Software – M&C

Bryan Butler
(for Bill Sahr)

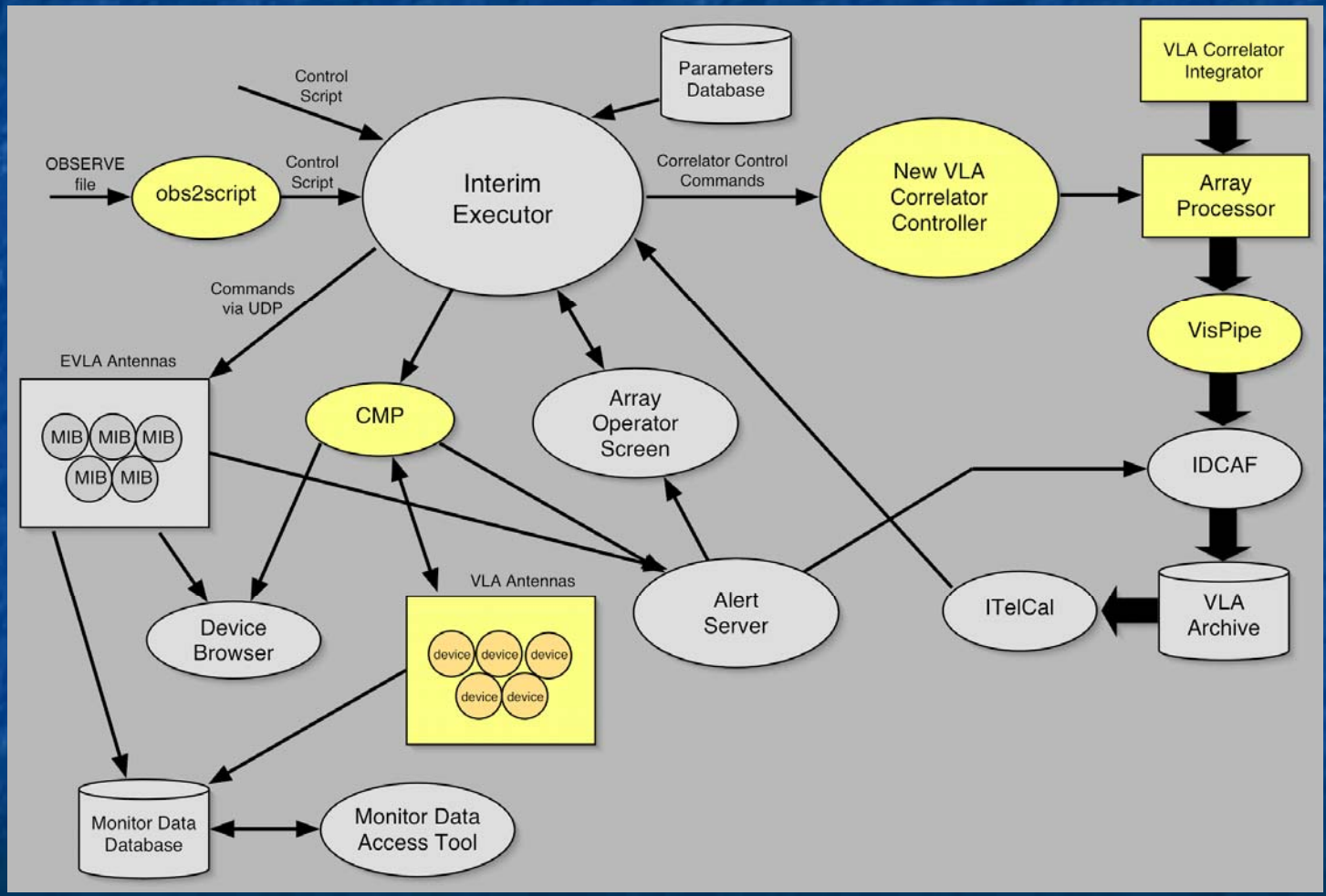
Major Subsystems

- Executor (with parameters database)
- Antenna M&C
- Correlator M&C (includes visibility data storage)
- Alerts and logging
- Monitor data storage and retrieval
- Metadata Capture and Format
- Telescope Calibration
- Monitoring GUIs

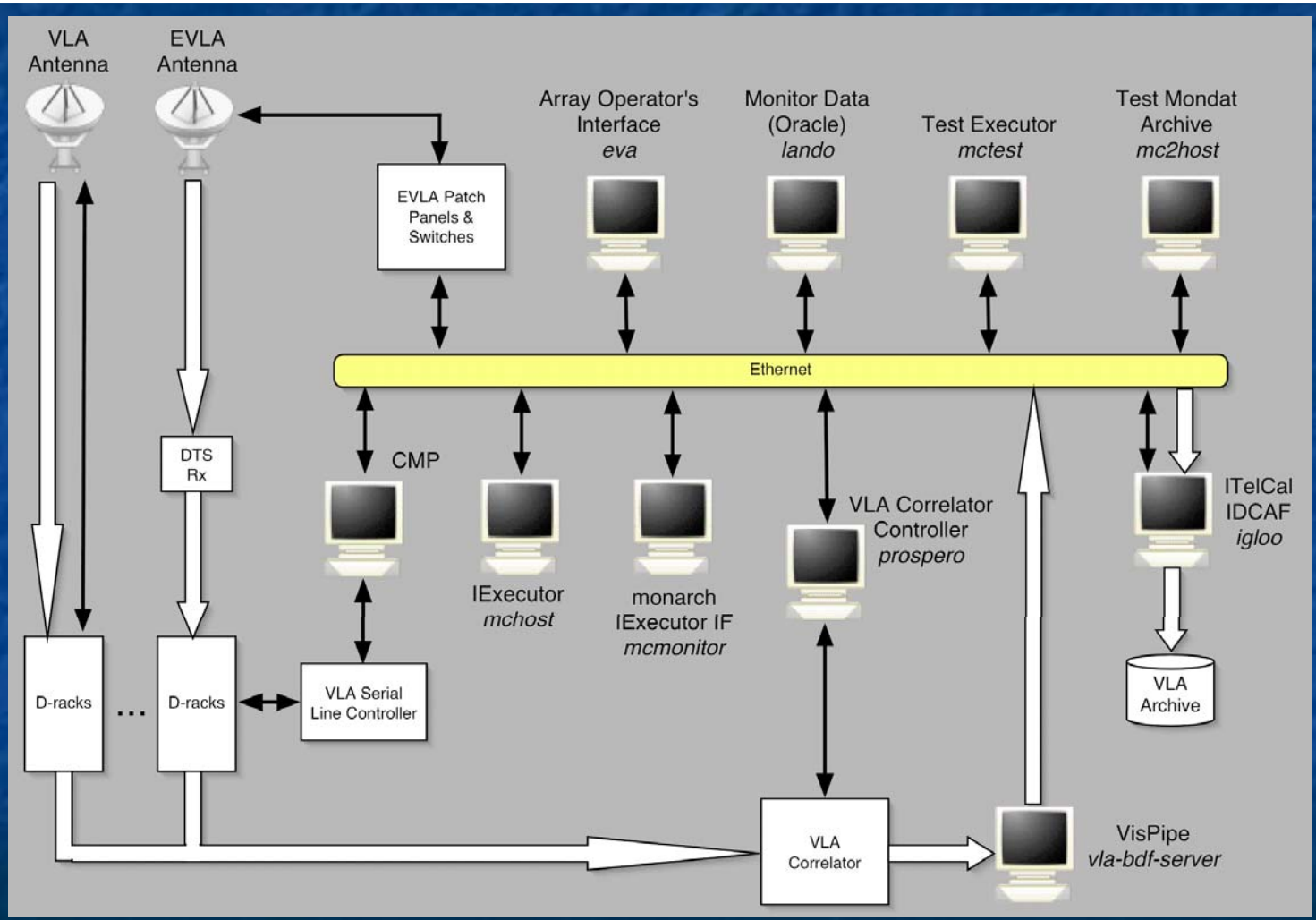
Transition System

- In broad terms, there will be two major versions of the EVLA Monitor & Control System – a Transition System and a Final System
- The Transition System bridges the gap between the old Modcomp-based VLA Control System and the final version of the EVLA Monitor & Control System, while maintaining operational capabilities
- The Transition System will be responsible for controlling a wide array of old and new hardware – EVLA Antennas, VLA Antennas, the VLA Correlator, and the prototype WIDAR correlator
- The Transition System will incrementally shift its software architecture toward the desired architecture of the final system

Transition System



Deployment Diagram



Transition System Milestones

- ✓ Support for EVLA antenna hardware development
- ✓ Use of EVLA antennas in scientific observations
  - Monitor and control of EVLA antennas
- ✓ Retirement of the Modcomp-based VLA control system
  - Monitor and control of VLA antennas
  - Monitor and control of VLA correlator
  - Distribution of VLA correlator output within EVLA M&C
  - Formation & writing of VLA format archive records
- Support WIDAR prototype correlator
- Implement architecture of final system

Modcomp Retirement Milestones

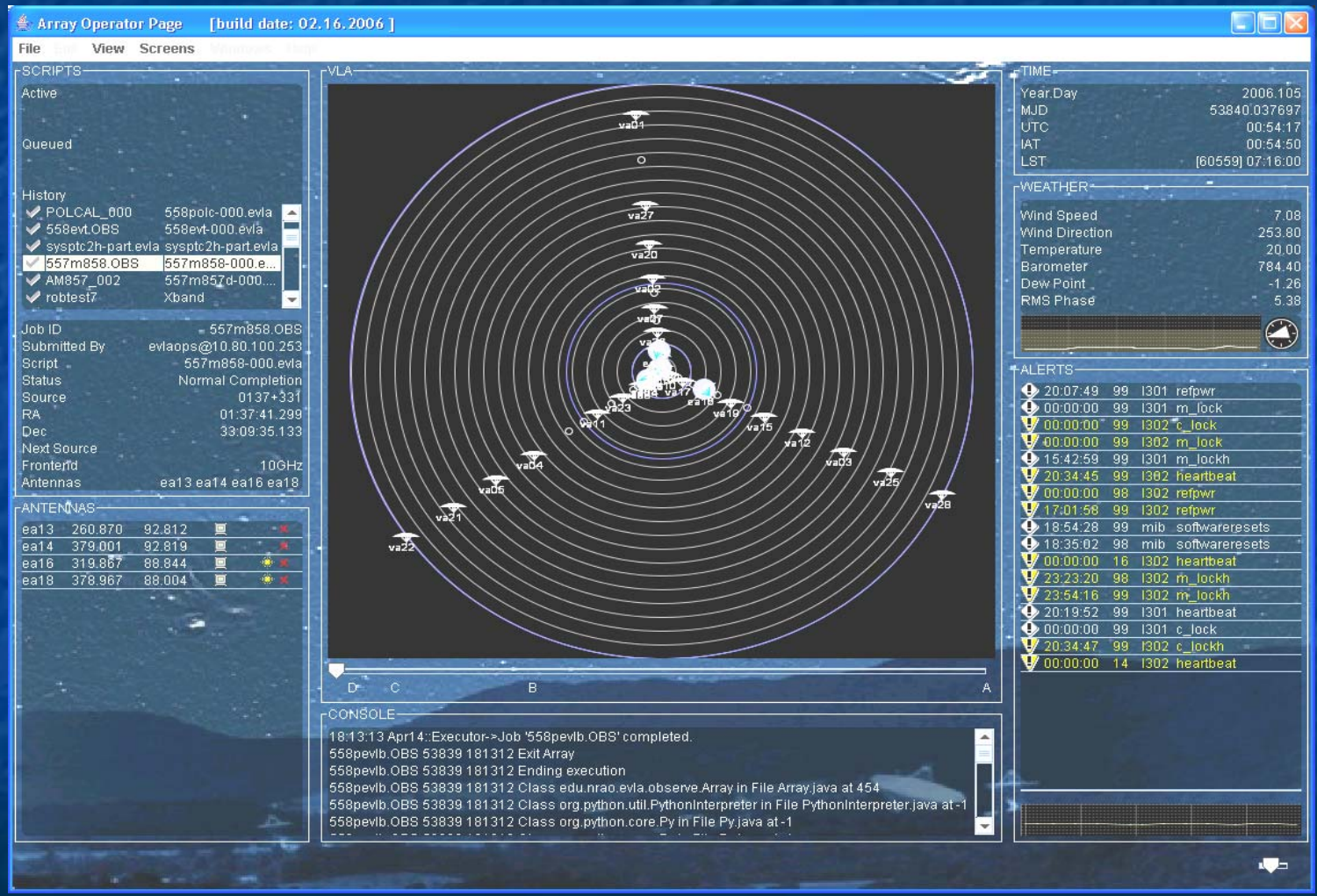
- Monitor and control of VLA antennas – end of Q2 2006
- Monitor and control of VLA correlator – Q4 2006
- Distribution of VLA correlator output – Q4 2006
- Formation & writing of VLA format archive records – Q1 2007
- Parallel operation & testing – Q2 2007

Transition System CDR

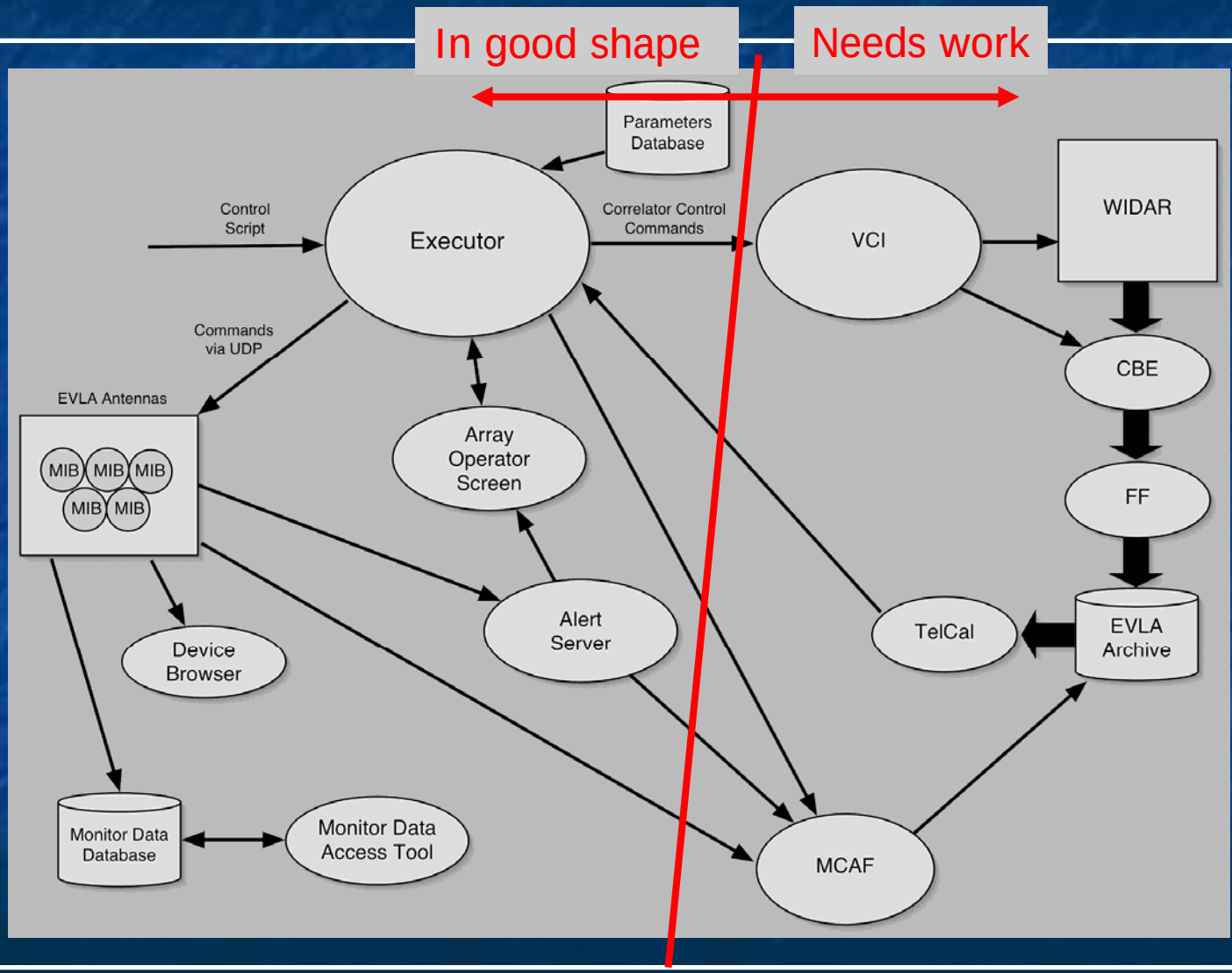
CDR of M&C transition system held Dec. 5-6 2006.

- Passed with flying colors
- General assessment
  - Requirements for the EVLA transition M&C system are complete
  - Architecture selected for the system design will satisfy those requirements
- Specific recommendations
  - Improve the design for network security (plan in place)
  - Improve the design for system alerts (implemented)
  - Update the design of the virtual correlator interface (done)
  - Make the use of the network protocol (UDP) for data transmission robust to packet loss (under advisement)

Array Operators Screen



Final System



Subsystems Requiring Attention

- Correlator M&C System
  - The interaction between the VCI and the rest of the EVLA M&C system is a complex one (we have begun work on this)
  - The collection and writing of data by the CBE and FF needs development (we have also begun work on this)
- Metadata Capture and Format - we have IDCAF, but work on MCAF is in early stages
- Telescope Calibration - we have ITelCal, but work on the final TelCal is in early stages