Noto station

G. Tuccari
30/09/2014

1) Antenna and receivers:
The installation of the mechanical parts for the frequency agility have been performed by the end of 2014 summer and the telescope surface have been cleaned and re-painted. The complete installation of the receivers, to make operative the frequency agility, will take place after the autumn 2014 EVN session.

The two receivers operating in the range 80-100 GHz for the secondary focus and purchased from IRAM will not be installed for now in antenna because of lack of funds. Indeed a dedicated tertiary mirror for properly focusing the beam is necessary so as it is advised the replacement of the existing secondary mirror.

The new broadband 1-16 GHz receiver is under construction and will be used in the VGOS first observations in the beginning of 2015. It will be adapted to the antenna optics with a tertiary mirror.

The 22GHz receiver is now back operative with two polarizations and will be examined to evaluate whether it could be upgraded to operate with 4GHz bandwidth to be used with the new DBBC3 broadband backend.

2) H-Maser:
The new maser has been installed in October, while the old EFOS-5 has been modified to be maintained still active in parallel with the new one. Additional equipment is going to be installed in order to have a continuous comparison between the two atomic clocks. The new atomic clock station is so able to assure a much improved, reliable, continuous service.

3) eVLBI:
The connection at 10Gbps was activated in October 2013. A new 10G network infrastructure has been installed in the station so to join the 10G router to the digital backend, including those equipment placed in the vertex room. Indeed the new acquisition system DBBC3 operates with multi 40G links and will be placed in the antenna vertex room and connected to the control room and external network through a set of optical fibers.

4) DBBC:
The DBBC2 system is now active as main VLBI backend and the MK4 terminal has been switched off. In the next few months it will be removed, because some of its parts are not more operative. The Ethernet VLBI interface FILA10G is now available, so having available the external 10G connection, e-VLBI experiments up to 4 and 8 Gbps are today possible with Noto.

A DBBC3 unit is under construction for the station having 2 IFs 4GHz wide. The first use of it will be for VGOS observations with the broadband receiver and with the wide band 22GHz. The DBBC3 includes the FILA40G units that is able to perform 10GE and 40GE packets operations and disposes of a poll of disks to record up to 32Gbps.

Last year Noto successfully joined an observation of the millimetric VLBI network GMVA at 43 GHz adopting the DBBC wide band polyphase configuration (PFB). This year an additional participation to these network observations was carried out in May.