Robledo Station Report

EVN TOG Meeting June 2010
Metsähovi Observatory, Finland

1. Hardware and Software status.

Currently the DSN supports EVN, Global and SGP observations using the Field System version FS-9.9.0 and the Mark5A recorders. Our current Mark5 s/w version is the following:

```
DTS_id? 0 : Mark5A : 2005y147d17h : 1 : Mark560a : 1 : 1 : 2.7x : 0xb8 : 0x19 ;
mk5/!OS_rev1? 0 : "Linux version 2.4.20-8 (bhcompile@porky.devel.redhat.com) (gc" ;
mk5/!OS_rev2? 0 : " version 3.2.2 20030222 (Red Hat Linux 3.2.2-5)) #1 Thu Mar 13 17:54:28 EST 2003" ;
mk5/!SS_rev1? 0 : "BoardType PCI-816VXF2, SerialNum 8270, ApiVersion 5.21, ApiDateCode Apr  7 2005" ;
mk5/!SS_rev2? 0 : "FirmwareVersion 10.84, FirmDateCode Apr 06 2005, MonitorVersion 6.02, XbarVersion
3.18, AtaVersion 1.05, UAtaVersion 0.00, DriverVersion 623" ;
form/m,16,1:2,off,,3,pass,41,0x44,okay
```

2. Calibration status.

a. Calibration signal. A local implementation developed by Robledo RA group using the DSN Network Monitor and Control (NMC) system allows us to calibrate two frequency bands simultaneously (dual frequency experiments). The Equipment Activity Controller (EAC) software is still limited to control the calibration signal (noise diode) at only one frequency band or polarization.

b. GPS data. A station dependent software limitation prevents us to provide gps-fmout data continuously during the experiments. We only provide gps-fmout values at start and end of the observations.

3. Future Plans.

DSS-14 Goldstone 70 m antenna is currently stopped from March-November 2010 for *life extension* maintenance tasks, including the replacement of the four elevation bearings and depot level maintenance.

The DSN will upgrade the MARKIV DATs with hardware similar to the Wide band VLBI Science Receiver (WVSR). The WVSR is a digital front-end developed at JPL, currently used to support spacecraft navigation at the DSN and for Radio Science JPL projects. It will likely use the same digitizing front end as the WVSR and different candidates for the digital backend are currently being investigated. All the choices are being targeted to support Mark5C recording over 10GE interfaces. Some working prototypes could be ready during this year.

Robledo e-VLBI plans: *last mile* Gbps coverage problem from Robledo to the Spanish Research and Educational Network (RedIRIS) not yet solved.

4. Robledo support to EVN observations.

For EVN session#1 2010 Robledo participated in following observation:

GC034A (S/X-bands; DSS-63 70 m antenna): successful 512 Mbps Mark5 recording; both bands were calibrated; system temperature file was derived using the *antabfs* application and sent to the EVN archive with the observing log including flagr information, and the uvflag file.

For EVN session#2 2010 Robledo did not participated in any observation.

Bonn correlator informed about negative fringes detection for GB065B (Q-band LCP) observation on EVN session#2 2009. This was first VLBI test carried out with the Q-band receiver at DSS-54 34m beam waveguide antenna. It was found that Q-band downconverter (MMS) was not properly locked to the station frequency standard.

Best regards,

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