Correlator Control and Implementation Meeting

Tuesday November 23, 11.00, Muller room

present: Jonathan, Salvatore, Sergei, Harro, Des, Paul, Mark, Eric, Arpad

Agenda

filters (Altera vs Raj)
communication to board
correlator control system
timeline first light

prepska CODR document

Jonathan discusses 10G tests betweeen Uniboard and PC (document to be placed on wiki). No obvious show stoppers for production go ahead

Salvatore talked about three possibilities for FFT: Lofar, Raj and Altera (which really seems to be free). Lofar is not suitable for gapped data, Rajs not yet. All of them use up lots of resources. Use Altera for first light version. Casper FFT might be worth looking into, although use of resources is not known. Student of Kris will come to Astron in February, could ask him.
*action Salvatore: send email

Jonathan explains situation further, 4 time multiplexed signals go into mixer, 4 FFTs are used, all only work 1/4 of time. Jonathan asks about test of filters: Sergei proposed a sinewave on white noise (with much lower amplitude than noise). Compare output S/N – input S/N.

For all 8 channels 1024 multipliers on the chip are used + half the registers, and this only for the FFTs.

There should be configurable FFTs commercially available. RFAEL, or maybe look into Giannis FFT. Paul suggests multiplexing the FFT, save resources, need lots of memory.

*action Salvatore/Jonathan: look into RFAEL, Gianni FFT, possibility to multiplex

Needed for auto correlation demo: BN cornerturning, correlation. Cornerturning most complex. Not clear February is realistic. Detailed desing of FN mostly done.
*action Jonathan/Salvatore: come up with list of specific tasks, and time estimate

Also needed: test data. Can be generated. Some low level of control

Harro tells communication to single FPGA is done, now working on second layer that will communicate with whole board. All this needs to be integrated with user interface.
* action Arpad: set up correlator interface meeting with Harro, Des, Mark, Aard, eBob.