Report from the event supported by RadioNet

TITLE   *TOG & GTG MEETINGS*

DATE: *5 MAY 2020*

LOCATION: *VIRTUAL (ZOOM MEETING)*

MEETING WEBPAGE: *https://radiowiki.mpifr-bonn.mpg.de/doku.php?id=na:sustainability:tog:2020_05*

HOST INSTITUTE: *NN*

RADIONET BENEFICIARY / NO: *TO BE FILLED BY MANAGEMENT*

Report:

1. SCIENTIFIC SUMMARY

Links

The following public pages contain information about the meeting:
1. https://radiowiki.mpifr-bonn.mpg.de/doku.php?id=na:sustainability:tog:2020_05
2. https://events.mpifr-bonn.mpg.de/indico/event/144/

OBJECTIVES OF THE MEETING

The TOG (Technical and Operations Group of the EVN) meeting takes place every 9 months in a different observatory of the EVN to allow a direct exchange of technical expertise and experience between the station personnel. Every 18 months the TOG meeting is held together with a meeting of the GMVA technical group (GTG). The meetings are attended by VLBI friends and technical staff of the stations and the correlators as well as by selected external experts. The meeting reported about here was planned to be a joined meeting of the TOG and GTG at the Max-Planck-Institute in Bonn, Germany. The two day meeting should have been followed by another workshop day to present the new developments on the wide band BRAND receiver and the DBBC3 VLBI backend, which will allow very sensitive VLBI observations.

Because of the COVID-19 pandemic the meeting had to be postpone and a shorter one day virtual meeting was held instead.

The general objective of the TOG meeting is to identify operational issues of the EVN and GMVA infrastructures and discuss strategies to mitigate those in the future. Permanent agenda items deal with improving the quality of calibration, maintenance of the data acquisition and recording equipment as well as of the used software components. In addition strategies of improving the scientific capabilities of the infrastructures are being discussed. The main results of the virtual meeting will be discussed in the following section.

The presentations and subsequent discussions can be found in the minutes of the meeting.

MAIN RESULTS OF THE MEETING

The installation of the continuous calibration at most stations has finally been achieved and some improvements on the calibration at centimeter wavelengths can be seen. Improvements for shorter wavelengths observations are being discussed. Two guest from non EVN observatories were invited to the meeting to present their stations and developments as potentially new partners in the EVN. One in Ukraine (Zolochiv) and another in Armenia close to Orgov, which would well close a gap in the EVN uv-coverage.

Further topics being discussed include eVLBI progress incorporating more stations, DBBC3 software developments, Field System developments, status of the 32 Gbps project, media requirements for higher recording rates, code sharing via git hub. The most important conclusions of all discussions among the members are collected at the minutes and presentations from participants can be found at the wiki web page.

The list of action items together with the people they have been assigned to can be found within the minutes of the meeting, which can be looked up at this link: https://radiowiki.mpifr-bonn.mpg.de/lib/exe/fetch.php?media=na:sustainability:evn_tog_minutes_05_may_2020-v2.pdf

2. AGENDA OF THE EVENT

May 5th, 2020

1. **Opening Remarks (Bach)**
2. **Approval & last minute additions to Agenda (all)**
3. **Acceptance of minutes from last meeting (all; Minutes from Jodrell meeting)**
4. **Review of Action Items from last meeting (all; see Action Items from last meeting)**
5. **Review of Permanent Action Items (all; see Permanent Action Items)**
6. **Reliability/Performance of the EVN**
   - Reliability/Performance of the EVN. (JIVE support scientistc)
   - NME results (JIVE support scientist)
   - Feedback from last sessions. (JIVE support scientist)
   - Amplitude calibration. (JIVE support scientist)
7. **Amplitude Calibration**
   - Review of continuous cal at the stations (Bach)
8. **VLBI backends**
   - DBBC2 and Fila10G news (Bach)
   - DBBC2 firmware: V107 (Bach & all)
   - Other VLBI backends: MDBE, OCTAD news
9. **Recorders: Mark 5, Mark6, Flexbuf**
   - Recorder news/problems (all)
   - Flexbuff status and 2 Gbps (all)
   - Disk inventory and purchase status (Bach, all)

o Future media requirements, Flexbuff upgrades (Bach)
10. **Stations**
  o Any news? (All)
  o Availability for EVN Session II? (All)
  o New stations: ROT-54 (Sargsyan), RT-32 Zolochev (Ulyanov).
11. **eVLBI**
  o Current status, new stations, 2 Gbps, … (Verkouter)
12. **JIVE**
  o Technical Operations and R&D at JIVE, (Verkouter)
13. **Technical Developments**
  o Path to 4 Gbps recording rates. (Bach)
  o Available IF bandwidth at all bands, receiver developments (Bach)
  o Report on higher incremental recording rates up to 32 Gbps (Bach).
  o DBBC3. Current status. Backwards compatibility and available firmware (Tuccari)
  o BRAND receiver (Alef)
  o Auxiliary scripts & central repository (Bach)
14. **Field System, status and new features**
  o Status and new developments (Ed)
  o Next Generation Field System (all)
15. **VLBA, GMVA and Globals**
  o VLBA status and high frequency updates
16. **Date and place of the next TOG meeting**
  o Bonn in November, after session 3?
17. **AOB**

TOG presentations

- Bach, TOG chair slides
- Byandina, Reliability/Performance of the EVN
- Verkouter, R&D at JIVE
- Sargsyan, ROT-54 status
- Ulyanov, RT-32 Zolochev
- Tuccari, DBBC2/3 status
- Alef, BRAND receiver
- Himwich, FS development
- Brisken, VLBA news
- Blanchard, VLBA high frequency accuracy

3. PARTICIPANTS

The number of online participants peaked at 44, from 15 countries of Europe, Africa, America, and Asia from a total of 17 institutes. 4 woman attended the meeting. Screenshots of the participants list are attached at the end of the minutes.

4. RADIONET FINANCIAL CONTRIBUTION

Because of the virtual nature of the event no costs claimed to RadioNet.

5. PUBLICATIONS

All talks, presentations, station and correlator reports and minutes of the meeting are public available at the RadioNet web site: https://radiowiki.mpifr-bonn.mpg.de/doku.php?id=na:sustainability:tog:2020_05