

EVN Technical and Operations Group Meeting

Granada, Spain, October 4, 2018

Minutes

Participants:

http://www.oan.es/tog2018/show_registered.php

Agenda:

https://radiowiki.mpifr-bonn.mpg.de/doku.php?id=na:sustainability:tog:2018_10:tog-agenda-2018-10

1 Local Arrangements/Opening Remarks

(Vicente, Agudo)

The meeting starts with a short speech by the director, Antxon Alberdi, welcoming everybody and wishing them a good meeting. De Vicente welcomes everybody as well and opens the meeting.

Presentation by Vicente, used throughout meeting: [TOG chair notes](#)

2 Approval and last minute additions to Agenda

De Vicente tells that minutes and other documents pertaining to TOG meetings will be placed on RadioNet pages from now on. Agenda was approved.

3 Acceptance of minutes from last meeting [Minutes Shanghai meeting](#)

Minutes were accepted without comments

4 Review of action items from last meeting

Vicente will move links to new indico.

1. All: beam-maps at L- and C-band and send them to Keimpema
https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Beam_maps
 - Not everybody has done this yet, please do!
 - **Action remains.**
2. All: Upgrade to SDK9.4 first at the correlators then at the stations.

- Keep action for Mark5.
 - **Action remains.**
3. All: 80 Hz continuous calibration. Update the table:
https://deki.mpifrbonn.mpg.de/Working_Groups/EVN_TOG/Continuous_calibration
 - Vicente stresses once again this is very important.
 - **Action remains.**
 4. All: Provide frequency information of the stations to de Vicente
 - **Action remains.**
 5. All: If a station is not buying a FlexBuff, purchase disk packs.
 - **Move** to permanent actions
 - **Remove** action.
 6. Szomoru: ask Keimpema to re-send email to stations requesting beam maps
 - **Action remains.**
 7. Blanchard: collect cases of bandpass dips to present to Tuccari.
 - **Remove** action.
 8. Rottman: define proper release policy for release of firmware versions.
 - According to Rottman there is a policy, which is not being followed.
 - **New action** de Vicente: call Tuccari about this issue
 - **Remove** action
 9. Vicente: Talk to Himwich possibility to inject opacity information in FS logs.
 - Not done.
 - **Action remains.**
 10. Jung: write down instructions for high frequency gain/opacity corrections. Circulate this among EVN members.
 - Done.
 - **Remove** action.
 11. Blanchard: come up with a method to use correction solutions of good stations for bad stations.
 - Deemed impossible.
 - **Remove** action.
 12. Blanchard: compare amplitude calibration results from both continuum calibration scripts.
 - Not resolved.
 - **Action remains.**
 13. All: everybody to switch to DBBC firmware DDC V106.
 - Latest firmware is advised.
 - If reasons not to do so, get in touch with Tuccari and Verkouter
 - The adoption of V106 caused many problems because the firmware did not work correctly.
 - **Action removed.**
 14. All: everybody to use last Fila10G firmware.
 - Last firmware is advised. Get in touch with Tuccari and Verkouter if there are reasons for not doing so.
 - **Action remains.**
 15. Bach: schedule 43 GHz test in May.
 - Was attempted, but did not work out, Sh was busy.
 - Will now be scheduled in November, Tianma, KVN, Yebes

- De Vicente asks about Robledo, but no VLBI friend: leave Rb out
 - **Remove** action.
 - **New action**, Bach: schedule 43 GHz test in November.
16. de Vicente: Contact stations and work out how to ship RFI measurement equipment (BRAND project).
- Not done.
 - Only Ventpils is interested.
 - **Remove** action.
17. Szomoru: contact KVAZAR network when the next eVLBI session date is known for possible participation.
- Not done.
 - Action **remains**.
18. Bach: find out which stations can match the observing band for 4 Gbps observing.
- Bach looked at freq page, there is some 300 – 400 MHz overlap.
 - **Remove** action.
19. Blanchard: setup EVN Github.
- Done.
 - **Remove** action.
 - **New action**: Blanchard send out email to all, announcing Github

5 Review of permanent action items [Permanent action items](#)

Some discussion about EVN website. Work on this is ongoing at JIVE, funded by JUMPING JIVE. All actions stay.

6 Reliability/Performance of the EVN

- The 2 Gbps problem. V105E and V106E DBBC2 firmware (Blanchard, Vicente, all) .
 - De Vicente shows a number of slides illustrating the problem with the e-series
- Reliability/Performance of the EVN (Blanchard)
- NME results (Blanchard).
- Feedback from last sessions. (Blanchard)
- Amplitude calibration. (Blanchard).
- Grafana. A reminder (Vicente)
- Presentation by Blanchard: [EVN Performance and Reliability](#)
- Blanchard reports on DBBC issues. It seems that the firmware has been reporting the same version number for the past 10 years or so, logfiles cannot tell which versions were used in the past. Rottmann mentions that the dip in amplitude looks a bit like a bug in the PFB of the RDBE, where sign and

magnitude were swapped. Tuccari is now working on a v107, another option would be to use the wastro mode (32 channels of 16MHz).

- De Vicente mentions that some stations do not seem to calibrate their DBBC at all, which is not acceptable.
- Some discussion about ports being reset to zero for e-VLBI, this only happens when a sync is done. **New action** Verkouter: talk to Horsley.
- De Vicente: everybody please be more specific when using the feedback web page to report technical problems at stations.

7 Amplitude Calibration

- Review of continuous cal at the stations (Vicente)
 - Surcis: Nt will have continuous calibration this session, Sr soon to follow
- Presentation by Blanchard: [EVN Amplitude Calibration Review](#)
- Bad calibration resulting from issues with DBBC

8 VLBI backends

- DBBC2 firmware: V107 (de Vicente, Bach & all).
- DBBC2 firmware: wastro mode
- DBBC2 firmware: PFB (information from stations)
- Other VLBI backends: MDBE, OCTAD news

Presentation by de Vicente

- V107: lower clock rate from 256 to 128 MHz at the boards. Partially tested by Bach
- Presentation by Bach: [v107 tests](#)
- Bach: firmware loads fine
 - 32MHz: FS complains about non-e version
 - correlation looks good, 32, 16, 8 MHz bit more fall-off at edges
 - cross correlation between DBBCs also looks, close to 100% efficiency, bit statistics ok
 - clock at 128 gives complaints from FS, use 64 MHz, gives 32 MHz bands
 - Now send to stations, tests
 - De Vicente: talked to Tuccari, will look at results of tests
 - De Vicente: should we test both 107 and wastro? General consensus to concentrate on 107 for the time being
 - **New action** Bach: find time slot for tests, November/December, at least 2 tests
 - PFB: need info on coverage of receivers, tunability. Was action, done by Bach.

- MDBE: next year operational
- OCTAD: still in test phase
- De Vicente: would be good to have spare DBBC2s for new stations adopting VLBI and for tests.
- Alef: testing 3 vs 2, next year maybe DBBC2 will free up at Bonn.

9 Recorders: Mark 5, Mark6, Flexbuf

- Presentation by Verkouter (not available)
 - De Vicente shows slide on flexbuff status
 - Some discussion on disk space and Mark6, as VLBA is switching to Mark6. Should discuss this with Brisken, tomorrow

10 Stations

- Presentation by Chibueze, Status on Nk in Ghana (not available)
- Presentation by Sargsyan, [Presentation of ROT- 54/2.6](#)
- Presentation by Marshalov, new VGOS RT-13 antenna (not available)
- Presentation by Jung: [KVN system updates](#)

11 e-VLBI

- Current correlator capabilities and future ones.
 - Estimate: 12 stations at 4 GBps real time
- KVAZAR network integration in the eVLBI. Dates.
 - Unclear. New action Marshalov/Boven: figure out available connectivity/cost for e-VLBI to KVAZAR stations
- 2 Gbps at the remaining stations.
 - Sr: 2Gbps at end of year, Svetloe will be 1Gbps next year. Tianma has a Flexbuff but there may be some problems e-shipping.
- Presentation by Varenius, [eMerlin + EVN status update](#)

12 Technical Developments

- Recent developments in Dwingeloo: White Rabbit and SDR (P. Boven)
 - Presentation Boven: [White Rabbit for VLBI](#)
- Plan for higher incremental recording rates up to 32 Gbps. How to advance.
 - one slide by de Vicente. Alef: use EHT mode for tests. Will be discussed at CBD.
- DBBC3. Current status. Backwards compatibility and available firmware.
 - Presentation Alef (not available)
- Auxiliary scripts. Central repository

13 JIVE

- Presentation by Szomoru: [Technical Operations and R&D at JIVE](#)

14 VLBA

- Will be covered next day during GMVA meeting

15 Field System, status and new features

- Status report, new developments (D. Horsely)
 - Presentation by Horsely: [Field System Status](#)

Himwich listening in via skype.

16 Long term future

- DBBC3 tests & future implementation at the FS
- Review of potential developments in the next 2-3 years
- EVN Science document. Chapter on Technology
 - De Vicente mentions that Venturi is leading the effort, will place the technological chapter on the deki, only available to TOG members
 - Venturi will present the work next week at EVN symposium

17 Jumping JIVE

- WP5. New stations.
 - De Vicente: Armenia sent representative, Greece possibly next year

19 Date and place of the next TOG meeting

- Jodrell Bank, in June. Gunn will find out if possible

20 AOB

- Alef wonders where the representatives of Mc and Nt are. De Vicente: Pietro is ill. Andrea will VLBI friend for Mc and Nt, but could not make it
- Jun: will be his last time at TOG, other responsibilities
- De Vicente: will be his last time as chair, Bach will take over next year

Updated list of action items:

1. **All:** Beam-maps at L- and C-band and send them to Keimpema https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Beam_maps
2. **All:** Upgrade to SDK9.4 first at the correlators then at the stations.
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4. **All:** provide frequency information of the stations to de Vicente
5. **Szomoru:** ask Keimpema to re-send email to stations requesting beam maps
6. **Vicente:** talk to Himwich about possibility to inject opacity information into FS logs.
7. **All:** everybody to switch to DBBC firmware version 106
8. **All:** everybody to use latest Fila10G firmware
9. **Szomoru:** contact KVAZAR network when the next e-VLBI date is known, for possible participation
10. **de Vicente:** call Tuccari about release policy for release of firmware versions
11. **Bach:** schedule 43 GHz test in November 2018
12. **Blanchard:** send out email to all, announcing EVN Github
13. **Verkouter:** talk to Horseley about ports being reset to zero for e-VLBI
14. **Bach:** find time slot for tests of v107, November/December 2018, at least 2 tests