



Report from the event supported by RadioNet

TITLE *TOG & GTG MEETINGS*

DATE: *24 NOVEMBER 2020*

LOCATION: *VIRTUAL (ZOOM MEETING)*

MEETING WEBPAGE: https://radiowiki.mpifr-bonn.mpg.de/doku.php?id=na:sustainability:tog:2020_11

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_11
2. <https://events.mpifr-bonn.mpg.de/indico/event/179/>

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 held again as a one day virtual meeting, because the COVID-19 pandemic did not allow international travels.

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 EVN board has published together with many scientists their view of the future of VLBI for the next decade. Based on this a technical roadmap was compiled with the most relevant technical developments that should help to achieve the science goals. More bandwidth and wider frequency coverage is most common requirement for all science fields and the TOG discussed the installation wide band receivers and the next generation of VLBI backends. The



goal to double this disk space capacity at stations to store the data at higher bit rates was defined. A guest from Portugal presents a possible new station on the Azores island, which would be a unique link to the American stations for global observations and extends the uv-coverage to the West for the EVN.

Further topics being discussed include firmware developments for the DBBC3, Field System developments, status of the 32 Gbps project, and 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_24_nov_2020_-_v2.pdf

2. AGENDA OF THE EVENT

November 24th, 2020

1. **Opening Remarks (Bach)**
2. **Approval & last minute additions to Agenda (all)**
3. **Acceptance of minutes from last meeting (all; Minutes from May 2020 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**
 - o Reliability/Performance of the EVN. (JIVE support scientistc)
 - o NME results (JIVE support scientist)
 - o Feedback from last sessions. (JIVE support scientist)
 - o Amplitude calibration. (JIVE support scientist)
7. **Amplitude Calibration**
 - o Review of continuous cal at the stations (Bach)
8. **VLBI backends**
 - o DBBC2 and Fila10G news (Bach)
 - o Other VLBI backends: MDBE, OCTAD news
9. **Recorders: Mark 5, Mark6, Flexbuf**
 - o News/problems (all)
 - o Disk inventory and purchase status (Bach, all)
10. **Stations**
 - o Any news? (All)
 - o Radio Astronomy on the Azores (Barbosa)
11. **eVLBI**
 - o Current status, new stations, 2 Gbps, ... (Verkouter)
 - o Regarding 4 Gbps eVLBI (Kettenis)
12. **JIVE**
 - o Technical Operations and R&D at JIVE, (Verkouter)
13. **Technical Developments**

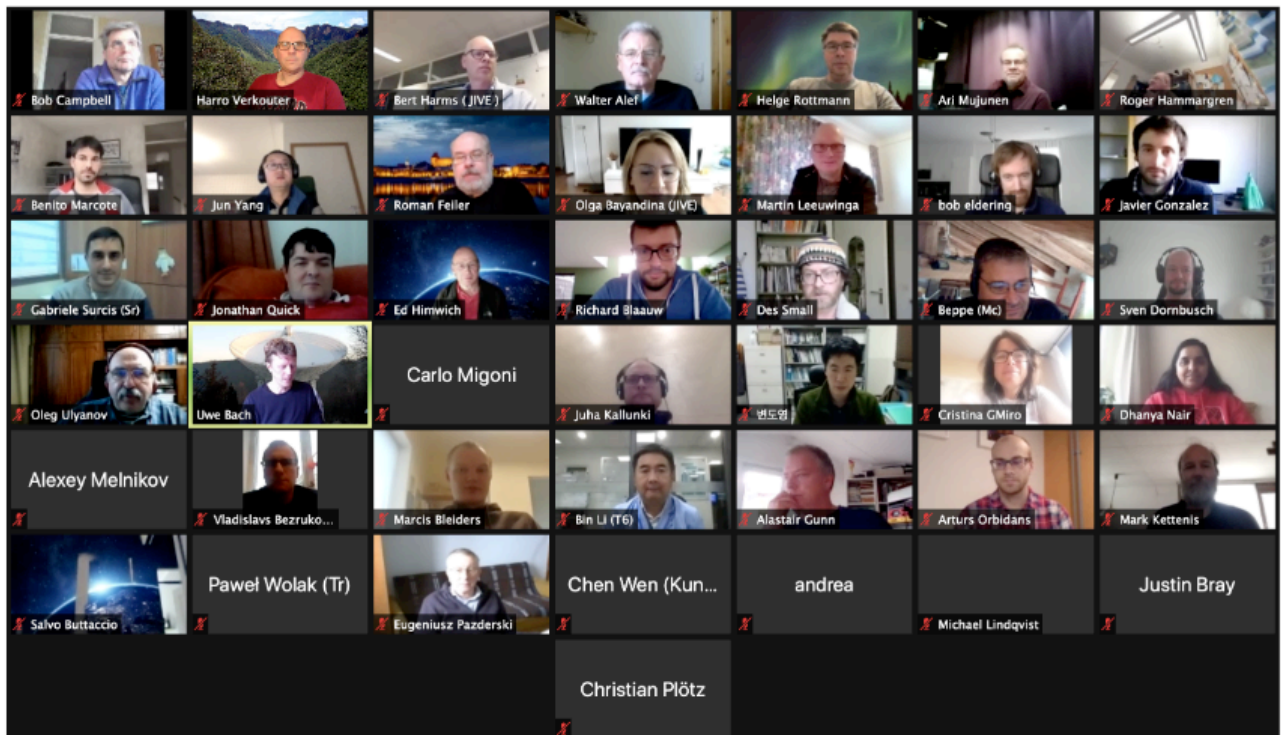
- How to achieve 4 Gbps recording rates. (Bach)
- Available IF bandwidth at all bands, receiver developments (Bach)
- DBBC3. Current status. Backwards compatibility and available firmware (Tuccari)
- Auxiliary scripts & central repository (Bach)
- changes to vlbeer? (Bach)
- **EVN Vision: VLBI20-30, EVN Technical roadmap (Bach)**
- 14. Field System, status and new features**
 - Status and new developments (Ed)
 - FS working group
- 15. Date and place of the next TOG meeting**
 - April 2021?
- 16. AOB**

TOG presentations

- Bach, TOG chair slides
- Byandina, Reliability/Performance of the EVN
- Verkouter, R&D at JIVE
- Kettenis, eVLBI at 4 Gbps
- Barbosa, Azores ENGAGE
- Tuccari, DBBC3 status
- Himwich, FS development

3. PARTICIPANTS

The number of online participants peaked at 47, from 15 countries of Europe, Africa, America, and Asia from a total of 21 institutes. 3 women attended the meeting. Screenshots of the participants list are attached at the end of the minutes.





4. RADIO NET 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_11

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