

Notes from May 20, 2004 TeV BPM diagnostics brainstorming
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Short Intro - Stephen Wolbers

Steve showed some slides with some "BPM Diagnostics Thoughts" Those slides have been inserted into the AD doc DB as doc #1172. From this introduction we branched out into a host of topics that were on people's minds.

I'll try to summarize the discussions here:

- Software diagnostics. The introductory slides did not include any software diagnostics. Margaret is thinking about it and has plans to include trace (debugging tool) inside the driver and the upper layer software.

- Different diagnostics tools. There are many possible diagnostics programs and mechanisms. One is the console application. Another is labview. A third might be some other direct to the VME processor program. There was some discussion about which approach is the best in various types of diagnostic situations.

- How to organize the diagnostics. Jim Steimel suggested that the diagnostics be organized by sub-component. His idea is to organize it as follows:

- Front end/transition/Filter -- Vince's group (Ken?)
- Timing Card -- Bill Haynes
- EchoTek -- Jim and Dehong
- Software -- Margaret
- VME crate -- Mark Bowden and Bob Forster
- MVME processor -- ?

- Different levels of checks. We discussed the possibility of having some global checks of the system, like a one-bump test, every store. If a problem is identified then more targeted diagnostics would be brought to bear to figure out what the problem might be. It was thought that the diagnostics that will be developed to test the initial boards, test the production boards as they come in, check out and integrate the VME crate, MVME processor, timing system, filter board and Echoteks will all be useful and available for steady-state operations and diagnostics.

- Previous experience. It was recognized that Peter Prieto's experience and knowledge with the Recycler system is most valuable and we will certainly talk with him and understand what can be used. This also

applies to R25, the Recycler diagnostics page. We should learn what is there and how we could use it or modify it for our use.

- Console applications. We tentatively decided that the Tevatron BPM upgrade would have one page for diagnostics. Bob West will work on this page and integrating all of the many diagnostics into this page. The initial work will be done in VAX/VMS but it is known that these applications need to port to Linux/C. Therefore, the code will be tested and compiled under gcc to ensure that the port will go as easily as possible.

- Trending. We discussed the possibility of trending diagnostics data over long time periods. Before doing this it would have to be established that this is a useful thing to do. The datalogger could be used to store data.

- Conclusions. This was a very useful meeting. The main decisions are:

- Try to use one console page for all diagnostics.
- Subdivide the work by area
- Think about labview and other more direct approaches and how they fit in.