

SRT station report

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This report covers the period between October '18 - May '19

Antenna

The system tests, calibration, and re-commissioning of the antenna after the heavy maintenance of the active surface system is concluded.

The Sardinia Radio Telescope has been awarded of one of the grants recently announced by the Italian Ministry of Education, Universities and Research (MIUR) aimed to enhance research infrastructures, pursuant to Action II.1 of the National Operative Programme – Research and Innovation 2014-2020.

Thanks to this grant Sr will be equipped with new high-frequency receivers and backends within the next 3 years. The new receivers are the a simultaneous microwave compact triple-band receiving system, a multi-beam cryogenic receiver in W Band (75 – 116 GHz), a multi-beam cryogenic receiver in Q Band (33 – 50 GHz), and a millimetre camera (80 – 116 GHz). The backend DBBC3 will be purchased and installed at Sr. In addition, a metrology system will also be installed to allow high efficiency performances at the highest operating frequencies.

Receivers

The L/P-band receiver, the K-band and the M-band receivers are available.

The hardware required to implement continuous calibration (80Hz) is ready. We plan to install and test the system soon.

VLBI sessions

Sr successfully took part to the EVN sessions III - 2018 and I - 2019 with all the available and scheduled receivers (L-, M-, and K-band) and fringes were obtained at all bands during the ftp-fringe tests. SRT was able to take part partially to the EVN session II - 2019 (missed part of exp. In L-band, and all in M-band and K-band) due to an antenna control problem that will be solved in 2-3 weeks.

Sr took part to four Out-of-session observations on the 27th of January 2019 (2 exp. at L-band), on the 15th of March 2019 (1 exp. at K-band), and on the 8th of May 2019 (1 exp. In K-band). Sr took also part to one ToO on the 13th of March 2019 (M-band).

Sr took part to the e-VLBI experiments on the 20th-21st of November (L-band) at 512 Mbps and on the 22nd-23rd of January (L-band) at 1024 Mbps.

VLBI terminal and Field System

Firmware and softwares:

Field System: fs-9.13.1-rc2

DBBC: DDC (v107_300119), PFB (16)

Fila10G: v4.1_231118

Jive5ab: 2.8.1

Antabfs: antabfs_ys

A Flexbuff unit has been installed both at JIVE and at Sr and it is now available for observations. Indeed, EVN session II - 2019 was successfully recorded with the Flexbuff.

Fiber link

The extension to the 10 Gbps fiber link was done on the 29th of December 2018 and was successfully tested and used during the e-VLBI run in January 2019.