Brief ppRDO Status Update, 07-Jun-2024

- ETROC ETL board testing
  - I can trigger it and read data at 640 Mbs (also at 320 Mbs) **– good!**
    - checked the CRC too
    - I will leave 1280 Mbs for Zhenyu et al, if they get to it
  - this means that we commissioned
    - I2C communication with the ASIC using LVCMOS12
    - direct-FPGA fast serial links to the ASIC using DIFF_SSTL12_DCI
    - direct-FPGA fast serial link from the ASIC using DIFF_SSTL12_DCI
    - clocking to the ASIC using Si53302
    - internal ISERDESE3/IDELAYE3 FPGA primitives to de-serialize the data
    - understanding on how to align the bits into words
  - Note: EICROC is expected to have ~400 Mbs data links so we already know how to do it – DONE!
  - I am done with the Rice lab setup (for now!) – Thanks Mike!
- H2GCROC Board testing
  - I am aborting this because I need to return the board to Miklos for their own tests in a few days
  - I am in contact with them and I will (try to) get a CALOROC ASIC board which they will produce
    - reminder: CALOROC is done by the same Omega group as our EICROC and is expected to have exactly the same digital backend
    - not sure about their schedule but I doubt it's before ~March or so…
- Incremental Electronics & DAQ Design Review, June 10-11
  - I was asked to present the ppRDO under eRD109
- Next steps (for me)
  - Implement the fiber links on our boards – need to talk to William
  - implement the 32x ASIC emulation – important for power estimates as well as SEU testing (at some point… BTW, I talked to Fernando about this…)
- BNL
  - they (Tim) received 1 ppRDO and Prithwish/Tim & I need to figure out procedures (in progress)
  - first todo item: I am hoping that they can measure the power for all our regulators
- "mini-DAQ"
  - I found an interesting PCIe card with a Xilinx Versal which is super-cheap ($800) and commercially available
    - It can act as the FELIX board but in a <u>much smaller, simpler footprint!</u>
  - William purchased 2 with the idea of shipping 1 to me to create a full "mini-DAQ"
    - ppRDO ⇔ "FELIX" ⇔ DAQ PC ⇔ readout software
  - HOWEVER, the problem is that I have to pay ~40% customs duty on USA imports which is a bit too much for my pocket.
    - Any advice on how to get this board delivered to Europe "indirectly"???