Correlator and control and implementation meeting, July 10, 2012, Minnaert

present: Jonathan, Salvatore, Jintao, Harro, Des, Mark, Aard, Arpad

Action items
=============
Des/Harro: investigate Erlang performance problems reading UDP packets

-has been fixed, but needs testing. Was an issue of (in)sufficient buffer size. **action Jonathan: run test
Discussion follows on packet spacing, will be needed on output. Probably possible to define "worst case" packet spacing based on available networking equipment. Still probably needs to be adjustable. Will have to be sorted, but not now.
**delayed action Jonathan and Salvatore: figure out how to make packet spacing adjustable

Salvatore: find someone in LOFAR who knows the details of the PFB, check if they know about the behaviour and why they think it is acceptable.

-done, talked to Eric, the adjacent bin suppression we reach is comparable, but we use fewer taps. Salvatore talked to Sergei, who thinks the configuration is fine, but may need different windowing function. May need more taps at a later stage. Compared 6 to 16 taps, noise comparable, but steeper with more taps. 40dB suppression with 6 taps, Lofar got 80. Sergei thinks 40dB is about right.

Des: figure out validity bit handling in SFXC

-not done, remain

Jonathan: ask Aard for comparable SFXC plots

-done, remove

Jonathan: check on 8GB modules

-done, found one vendor. Check with Gijs if these will be supported by UB **action Jonathan

Jonathan: find out of spectral resolution needed (ask Rob, Zsolt?)

-talked to Zsolt not yet to dr Bob, remains

Discussion about freq resolution needed. 32-64 bins would ease timing constraints on FN, while BN might not need corner turning anymore. Possibility is there to use separate personality of UB for high resolution, do full BW in continuum mode, split off part and feed it to second UB. Or SFXC. Talk to dr Bob about "normal" spectral resolution needed. Aard thinks requested res may be an inheritance of MkIV limitations. Anyway, res is now not very impressive, and to make it higher would cause big problems. Separate high res solution better.

Delay module has to be tested first, before starting work on decreasing spectral resolution in design.

Discussion about delay model doc of Des, everybody seems agreeable with his conclusions, only evaluate coefficients every second instead 1/32 second (which fell out of the sky at some point and started to live its own life). Use 48 and 64 bits, no problem at this interval.

Des wonders if time stamps should be included in packets w delay coeff. There is no central time keeping. Jonathan thinks integer counter might be better, but then figured that the BN needs to know the time (?)

Clearly more discussion needed next meeting, which will be on Thursday July 19 *after* JIVE coffee.