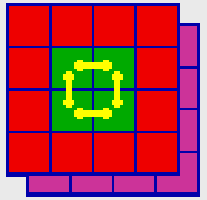
ATLAS Level-1 Calorimeter Trigger

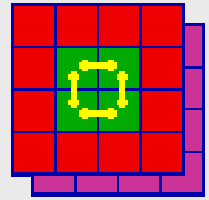


Module Services, Computing Infrastructure and ROS distribution

Overview of Status/Progress

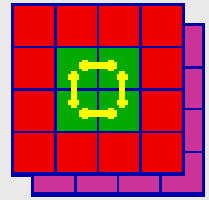
Bruce M. Barnett

Overview



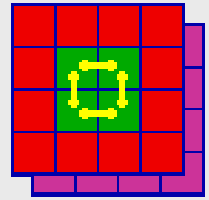
- ROS News (2)
- Industrial PCs (3)
- System Infrastructure Items (3)
- Evolution of Module Services (2)

ROS News (1)



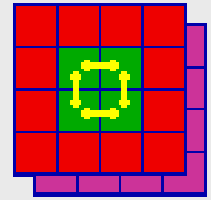
- Current implemetation, as studied:
  - a private development version.
  - Infrastructure tested:
    - drivers for buffer management
    - bigphysarea patch
    - capability server.
  - Comments forwarded to ROS s/w librarian.
  - S-Link interface (front-end) tested.
  - No real ROS functionality tried.

ROS News (2)



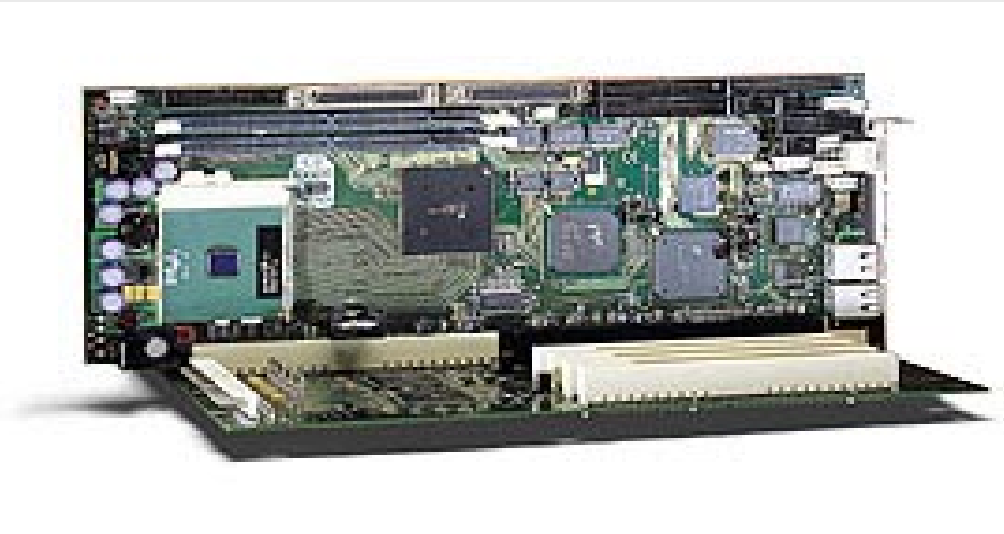
- Official Distribution:
  - In preparation:
    - " The release is coming along, on schedule for the beginning of April. I am hoping, given the amount of work done that it will be more than a Beta release, Beta++ " … [DjF, Tue 3/5/2002 10:48 AM]
  - Will test at RAL when available.

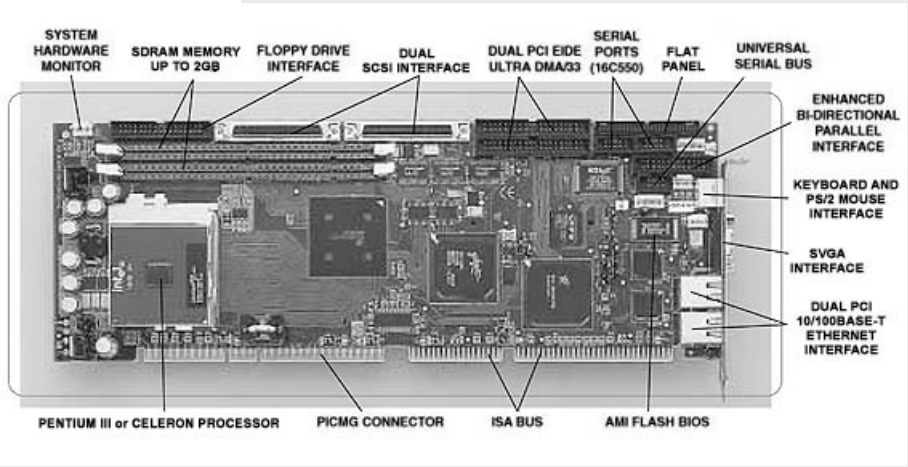
Industrial PCs (1)



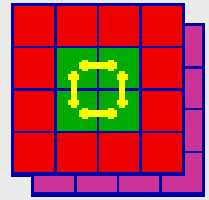
- Required if PCI slot count of >~5 is needed
- Architectures under study:
  - Markus Joos @ CERN
    - PICMG compatible PCI passive backplanes
    - Various configurations available:
      - http://www.trentonprocessors.com/products/
      - 33MHz/32 bit; 33MHz/64 bit; 66MHz/64 bit

Industrial PCs (2)





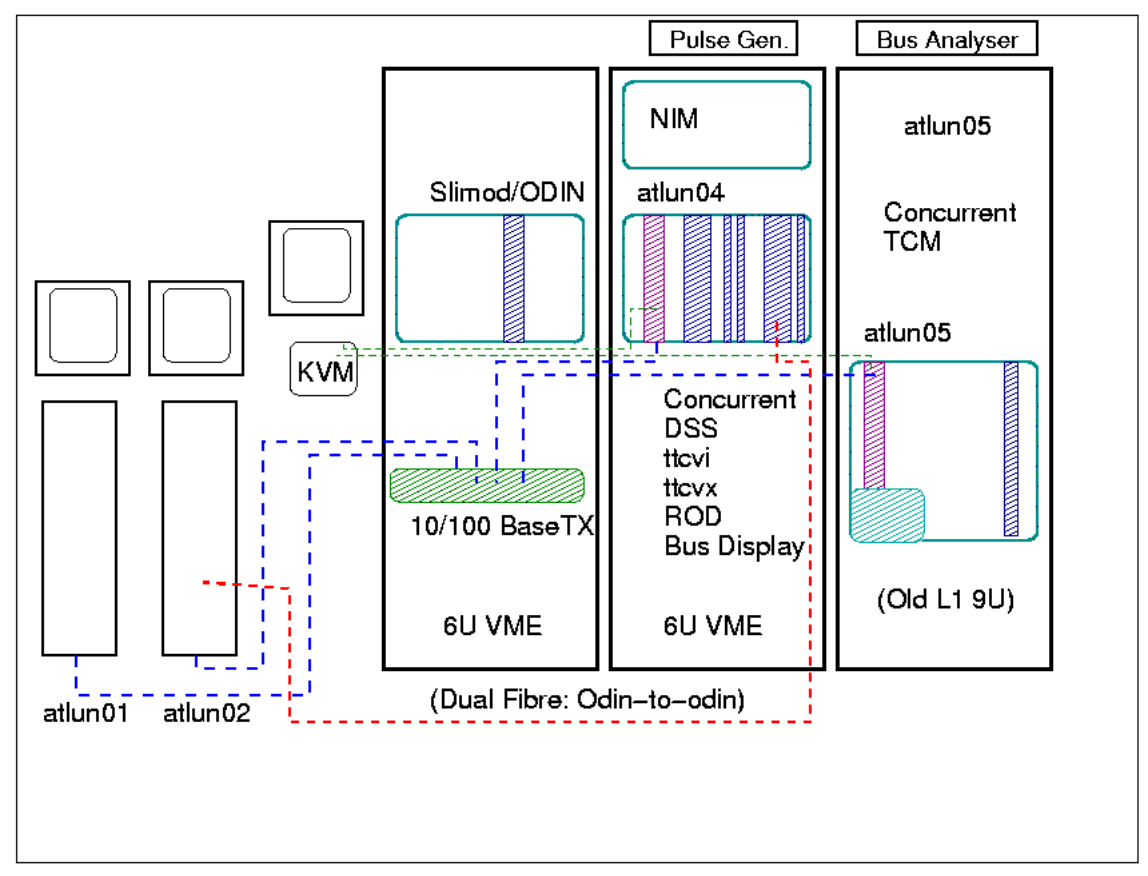
Industrial PCs (3)



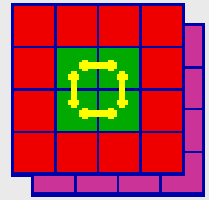
- Latest News:
  - We have received our industrial PC from TRENTON and put Linux on it (kernel = 2.4.9). So far I have made one measurement with a new generation S-Link card (S32PCI64) that shows that we can write into the DRAM of the SBC at ~500 MB/s (i.e. the PCI-PCI bridge does not add a performance penalty to a write burst from the secondary to the primary PCI). I am currently working on a modified version of that S-Link card that will allow me to do some more detailed benchmarking. In parallel we are working on a port of the DAQ-1 software to the 2.4.x kernel. Once this is completed (few weeks) we will benchmark our standard DAQ application on the industrial PC. [Wed 3/13/2002 10:23 AM]

System Infrastructure (1)

- Hardware:

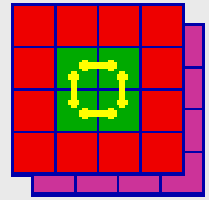


System Infrastructure (2)



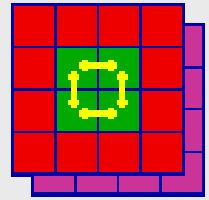
- O/S:
  - atlun01: RedHat 7.2, afs (kernel: 2.4.7-10)
  - atlun02: RedHat 7.0 (kernel: 2.2.19)
  - atlun04: RedHat 6.1 (kernel: 2.2.14)
  - atlun05: RedHat 6.1 (kernel: 2.2.14)
- Configuration:
  - Disk, boot server: atlun02
  - Dual boot, utility: atlun01
  - Diskless: atlun04, atlun05 … atlun03 soon...

System Infrastructure (3)



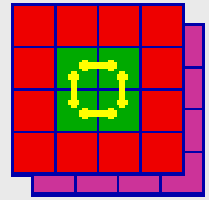
- Plans:
  - update all systems to RedHat 7.2
    - (expected to be ‘next’ CERN certified version.)
    - ROS compatible?
  - Update executable/lib paths to be compatible with DAQ-1 conventions?
    - (eg: i686-pc-linux-gnu/gcc-2.96)
  - share l1calo packages through /opt/share mount.
    - Needs sanitizing.

Module Services (1)



- HDMC Sub-Module Definitions:
  - old ‘Inheritance’ syntax:
    - is now ‘Composites’ syntax (more accurate terminology)
    - updated algorithm and syntax to allow recursive definitions
  - Interaction with configuration store and parts file needs to be sanitized. Flat parts file is always the result of a save!
  - Maintains availability of sub-module structures to both module-services and HDMC diagnostics.
  - Examples available on RAL s/w repository:
    - l1calo/moduleServices

Module Services (2)



- Module Services:
  - sample module available (l1calo repository.)
  - CP/JEP Rod and DSS classes moved to module services tree from HDMC tree (but l1calo and HDMC repositories not yet updated.
  - Library based: how many libraries? One per module?
  - convergence of Test-code (l1calo/testVectors/cpRod) with module service code underway. But slow. (s/w shouldn't stop working while firmware is under test.)
- Module Services Document:
  - Status: somewhat stale.
  - Documentation through code is not the best approach.