EVN Performance and Reliability

Dmitry Duev, JIVE

Highlights (s2/14 – s2/15)

- T6, Jb, Wb, Ys tested their DBBC backends
- Successfully correlated VDIF data from On, Ef, Hh

NME Results & Feedback from user experiments: Session 2015-2

L-band

- Ef: strong RFI due to IRIDIUM satellites in the range of 1616 to 1624 MHz

C-band

- T6: Poor sampler statistics
- Wd: No fringes found
- Ar: Lots of polarization leakage

X-band

- Bd had a warm LCP receiver

Q-band

- Nt: the Q-band receiver is not working because problems with the new frequency agility. No Q-band observations in this session.
- Ys: during correlation we applied a LO offset of -0.296 Hz that produced fringes
- Mh: LCP and RCP polarization swapped

NME Results & Feedback from user experiments: Session 2015-1

L-band

- Nt: The L-band receiver was not functional for the entire session
- Sr: had problems with the DBBC module, solved before user experiments
- Ar had problems with the disk pack and they started about 2 min late. Bad sampler statistics for both FTP scans in N15L1
- Ef: Did not observe due to a broken 18cm receiver in EG078C, used a 21cm 7-beam receiver in GN002A

M-band

- Wd: No fringes found; bad sampler statistics in N15M1
- On: Swapped sign and mag in Ch15 in N15M1; no Tsys measurements in EB052E

C-band

- Wd: No fringes found
- Wb had a backend problem solved before user experiments

NME Results & Feedback from user experiments: Session 2014-3

L-band

- Sh had linear pols
- Sr had a faulty hard-drive in one module after the second ftp-scan
- Jb started late in GP053C due to faulty channel on receiver, which required new receiver to be installed

M-band

- Nt had a damaged disk-pack, no disk-data available

C-band

- Sv: The C-band RCP front-end receiver did not work during the entire session.
- Ef observed with an outdated schedule in GP053B/C
- Jb missed GJ014 due to high winds
- On missed F13C2 and most of EG084A due to high winds

X-band

- Sh did not provide useful LCP data
- T6 was on maintenance in N14X1

Q-band

- Ef did not provide good data due to Q-band receiver problems in N14Q2
- Nt observed only about half the program
- Kt failed because of an antenna hexapod problem in N14Q2 and GB075B
- Mh had an RCP receiver not working properly in N14Q2 and GB075B

NME Results & Feedback from user experiments: Session 2014-2

L-band

- Jb2 had an incorrect LO setting, which was fixed after scan 11 in N14L2. Bad calibration due to incorrect nominal SEFD. Used MkII instead of Lowell for the entire session
- Sr had calibrated correlation amplitude lower than expected in N14L2
- Nt used an outdated schedule (v2 instead of v3) in N14L2
- T6 and Td(=T6_DBBC) had swapped pols in several subbands; fixed after scan 11
- Ro: no Tsys data in EH031

M-band

- Yd(=Ys_DBBC) had an amplitude difference between RR and LL
- On: missed ES072K and GP051D due to a declination motor problem

C-band

- Ys had no good data in subband 3, RCP

K-band

- Ef used the new K-band receiver for some time in N14K2, which had swapped polarization; corrected during the production of the FITS files

P-band

- Jb had a strong crosstalk between polarisations

Q-band

- Nt produced no fringes due to a wrong frequency setup in N14Q1

Additional notes

Notes on Sampler Statistics:

- Has been monitored by the ftp fringe tests since session 1/2010.
- Van Vleck correction is done by JIVE software correlator SFXC.
- Channels with poor sampler statistics were less (almost not) seen thanks to the use of DBBCs.

REMINDER on pre-session checks:

- Contact JIVE support scientist by Skype before start of session (for feedback and to solve potential problems on the fly)
- Contact info usually included on FTP-FT schedules

NOTE for K & Q band observations:

- Please, include basic-general weather information (i.e. clouds/rain/wind) on feedback page. It helps to understand problems during data reduction