Station report for EVN TOG meeting,
November 24, 2020.
Irbene station, Ventspils.

Irbene Ir – RT-32 radio telescope
Since the last report, RT-32 has been working quite stably and participated in all EVN disc and e-VLBI sessions. Both cryogenic C/M/X and "warm" L-band (2 circular polarizations) receivers are available for VLBI observations.
Irbene Ib – RT-16 radio telescope
Currently RT-16 serves as backup instrument for VLBI and single dish observations at C/M/X bands, in case if there are issues or maintenance at RT-32. Receiver, H maser and DBBC of RT-16 are working stably.
Developments:
The development of new L/S band feed and cryogenic front-end for RT-32 is continued. It will be wide band, dual circular polarization receiver (approx. 1.2 to 2.35 GHz) with expected telescope SEFD in range of 200 - 300 Jy which is 3 times better than the current warm design.

VLBI equipment status
RT-32:
Field System: 9.13.2 (Debian Wheezy).
DBBC: 4xADB3L, Internal Fila10g, DDC v107;
Continuous calibration: implemented on RT-32 C/M/X band receiver.

RT-16:
Field System: 9.13.2 (Debian Wheezy).
DBBC: 4xADB2, External Fila10g (only one VSI connection right now), DDC v107

Flexbuffs:
1. Capacity: 32 TB, jive5ab: 3.1.0 64bit on Ubuntu 20.04.1 LTS
2. Capacity: 288 TB (36x8TB), jive5ab: 3.1.0 64bit on Debian 9.13 Strech.
All EVN recordings are done with Flexbuffs and data transfer to Irbene Flexbuff at JIVE works fine.
Backup units: two Mark5c+ Glapper, jive5ab: 2.8.1 64bit, AMAZON,10GbE;

Miscellaneous
- In September of 2020, VIRAC team demonstrated first successful continuum flux measurements towards Ultra Compact H II (UCHII) zones associated with massive protostars with active methanol 6.7 GHz masers employing single baseline interferometric observations with RT-32 and RT-16. The obtained sensitivity results are close to theoretical system noise level (6 mJy for 120 s). Calibrator flux measurements were close to values obtained by other observatories. We are going to establish regular and sensitive continuum flux measurements for UCHII zones and probably also for AGN, microquasars and other potential targets. SFXC correlator was used for data correlation. Currently, SFXC correlator is deployed on VIRAC High Performance Computing cluster with following configuration: - 9 nodes; 2 X Intel Gold 24 cores processors, RAM 384 GB, 240 GB SSD per each node; all nodes are connected by 40 Gbs Infiniband internal network and to 10 Gbs international link.
- VIRAC is ready to allocate human resources for tasks related with maintenance and development of Field System software in the next years, if such actions will be required for EVN.

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