

A1



ATCA Work at FNAL for Digitizers

Kevin M. Krause

FNAL

10 October 2007



Slide 1

A1

Administrator, 9/27/2007



Centellis 3405

Shelf Manager - Pigeon Point Systems ShM-500

- AMD Au1550
- Monterey Linux / BusyBox
- 64M Flash

Shelf – AXP1405

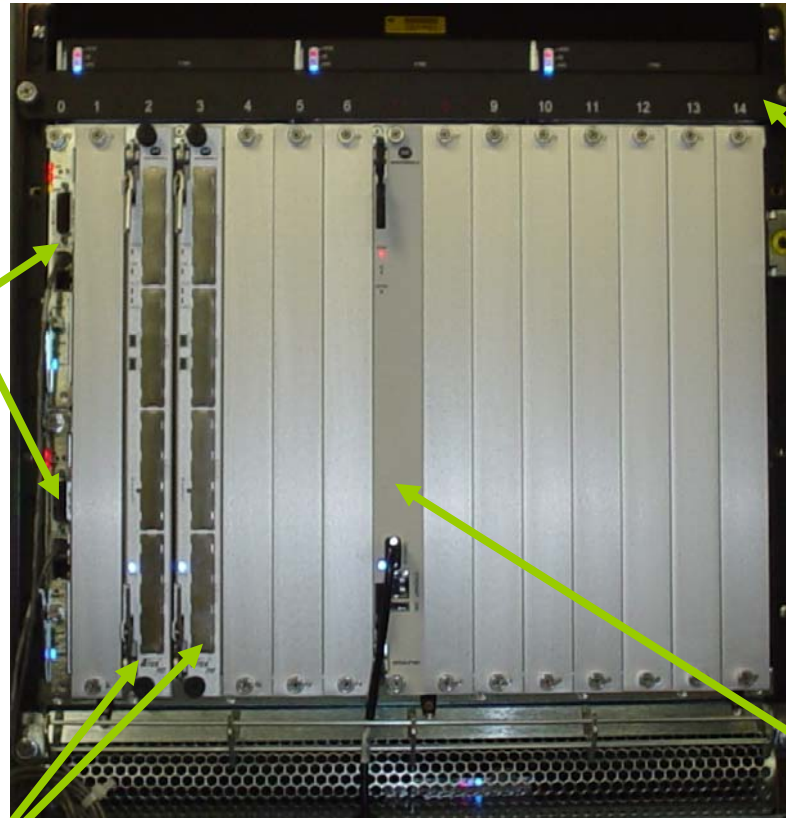
- 14 8U Slots
- 4 FTMs
- 2 PEMs

Computing Blades – ATCA-717

- Intel Pentium M
- MontaVista CGL
- 30G HDD Accessory Installed

Control & Switch Blade - ATCA-F101

- MPC 4774
- MontaVista CGL
- 40G HDD





Centellis 3405

- Interesting Points of Note
 - **Zone 2 fabric interface is dual star topology only.**
 - Dual-dual star and full mesh topologies are not supported.
 - Backplane supports only 2 of the 4 available fabric interfaces on ATCA-717.
 - **Backplane hardwires SAM-A to Hub-A and SAM-B to Hub-B.**
 - A SAM failover will necessitate a Hub failover, and vice-versa.
 - Our shelf as populated can't recover from a SAM failure.
 - **May not be able to populate all 4 PMC slots on ATCA-717.**
 - Likely to violate maximum power consumption limit.
 - With HDD installed, may result in over heating.
 - **A faulty FTM should be replaced within 1 minute.**



Current Status

- Network connections established for switch blade and shelf managers on accelerator controls subnet.
 - **Due to security restrictions these connections are located behind a Kerberized gateway.**
 - **Coordinating with MISCOMP to define Active/Standby blade pairs as “Clusters”.**
- HDD on F101 failure.
 - **Manifested after <1 week continuous operation.**
 - **As part of recovery investigation, acquired the software image and exercised the installation process.**
- F101 returned to Motorola for repair.
 - **Status is New, urgency is Minor.**
 - **No update expected before 17 October.**



Current Status

- Digitizer board layout in progress.
 - **Higher priority activities frequently preempt progress.**
 - **Expect to complete end of October.**
 - **Fabrication and burn-in tests to follow.**
- First working prototype expected January 2008.



Miscellaneous

- Additional equipment needs.
 - **CMC or RTM to access 717 BIOS**
 - **i686 platform for OpenClovis**
- Motorola ECC sold to Emerson Electronics.