

Correlator meeting, Arpad's room, 20 February 2014, 11.00 am
Present: Guifré, Jonathan, Des, Harro
Salvatore is on holiday, Arpad is at a conference in S. Africa.

- progress reports:

.Des

The code to talk to the Mark5's directly is there but due to a lack of operators (e-VLBI) and HILADO he didn't have time to actually test it in vivo.

.Des/Guifré:

Together with Des, Guifré managed to install the uniboard control system's dependencies (e.g. mysqlclient and a few other packages). They succeeded in running the correlator (scan 11 of N11L4) but no fringes were observed. Data was sent to the uniboard, data was read from the correlator, the model files are exactly the same as used by Des and Jonathan but no fringes.

Jonathan remarks that he's been going to and fro with respect to the sign of the model coefficients. He will check what the firmware expects and what is now in the repository - if Jonathan has local modifications in his Erlang code he'll commit them to the repository.

. Jonathan

The new pkt_rx module behaves equally well as the old module now, possibly even better. On high signal-to-noise baselines the phase behaves better; on lower snr baselines it's difficult to see if the code is better or not.

Some phase issues remain, especially at the first integration of a scan.

The phase jump described last week seems to have a (temporary) fix. At least the origin was found; it has to do with the fact if the model turns out to generate the necessity of a skip-sample or repeat-sample in the last FFT of an integration. This value is remembered and incorrectly undone at the start of the next integration, introducing a phase jump of (theoretically) 90 degrees. The thing is that data from the last FFT to which the sample correction is applied does not necessarily make it into to filter bank.

The temporary solution applies the skip/repeat sample at a different phase in the processing [the old behaviour was to do it at the time of reading a sample from memory]. It is likely that in the future an even better location where to apply the skip/repeat sample has to be found.

Also did some work on DSP builder (inconclusive as to what was done) and requested we test other VDIF frame sizes than the current 5000 byte packets. Consensus was reached to do this as soon as we can take data from the Mark5's directly because jive5ab can easily generate differently sized packets on the fly. Also the necessity to start correlating a different experiment was discussed and agreed upon.

.Harro

Wrote a C version of the packet capturer and wrote an Erlang driver around it to control the packet capturing. In order to support both the Erlang and C based capturing methods the capturer has to be changed (simplified) - one whole layer of

abstraction can be removed. The impact on the high-level run script should be minimal; the estimate is: add one line, edit two. It was decided to first make fringes re-appear before we start breaking the output collecting - it will affect all three (3) current users of the correlator control system.

-aob

Guifré will be on holiday next week.

-next meeting

Thursday 27th february 11.00 am, after jive coffee (although presence could be minimal - we expect three, max four attendants).