

CALLISTO status report #7 of 2004-02-04**To:**

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FPU (focal plane unit)

Due to very high interferences from the electronics (RISC-processor and RS485-interface) inside of the FPU we got a system temperature which was too high. Now we are replacing the plastic case for a professional aluminum box to shield to antennas from the high frequency *E*-fields. We still want to prepare a complete set of calibration data for both channels (LHC- and RHC-polarization).

RCU (receiver control unit)

Not applicable

RX (receiver)

System gain was doubled to approximately 100mV/dB for optimum resolution at the ADC input. Eventually the detectors offset were adjusted to the lowest possible value to not give away too much resolution of the ADC. The low pass filter in the back end circuit was adapted to a maximum scan rate of about 1000 pixels per second.

Host, Server

Not applicable

QM (qualification model)

All I/O checked and equipment set into operation at sun tower in Zurich. Unfortunately the sun radio activity is rather low thus; no extraordinary spectra can be presented here.

FM (flight model)

All I/O checked and all sheet metal screws replaced by standard M3-DIN bolts to keep the cabinet tight. A complete set of semiconductor spare parts ordered for delivery to Green Bank.

AOB (any other business)

Up to now the maximum scan rate was limited to about 400 pixels per second. After intensive investigation we've just found the bottleneck. It was the 'C++'-function 'atof()' which was used to prepare the control parameter for the tuners. One single atof() takes about 500 μ seconds to convert a string like "610.00MHz" into its floating number value. Since we set the highest priority to a maximum scan rate, we have to implement another solution. Now we are changing the communication between host controller and RCU from a readable frequency-string to non-readable binary commands expressed as HEX-characters. We are confident to improve the maximum scan rate near to 1000 samples per second or even more [TBC].

Decisions:

- We decided to hand carry CALLISTO to Green Bank
- We would like to start in West Virginia with both, Hansueli and me because really everything is new for both of us. As soon as we know the people in Green Bank and as soon as we know where and how everything operates it will later on be easier to work alone.