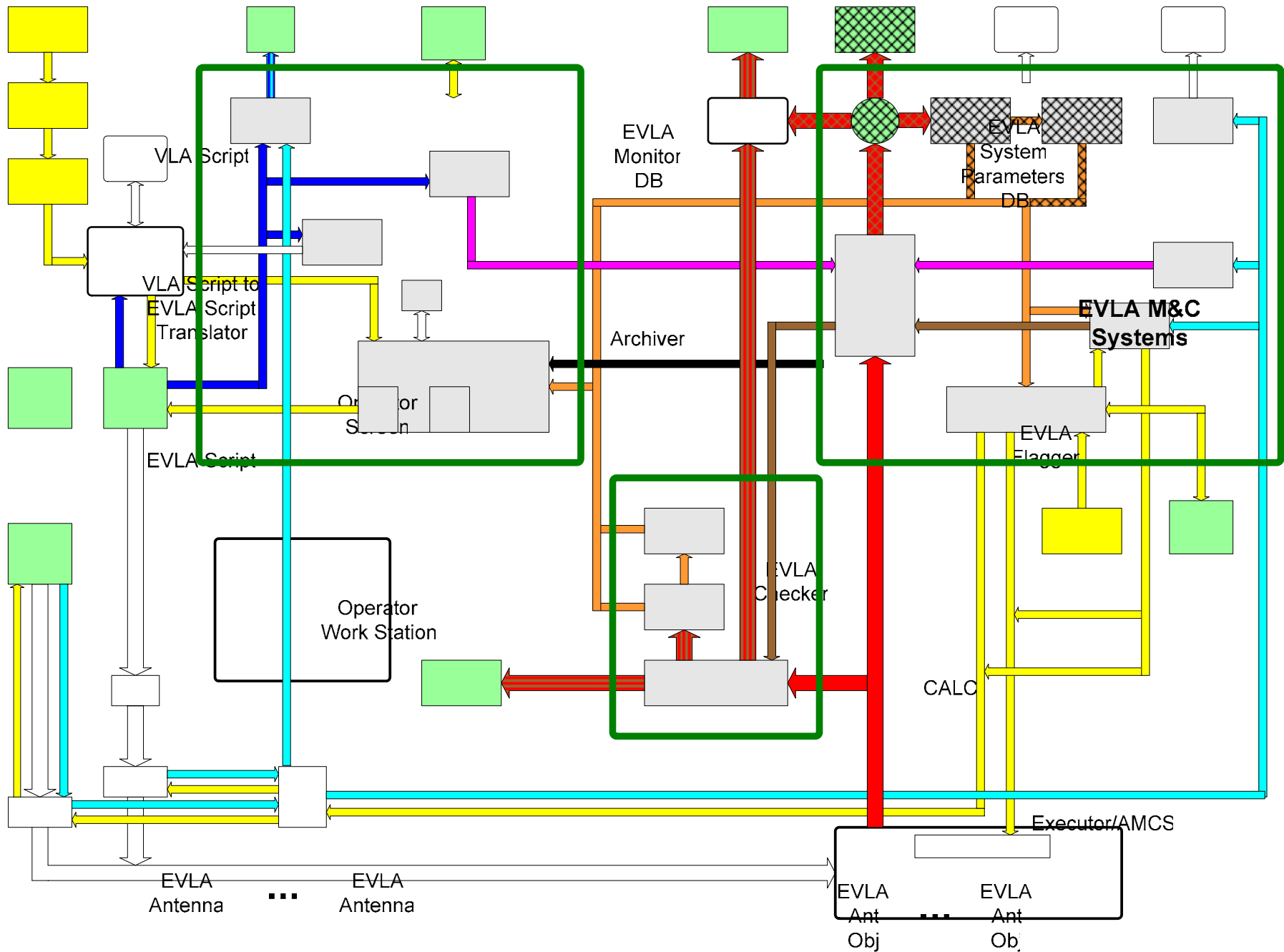
- Basic software in place for use of one or more EVLA antennas in the VLA for observing

Phase II Primary Objectives (Q2 2005)

- New VLA correlator controller
- Begin work on control of VLA antennas by EVLA
- Begin migration of Antsol, Pointing Offsets & Archiving

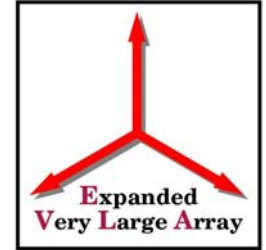
Phase III Primary Objectives (Q4 2005)

- Transfer all remaining functionality to EVLA systems
- Retire the Modcomps and the Array Process





M & C Subsystem Design



- Synched with the phases of the M&C Transition Plan
- M&C Transition Plan software will serve as testbeds for subsystem design
- The mature form of the EVLA software must grow from the M&C Transition Plan software
 - To enable continuous operation of the array
 - Reasonable software development scenarios
 - Schedules
 - Manpower



M &C Subsystem Design

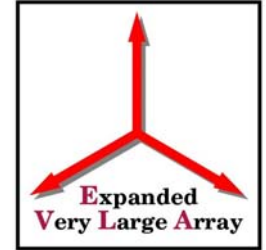


At end of Phase I of M&C Transition Plan (1/31/2005)

- Designs for production versions of Observation Executor, Antenna Objects, CALC
- Design for User Interfaces to non-mib processes
- A more detailed description of remaining subsystems and their technical requirements
- A software development plan that includes task breakdowns, task interdependencies, time allocations, and resource allocations.



M & C Subsystem Design



During Phase II of M&C Transition Plan (Q2, 2005)

- Refine subsystem designs developed during Phase I
- Specify designs for some of the remaining subsystems
 - Antsol as a Telcal precursor
 - Control of VLA correlator
 - VLA Data Capture & Format (DCAF) as EVLA DCAF prototype
 - Archiving (VLA format) by EVLA system
- Revise and update the SW development plan generated at the end of Phase I of the M&C Transition Plan