

Medicina Station Status Report

Alessandro Orfei, Giuseppe Maccaferri, Andrea Orlati

Abstract General information about the Medicina Radio Astronomy Station, the 32-m antenna status, and the staff in charge of VLBI observations are provided. Updates to the hardware were performed and are briefly described.

1 The Medicina 32-m Antenna: General Information

The Medicina 32-m antenna is located at the Medicina Radio Astronomy Station. The station is run by the Istituto di Radioastronomia and is located approximately 33 km east of Bologna. The Consiglio Nazionale delle Ricerche was the funding agency of the Istituto di Radioastronomia until the end of 2004. Since January 1, 2005, the funding agency has been the Istituto Nazionale di Astrofisica (INAF). The antenna, which was inaugurated in 1983, has regularly taken part in IVS observations since 1985 and is an element of the European VLBI network.

A permanent GPS station (MEDI), which is a part of the IGS network, is installed in the vicinity. Another GPS system (MSEL) is installed near the VLBI telescope and is part of the EUREF network.

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2 Current Status and Activities

- **Antenna** — In May 2015 a long maintenance period was concluded by painting the antenna structure and by the restoration and painting of the antenna basement. The painting of the primary mirror surface is scheduled for 2017. The rail track is at the end of its life, showing cracks and wear. Its substitution is scheduled for 2017.
- **VLBI back-end** — The DBBC firmware version is currently DDC V105₁ and V105_{1E}, PFB v15₂. The release 2.8.0 of jiveab is currently installed. The purchase of a couple of flexbuff systems is scheduled in 2017. The overall system DBBC+FILA10G+Mark5C is running smoothly now; the VDIF data format was definitively adopted.
- **e-VLBI** — Medicina is routinely running e-VLBI experiments. The last update is that first fringes at 4 Gbit/sec in C band, 512 MHz dual polarization bandwidth, PFB firmware 32x32MHz, 2 bit sampling were obtained. DBBC proxy software was installed in our Mark5, but an APU system has been acquired.
- **Field System** — i) Many releases were installed in these last two years. We are currently running release 9.11.18; ii) jsched was installed and made available for the operators.

3 Geodetic VLBI Observations

In 2015–2016, Medicina participated in 42 24-hour routine geodetic sessions: 20 IVS-R4, six IVS-T2, seven EUROPE, seven R&D, and two VITA experiments.