Metsähovi station report Q2/2012
EVN TOG meeting – Onsala 2012

1) Receiver status

The new 86 GHz receiver will be repaired during 2012. 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 VLBI hardware is not as good as it could be: some of rack BBCs are broken. Two of the broken BBCs were repaired and now total of 11 BBCs are being used in the experiments. Repairing was done by replacing the BBC's oscillator chain with a 300 dollar synthetisizer. For the time being we will use an iBOB 1xVSI => 10G workaround design.
We have made a formal order of a DBBC from Hat-Lab. The DBBC should arrive during the Summer of 2012.

3) Disk recorder developments

We have developed a new DAQ system, using COTS components, which has 36 x 2 TB hard disks and can write at the speed of 17 Gbps. The speed in the 10 Gbps Ethernet should be 8 Gbps. Preliminary results show speeds twice as good as in the DAQ system developed for the EXPReS project. We also have achieved 24 hour recording time using 4 Gbps. This led to a data amount of about 60 TB.

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'll use 1 Gbps recording in the EVN session 2 in May/June 2012.
We have purchased a Mark5B+ system, which is now ready to be used. We're waiting for the DBBC to arrive before starting to use the system in the upcoming sessions.

5) Formatter issues

Metsähovi has been suffering from formatter being out of sync problems during various sessions. After deploying the Mark5B+ and the DBBC 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) Metsähovi Data Analysis Site

Metsähovi became an official IVS station together with the Finnish Geodetic Institute (FGI) earlier in 2012.

Geodetic VLBI data from the IVS intensive and 14-hour sessions is being analyzed with the Vienna VLBI Software (VieVS). The analysis process of intensive sessions is automated. Metsähovi is investigating its possibilities of becoming an IVS Associate Analysis Center together with the FGI in 2012.