



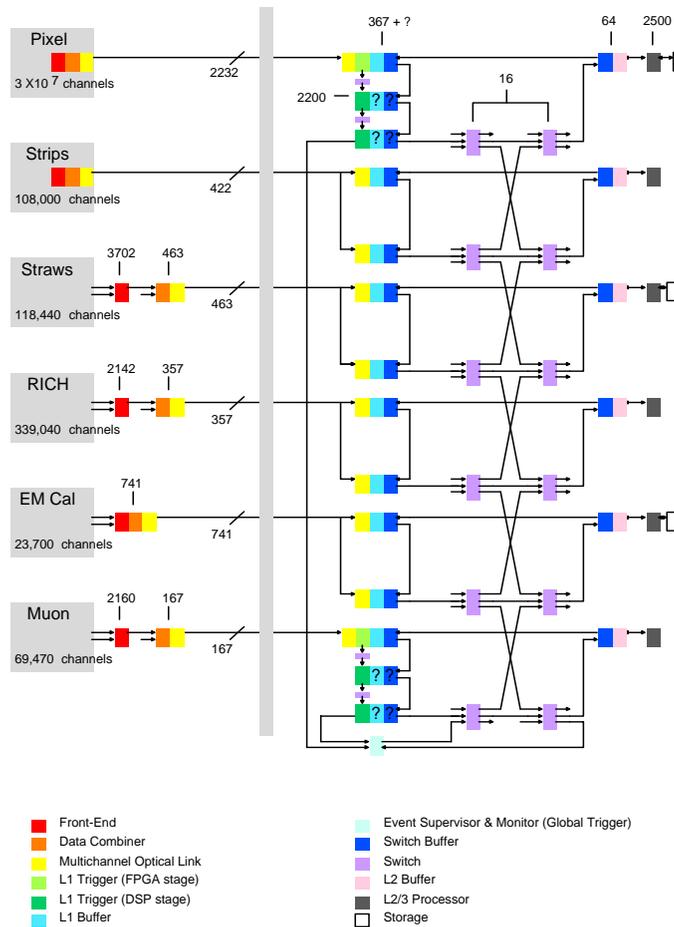
# BTeV Standard Test Stand

- ⌘ Originally conceived as a test stand framework for people to use to build their detector components.
  - ⊞ People are off developing electronics with local tools (e.g., labview)
  - ⊞ Do not want a hasty design/implementation of the data combiner board emulator
- ⌘ Evolved into a diagnostic/production test stand for each sub detectors FEBs
  - ⊞ Pixel test stand underway
- ⌘ Imagined that it might be used in later test beams (post 2001?)



# DA arch slide.

⌘ Reminder that we are stressing standardization



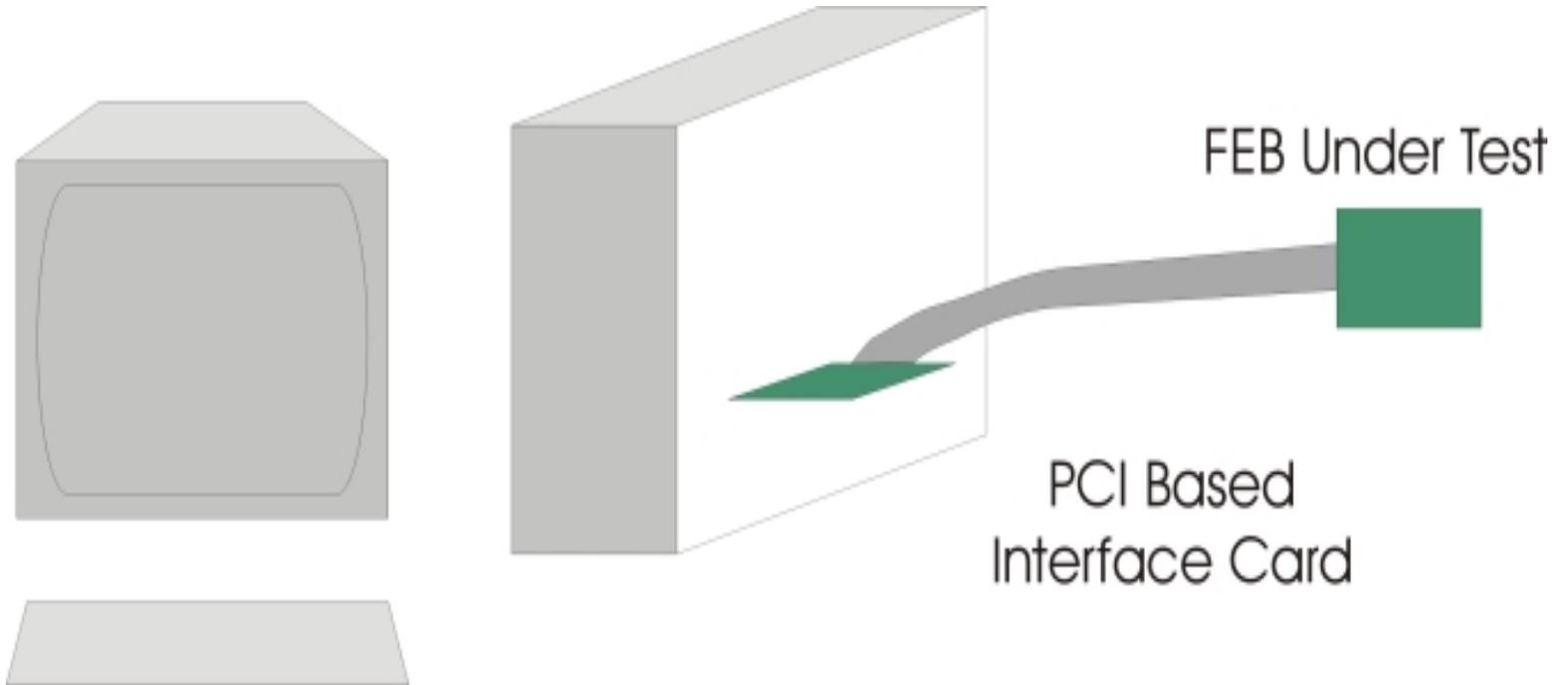


# Standard Teststand Architecture

- ⌘ Goal to is to Test FEBs with a PC desktop.
- ⌘ Design a DCB emulator with a PCI interface.
- ⌘ May need daughter cards for different FEB connectors. Can we minimize this?



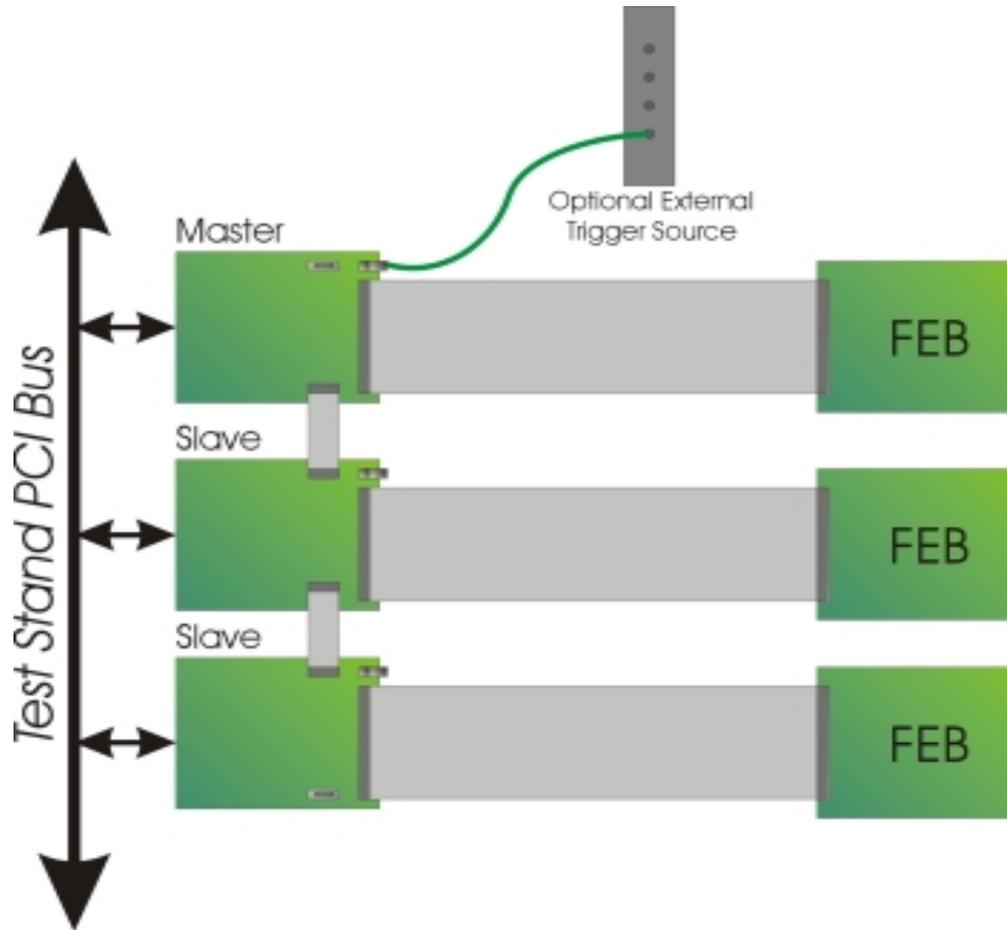
# This is what it looks like





# In more detail

⌘ could be parallel or serial cable (not yet designed)





# Talk about software architecture

- ⌘ Using windriver to generate PCI device drivers
  - ☑ Can generate NT/Window2000/Linux drivers
  - ☑ Need developer's license, but not run time license
- ⌘ GUI can be implemented on top in user's favorite environment – probably labview
- ...



# Pixel work going on

- ⌘ Pixel group developing teststand along this direction to test pixel modules.
- ⌘ FPIX test stand adaptor card (DCB emulator) here - no mezzanine card yet)
- ⌘ Waiting for delivery on FPIX1 Module (FEB)
- ⌘ Working on firmware for adaptor card (Altera device)
- ⌘ Working on design of PCI driver interface will use Windriver to generate
- ⌘ Control will ultimately be in NT/Labview and analysis in MATLAB



# This is what we want you to think about during breakouts

- ⌘ Can data combiner board emulators be the same across subsystems - we can use a daughter card to connect to different inputs?
- ⌘ Is this redefinition of the test stand ok (ie, does anyone rely on this \*now\*)
- ⌘ Why wouldn't you use this (ie, would you develop something different?)
- ⌘ Will this architecture work for production quantities of FEBs?
- ⌘ Would this suite your later test beam needs?
- ⌘ Data persistency for test beams – how will you make it accessible?



# Reminders and directions for Stage II Approval

## ⌘ Camac

- ⊞ Linux/NT support for the 73a
- ⊞ Labview drivers too and labview 6 now runs under Linux (we don't have a lot of experience here)  
Tools

## ⌘ VME

- ⊞ Java based framework, but still needs work. Haven't seen much interest here.
- ⊞ Would like to grow away from VxWorks dependence.
  - ⊗ Difficult environment to program in for novices and vendor support is bad.
  - ⊗ Embedded linux now starting to emerge. Working 1/week since September, IMSA student got CORBA server running a remote "top" to a 2604.

Margaret Votava/Brad Hall - BTev



# More Considerations

## ⌘ CRL

- ☑ Java based Electronic logbook from HEP, now supported by PAT for use at D0.
- ☑ Needs a few more weeks yet for remote access.

## ⌘ Please use CVS

## ⌘ Insure/insight

- ☑ Find problems at compile time and run time (memory leaks!) for C and C++ code.
- ☑ Licenses for IRIX and Linux. Almost have enough ready to float, in the meantime can use the ODS license.

## ⌘ XML for configuration