

Laboratorio IPL – proposta di tesi

Development of electronics for data acquisition within the Medipix project

Master project in cooperation with

Elettra (www.elettra.trieste.it), Diamond (the UK's national synchrotron, www.diamond.ac.uk)

Location: Diamond, UK

Start date: around October

Duration: 6 months

Prerequisites: knowledge of HDL, Labview, FlexRIO systems



Timepix3 Project Objectives:

To modify the existing Merlin Adapter Card and software to work with the new Timepix3 chip from CERN.

- 1) Modify one Merlin Adaptor Board to match the new VHDC connector pinout.
- 2) Modify the FlexRIO input CLIP node to match the new signal format (VHDL work).
- 3) Modify the LabVIEW FPGA firmware to interface with the new mainly packet based comms.
- 4) Modify the LabVIEW Host GUI to control and display the new chip.

The data readout mode could be limited to the Frame Based Event Counting mode only to simplify the Host changes.

The amount of work achieved will be highly dependent on the candidate's LabVIEW and VHDL experience. While initial preparation work can go ahead against the specifications only, the availability of hardware i.e. a Timepix3 mounted on the CERN chipboard, will be crucial to proving the function of any code. Further breakdown of work can be done against the above tasks to manage the project in more detail.

Diamond will refund the accommodation, travel, and subsistence expenses of the student up to £800 per month (receipts must be produced). It should be also possible to refund two return flights from Italy.

Info c/o

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