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:tog-agenda-feb2016

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
- **Lindqvist** to talk to Kvasar friends about possibility (and need) to provide **Tsys**.
- **Szomoru** to send out **document** to all stations dealing with the upgrade of Mark5 to **Wheezy OS** and **SDK 9.4**.
- **All**: contact Vicente for explanation on method to improve K-band calibration using **sky-dips**.
- **Himwich**: implement **dbbc=version** & **fila10g=version** in sched_initi or exper_initi
- **Verkouter**: implement **jive5ab=version** query
- **Himwich**: implement **jive5ab=version**
- **JIVE**: set up a **wiki page** summarizing **problems** per **station**. Stations must give response before each TOG

Action Items

- **Campbell, Quick, Gunn, Himwich & Vicente** re-think way of distributing schedules to prevent **wrong schedules** from being observed.
- **Vicente** to send **script** he wrote for similar purpose as described in action item 9.
- **Vicente** to attempt to raise **priority** of **VLBI** at **Jb** at the CBD.
- **All**: fill out & review the table with **frequency information** in the TOG wiki: https://deki.mpifr-bonn.mpg.de/Working_Groups/EVN_TOG/Frequency_ranges_for_2%2F%2F4_Gbps
- **Campbell** to come up with realistic numbers for **disk space needed**, both for disk-shipping and Flexbuff stations.
- **Quick, Campbell, Vicente** to discuss **SCHED**, contact Amy Mioduszewski and Cormac Reynolds about **pointing sector** and **DBBC version handling**.

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

Radionet 4 WP4.1

- Draft being prepared.
- It will be presented in the next months.
- If approved it will start in 2017
- WP 4.1: TOG and GMVA Technical Group meetings.
- Products to release: documentation, minutes and sort of measure of the quality of the network and observations
- WP 4 leader: Hans van der Marel

- Madrid (feb 2016) and Saint Petersburg (sept 2016) meetings **not funded** by Radionet3

Continuous calibration

- antabfs for continuous cal:
  - The correlator can extract continuous cal. Do stations need to produce an antab file then?
  - Ef has a local script
  - Ys is using a python script for the DBBC cont_cal

https://deki.mpifr-bonn.mpg.de/@api/deki/files/8814/=antabfs_ys.py

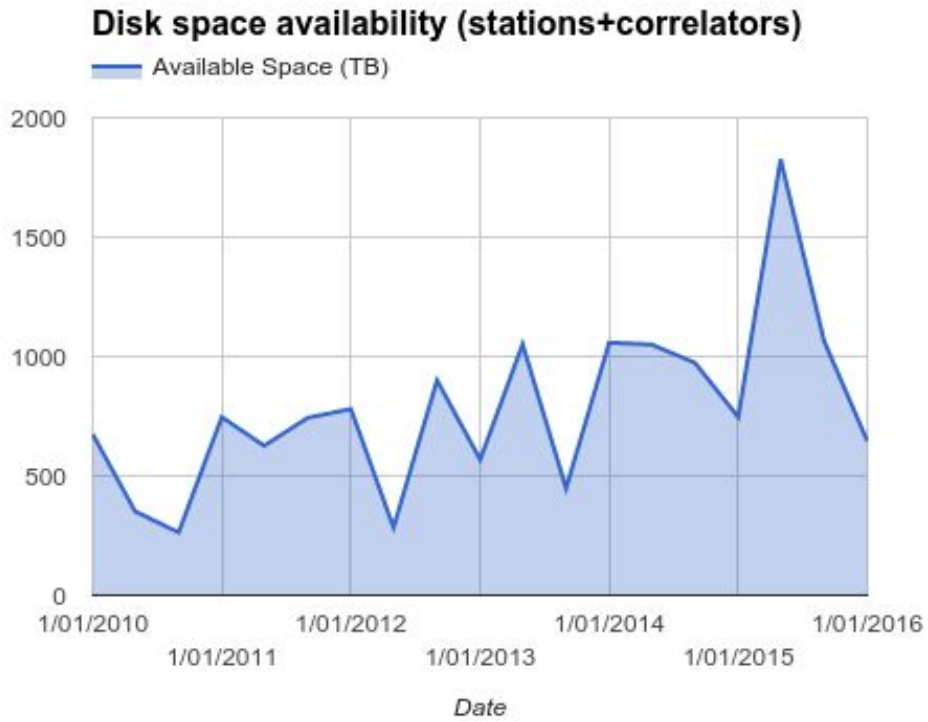
DBBC status

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

Mark5 status

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

Disk inventory & purchase status



Per station

(mode)

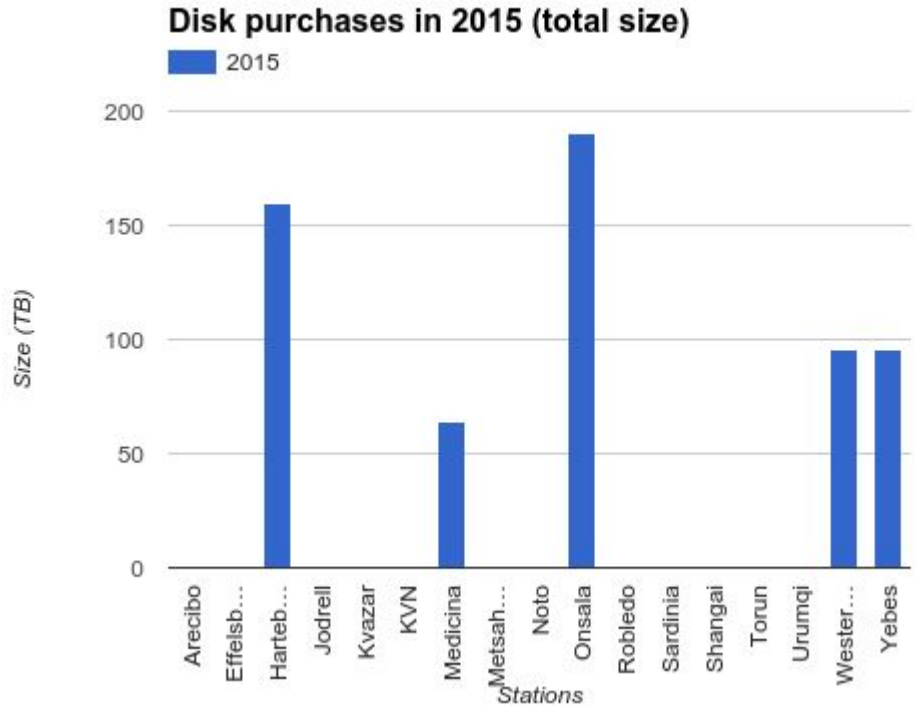
2015-1: **55 TB** Op. ef. ~ 43 %

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

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

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

Disk inventory & purchase status



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 2015 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)
  - In 2016:
    - **Yebes** (144 TB + 144 TB at JIVE)
    - ?

Please fill in:

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

Flexbuff costed plan

- Typical unit:
  - 2x64 bits CPU
  - 2x10 GbE ports
  - 36 disk (4 or 6 TB or 8 TB) chassis 144 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:
  - 15 k€ (144 TB, Ys), 30 k€ (Fila 40G - 324 TB, On)

2 Gbps (eVLBI)

- **2 Gbps**:
  - 256 MHz x 2 (32 MHz / channel)
  - DBBC2 (4 COREs)
  - eVLBI (DBBC2 + Fila10G)
  - DDC mode, V105E

  - TE116 successful with VDIF single threaded 800 bits (Mark)
  - Issues:
    - VDIF multi thread (corner turned) uses 2000 byte, not 8000 byte
    - JIVE has no way to stop/start the flow: a proxy (Harro)
  - TE117 successful (Mark):
    - VDIF single threaded/multi channel 8000 bytes/frame.
    - VDIF multi-threaded/single channel 2000 bytes/frame.

PFB mode

- **PFB**:
  - 2 x 512 MHz (VSI outputs or Fila10G optical fiber)
    - 500 MHz: (16 channels x 32 MHz) -> VSI1
    - 500 MHz: (16 channels x 32 MHz) -> VSI2
  - or 512 MHz (VSI output or Fila10G optical fiber)
    - 500 MHz (flexible distribution of channels on VSI1 or VSI2)
  - DBBC version: v15_1 (January 2016)
  - Format: Mark5B or VDIF
  - It requires the same LO at stations with same Nyquist zone (512 MHz)
  - May use a different LO, but spaced multiples of 32 MHz (< 512 MHz)
  - It is possible to have stations with Nyquist zone 1 and stations with Nyquist zone 2 (LO will be different)

PFB mode

- **PFB**:
  - Supported by FS 9.11.9 (beta version):
    - Successfully tested on **FR028**: Ef, Mc, Ys
      - Drudg generated a correct prc file
      - There may be some issues with odd effects on the fringes (Bob)
      - Should undergo further testing
    - Supports the flex mode (free arrangement of channels)
    - Does not have radiometry yet, but it will (Ed).
    - It will not support continuous calibration in the short-term
  - Sched: something to discuss about
    - FR028 VEX file required a manual modification

Towards 2-4 Gbps operations

- **4 Gbps**:
  - 512 MHz x 2 pols
  - DBBC2 (2/4 COREs) + Fila10G
  - PFB
  - Common LO at the stations (Please fill in the table at the TOG wiki)
  - Goal: 2016?

- Disk requirements increase by ~ 4
  - (Flexbuff or diskpack purchases)