

Metsähovi station report Q2/2013
EVN TOG meeting – Bonn 2013

- 1 - Receiver status
- 2 - BBC/DBBC status
- 3 - Disk recorder status
- 4 - Mark 5A issues / Mark5B+
- 5 - Formatter issues
- 6 - Phase cal
- 7- 1PPS problems

1) Receiver status

The new 86 GHz receiver will be repaired during 2012/2013 due to instability issues. The 43 GHz receiver has been out of order for the last years and will be repaired in near future. The 22 GHz receiver is working fine. There have been some problems with the S-band of the geodetic S/X receiver since 2007. We changed the semi rigid coaxial cables of the receiver which were broken.

2) BBC/DBBC status

Status of our old VLBI hardware was not as good as it could be: some of rack BBCs are broken. Two of the broken BBCs were repaired and now total of 12 BBCs are being used in the experiments. Repairing was done by replacing the BBC's oscillator chain with a 300 dollar synthesizer.

We ordered of a DBBC from Hat-Lab, and it arrived in September, 2012, with a standalone FILA10G. Also a new Mark5B+ arrived in Spring of 2012. After the April, 2013, geo session, in which we'll do a parallel recording with the old and the new equipment, we will switch over to using only the DBBC+Mark5B+ combo.

3) Disk recorder developments

We have developed a new DAQ system, the FlexBuff, using COTS components. Local UDP streaming performance tests : Wirespeed 10GE , Long (30min) tests show writing at max wire speed and 0 packet loss , Writing to 34 disks /wo net , Architecture can handle 40Gbps; always >30Gbps .

4) Mark 5A issues / Mark5B+

We have fixed our Mark5A 1 Gbps recording problems by changing a resistor (R25 to a 27-ohm one) in the Mark5A I/O board. We have purchased a Mark5B+ system, which has already been in use in EVN sessions.

5) Formatter issues

Metsähovi has been suffering from formatter being out of sync during various sessions. After deploying the Mark5B+ and the DBBC, and getting rid of the old rack, these problems will vanish.

6) Phase cal

Because the phase cal box is temperature dependent and because there has been a lot of drifting and phase jumps, the box will be temperature stabilised.

7) 1PPS problems

The 1PPS distributor destroyed the Metsähovi 1PPS going to the VLBI equipment. A new distributor has been purchased.