TOG web pages

EVN pages:

http://www.evlbi.org/

Radionet wiki:

http://www.radionet-eu.org/radionet3wiki/doku.php?id=na:eratec:tog

MPIfR Deki:

https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG

Agenda

http://www.radionet-eu.org/radionet3wiki/doku.php?id=na:eratec:tog:tog-meeting-06_2:tog-agenda-sept2016

Action Items

- **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
- **All:** Upgrade to **SDK9.4** first at the correlators then at the stations.
- **All:** 80 Hz **continuous calibration**. Update the table:
- https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Continuous_calibration_%2880_Hz%29
- **All**: contact Vicente for explanation on method how to improve K-band calibration using **sky-dips**
- **JIVE**: set up a **wiki** page, summarizing problems per station.
- **Vicente**: Vicente: move action "All fill out & review the table with frequency information in the TOG wiki to permanent action items:
- https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Frequency_ranges_for_2%2F%2F4_Gbps
- **All**: measure discrepancy between actual tracking of source and log information.
- **All**: provide ANTAB and RXG files to correlator.
- **All**: stations provide correct numbers of disk inventory.
- **Campbell**: to update tables of disk inventory

Action Items

- **All stations** that wish to to participate in 2 Gbps e-VLBI: have a **functional BBC proxy** before the call for proposals in May.
- **Verkouter**: send out description of DBBC proxy system.
- **Mc, Ef, Ys**: send FR028 data to Campbell.
- **Vicente**: organise a 4 GHz PFB test before end of 2016.

Action Items

Tables with current status at stations:

https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Continuous_calibration_(80_Hz)

https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Beam_maps

Permanent Action Items

- https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Permanent_Action_Items
- Contact information
- EVNtech e-mail exploder
- TOG-meetings
- The block schedule
- EVN disk-pack pool
- Disk-pack shipment
- GPS-Maser reading
- In advance of session
- Session preparation
- During sessions
- Post session feedback
- Post-processing
- e-VLBI
- EVN spare parts
- Receiver Frequency Information

DBBC status

https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/DBBC/Status_in_the_EVN

Mark5 status

http://mark5-info.jive.nl/

Needs some update (for example: Sr is not listed)

Disk inventory & purchase status

Disk space availability (stations+correlators)
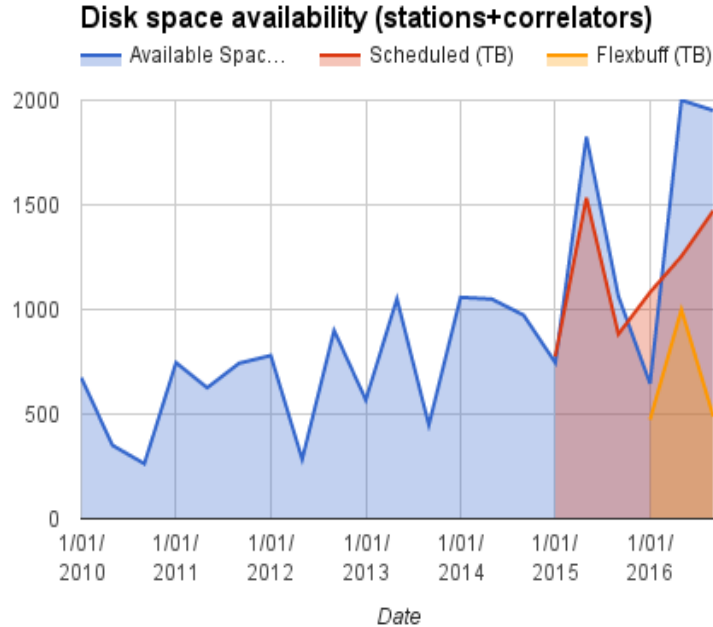
Per station

(mode)

2015-1: **55 TB**   Op. ef. ~ 43 %

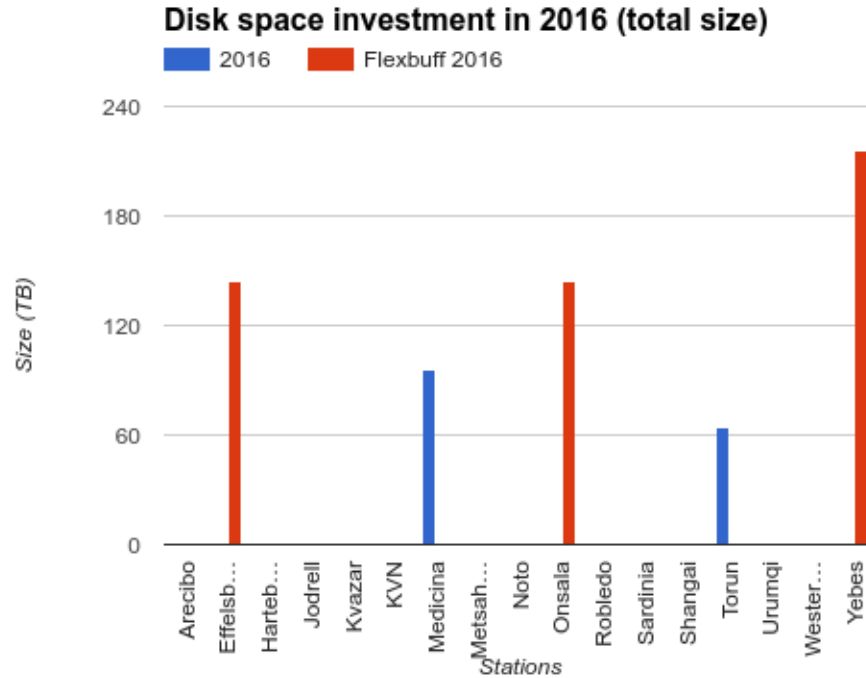2015-2: **120 TB** Op. ef. ~ 50 %

2015-3: **68 TB**   Op. ef. ~ 38 %

2016-1: **60 TB**   Op. ef: ~ 40 %

2016-2: **50+27**   Op. ef: ~ 53%

2016-3: **96 TB**

Disk inventory & purchase status

Disk space investment in 2016 (total size)

Disk investment

- To maintain space for EVN sessions the CBD suggested to spend 7000 € / year for disk space.
- To increase operational efficiency, an additional 4000 € investment was required.
- Investment during 2016 was low.
- Please fill in **both** tables:
- https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Disk_Inventory

Disk space in the future

- How to take into account disk space contributions per station when using Flexbuff or Mark6?

  - **Onsala**: Flexbuff (64/324 TB + 144 TB at JIVE)

  - **Effelsberg**: Mk6   (128 TB + 144 TB at JIVE)

  - **Yebes** (216 TB + 144 TB at JIVE)

  - **Hartebeesthoek** (144 TB + 144 TB)

  - **Mc** ?

  Please fill in:

  https://deki.mpifr-bonn.mpg.de/index.php?title=Working_Groups/EVN_TOG/Mark6%2F%2FFlexbuff_status

Flexbuff cost

- Typical unit:
  - 2x64 bits CPU
  - 2x10 GbE ports
  - 36 disk (4 or 6 TB or 8 TB) chassis   144 (110) TB / 216 TB / 288 TB
  - 32 Gb RAM
- Fila 40G + expansion chassis (54 disk) can be used as Flexbuff
- Parts list agreed with JIVE for correlator unit
- Cost:
  - 17 k€ (216 TB, Ys), 30 k€ (Fila 40G - 324 TB, On)

2 Gbps (eVLBI)

2 Gbps:
- 2 x 256 MHz (32 MHz / channel)
- DBBC2 (4 COREs)
- eVLBI (DBBC2 + Fila10G)
- DDC mode, V105E
- TE118 tested the DBBC proxy and was successful (see Harro's email).
- Ef, Hh, Mc, Nt, On and Ys can do 2 Gbps eVLBI
- Correlator can handle 8 stations at 2Gbps or 15 at 1Gbps
- Setup:
  - Set the destination IP address and MAC to none and
  - *fila10g=destination 1 none*
  - Provide the Proxy IP address to JIVE

Towards 4 Gbps operations

- **Hardware requirements**:
  - 512 MHz x 2 pols
  - DBBC2 (2/4 COREs) + Fila10G   (2 COREs > no cont. cal)
  - PFB firmware
  - Common LO at the stations (Please fill in the table at the TOG wiki)
- Tests:
  - FR033 (2 Gbps), FR034 (4 Gbps), FR035 (2), FR036 (4): V15_2, FS 9.11.13
  - FR037 (4 Gbps): V16. FS 9.11.15
  - Fringes in all cases
  - Issues related to the "slope decrease", time synchs and shapes of the channels (Jon devoted some time to investigate this)
- Disk requirements increase by ~ 4
  - (Flexbuff, Mark6 or diskpack purchases)

Towards 4 Gbps operations

- Need to add FS support for continuous cal to PFB (but it requires 4 COREs)
- Disk requirements increase by ~ 4
  - (Flexbuff, Mark6 or diskpack purchases)
- Once tests demonstrate PFB mode at 4 Gbps works the CBD will decide upon the availability at the EVN. Goal: 2017
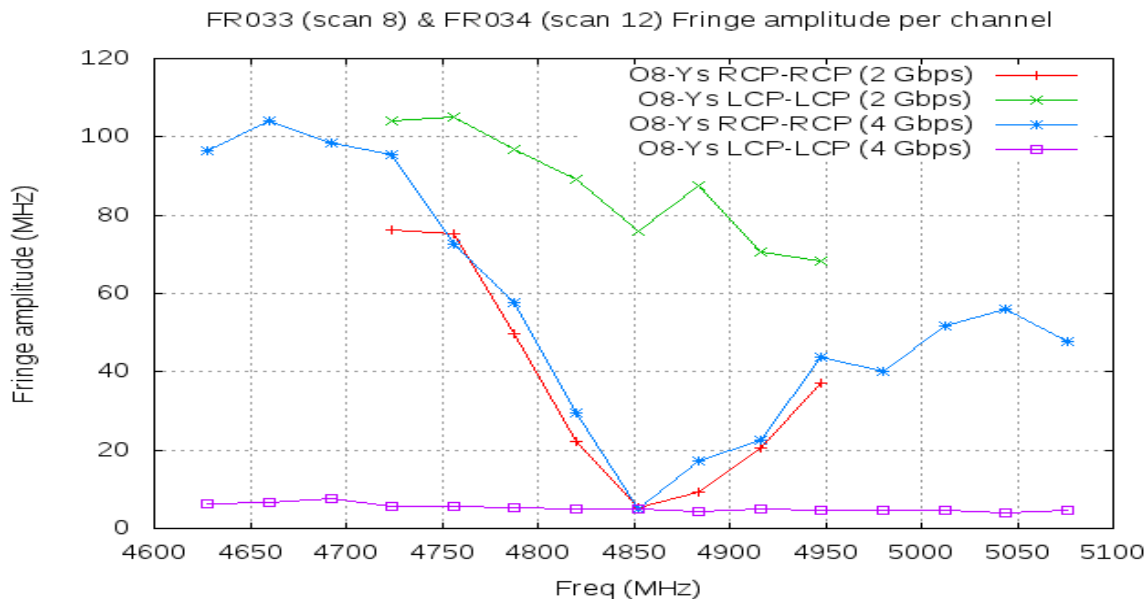
VGOS lessons
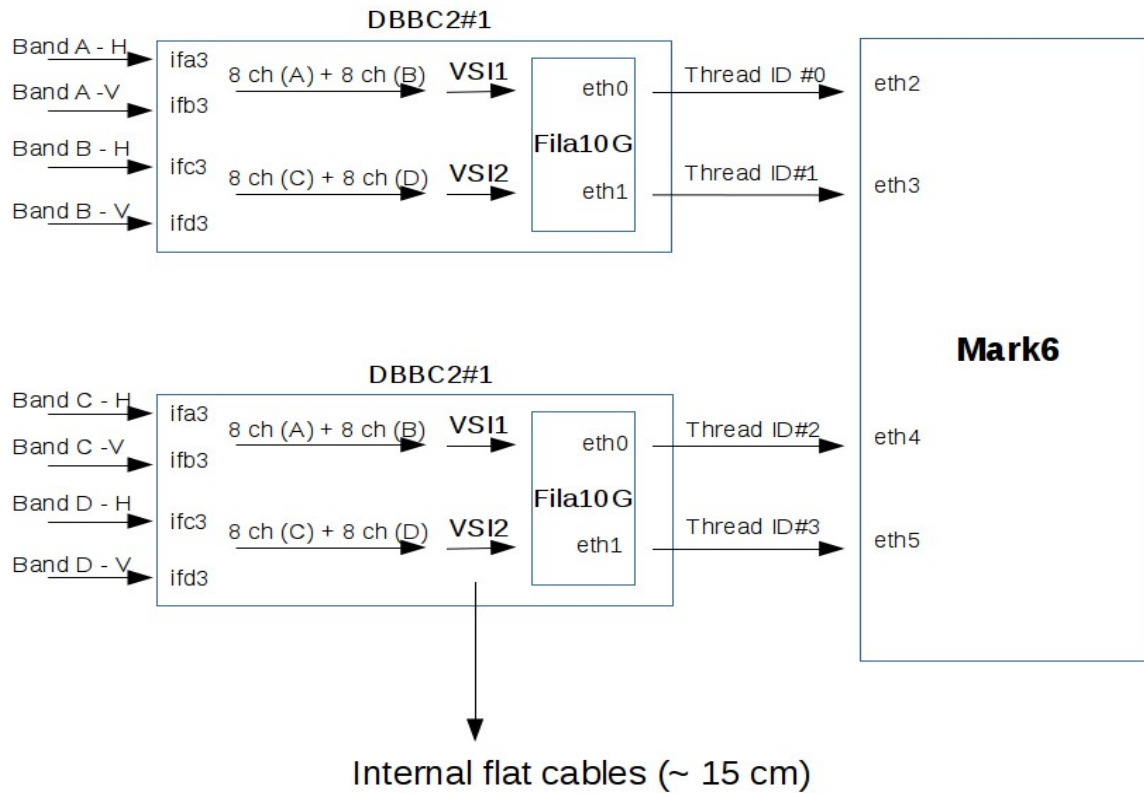
VGOS lessons

- **DBBC Issues (associated to V15 PFB):**
  - The central slope decrease
  - Fix: symmetric line calibration (V15_2) [may be not stable] or usage of V16

FR033 (scan 8) & FR034 (scan 12) Fringe amplitude per channel

VGOS lessons

- **DBBC Issues (associated to V15 PFB):**
  - Timing issues (seen as phase cal phase jumps)
    - Fix: vsi_align=1
  - File sizes not stable (missing frames)
  - In some stations (not seen at Ys): power levels get stuck
  - Power levels not flat across the channels (the band)

VGOS lessons

- **Mark6 issues:**
  - dplane 1.21
  - Time required to gather different threads (speed the process => stop dplane)
  - Space required to store the gathered scans: Usage of one (of the existing 4) diskpacks as a RAID
  - Too many big scans to e-transfer them. Each 24 hour session may require 36 TB
  - Need to send atoms instead of bits to the correlator.