Quick Status of ULB DAQ Development for PMm^2 Project

K. Hanson - Université Libre de Bruxelles
2009/11/05

Status of Software in General

- Visited Orsay early 28/09/2009 to work on site with PMm^2 team members

- At the end of the day I had corrected some bugs in my code, gathered crucial information about configuration of the PARISROC, and developed a list of deliverables for ULB DAQ

  - Users (BG, primarily) desire system for acquisition of data, preferably in binary format, that can later be analyzed off-line.

  - Want a programmable / scriptable interface so that complex scans of parameters can be made with minimal human intervention

October 2009 Developments

- Focus on DAQ script to take data - 3 modes possible

    - 'RAW' mode - just a literal dump of the data stream coming out of the PMm^2 box copied to a data file

    - 'HITS' mode - the hits get decoded and dumped to ASCII file - primarily good for my debugging

    - 'SORTED-HITS' mode - the hits pass through a timestamp sorting algorithm and are written out as above but in chronological order (pre-trigger condition)

- Also developed a Playback mechanism whereby the raw data can be read and dumped in HITS or SORTED-HITS mode.

TODO

- I encountered some problems in tests this past week

  - the sorting algorithm assumes that each channel only produces hits in ascending order (but the order between channels is not thus restricted)

  - there was a small bug in the FPGA (?) which caused this condition to be violated - this confused my hit sorter

  - Beng-Yun has fixed this bug but I need to re-test

- Need to develop a good binary format for storing sorted hits so that Bernard can analyze sorted hit data.

- I want to add triggering too - a simple multiplicity trigger to begin