Station report for EVN TOG meeting May 5, 2020
Irbene station, Ventspils.

RT-32 radio telescope.

RT-32 since last report have been working quite stable and participated in all EVN disc and e-VLBI sessions. Unfortunately, during disc session of February 2020, we had to cancel a few experiments due to high wind speeds at Irbene.

RT-16 radio telescope.

Currently RT-16 serves as backup instrument for VLBI and single dish observations at C/M/X frequency bands, in case when there are issues or maintenance at RT-32. Receiver, H maser and DBBC of RT-16 are working stable.

VLBI equipment

RT-32:
Field System: 9.13.2
DBBC: 4xADB3L, Internal Fila10g, DDC,107, November 14 2018

Note: We noticed that latest firmware (DDC 107 beta5 DDC,107,October 28 2019) does not work acceptable with our RT-32 DBBC.
See: http://old.evlbi.org/tog/ftp_fringes/N20SX1/scan10/index.html for example. One can notice reduced fringe amplitudes for LCP channels. Also, Tsys for those channels were very high. Phase calibration and IF levels were okay. When changed back to beta4, everything seems okay (see rest of the EVN session). No issues are noticed in case of our RT-16 DBBC.

RT-16:
Field System: 9.13.2
DBBC: 4xADB2, External Fila10g (only one VSI connection right now), DDC,107,October 28 2019

Flexbuffs:
1. Capacity: 8 TB, jive5ab: 2.9.0 64bit on Ubuntu 19.10
2. Capacity: 288 TB (36x8TB), jive5ab: 2.9.0 64bit on Debian 9.0

Continuous calibration

We finally tested continuous calibration injection module with RT-32 C/M/X band receiver together with DBBC and it seems to work fine. Probably we will try to use it for the first time during next C/M band e-VLBI session. We also reduced Tcal level down to 1..2 Kelvins.

Developments

Currently design of new L/S band feed and cryogenic front-end is ongoing. It will be wideband, dual circular polarization receiver (approx. 1.2 to 2.35 GHz) with expected telescope SEFD in range of 200…300 Jy which is 3x better than current warm design.