

Metsähovi station report II/2020-I/2021
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1) Receiver status

Following Metsähovi's VLBI-receivers are currently operational: 2/8, 22, 43 and 86 GHz. All receivers have been working without any failures. All receivers have 500 MHz wide IF-band.

Some improvements for 86 GHz receiver were made. The remote-control (for the frequency tuning) option was added to the local oscillator (LO). In addition, quasi-optics of the receiver was upgraded. Thus, the better calibration results will be achieved. The new features were tested on April 2021 GMVA session.

After holiday season (8-9/2021), we have a plan to start the open competitive tendering for a new wide-band (triple-band) receiver (for K-, Q- and W-bands).

2) DBBC status

The dBBC2 has been working without any problems. The new dBBC3 has been ordered. The expected delivery time of the dBBC3 unit is 11-12/2021.

3) Flexbuff and other recording systems

Flexbuffs have been used successfully both in EVN and GMVA sessions. A new Flexbuff unit (hostname: luckyluke) was purchased in spring season 2021 with 0.684 petabytes of hard disk space. Older local Flexbuffs are available with the space capacity of 196 TB (primary Flexbuff 144 terabytes and secondary Flexbuff 52 terabytes). Therefore, the total disk space capacity is 0.844 petabytes. All astronomical VLBI-sessions are recorded to Flexbuffs. Mark5B+ is currently only use in geodetic-VLBI-sessions.

4) Network

There are plans to upgrade Metsähovi network infrastructure to 100 Gbps optical Ethernet, to match the upgraded CSC/Funet 100 Gbps Internet connection (external network).

5) Software versions

We have installed FS 9.13.2, SDK 9.4 and jive5ab 2.8.1 (Mark5B+) and 2.8.1 (Flexbuff). DBBC firmware versions DDC v 106, DDC v 107_300119, DDC v 107_281019, and PFB version v 16_2 are available. In addition, FILA10G version v3.3.2_1 is in use. The latest dBBC's firmware version 107_281019 is the most commonly used version.

6) EVN sessions in 2021 – 2021

Metsähovi Radio Observatory (MRO), Aalto University participated in following EVN-sessions with this period of time (II/2020 – I/2021):

- 6/2020: K-band
- 10/2020: K-band
- 3/2021: K-band

In addition, MRO participated in following EVN-Target-of-Opportunity-sessions (ToO):

- 4/2021: Q-band

MRO also participated in two GMVA sessions (October 2020 and April 2021).

7) Other issues

The renovation of Metsähovi Radio Observatory was finally completed in January 2021. Some minor re-cabling works still will be done in summer season 2021.