

CORRELATOR OPERATIONS REPORT, JIVE
EVN TOG MEETING, October 2014, Cagliari

1 October 2014 (statistics cover 17 Jan - 26 Sep 2014)
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SCIENCE OPERATIONS

Sessions and their Experiments

The table below summarizes projects correlated, distributed, and released from 17 January to 26 September 2014. The table lists the number of experiments as well as the network hours and correlator hours for both user and test/NME experiments. Here, correlator hours are the network hours multiplied by the number of multiple correlation passes required. This definition carries over to the EVN software correlator at JIVE (SFXC), even though it may run faster or slower than real time. Because of its enhanced capabilities, SFXC encounters multiple correlator passes essentially only for phase-referenced spectral-line observations in which the PI wants a smaller "continuum" pass having all subbands with low spectral resolution, in addition to the "line" pass with high spectral resolution.

	User Experiments			Test & Network Monitoring		
	N	Ntwk_hr	Corr_hr	N	Ntwk_hr	Corr_hr
Correlated	62	509	551	15	45	45
Distributed	60	475	502	17	54	54
Released	53	399	427	13	42	42

(1 user experiment from sess.3/2013 abandoned by PI prior to correlation)

The following table summarizes by session the user experiments with activity since the previous report (entries = remaining to do / total). The "(e)" and "(d)" refer to e-VLBI or disk experiments within a traditional EVN session.

	N_to.corr	Corr.hrs	N_to.dist	
session 3/2013 (d)	10/17	88/151 hr	14/17	
Nov-Feb e-VLBI	0/11	0/107.5hr	0/11	3 ToO's
Sess 1/2014 (3) -	0/2	0/17hr	0/2	
Sess 1/2014 (d) -	1/21	10/178hr	1/21	EM110 gated pass
Mar-Jun e-VLBI -	0/9	0/81hr	0/9	3 ToO's
Sess 2/2014 (d) -	11/28	95/256hr	16/28	

Some landmarks since the previous TOG report:

From session 3/2013

Tests with the DVP digital backend at Robledo in a couple L-band experiments. (data = single-thread VDIF)

Besides EG078A waiving correlation; EP087D-F, EP088A-B, ER030B-D, and EI012A-B (total 88hr) requested re-queuing based on seeing the effects of the weather & station problems from the L-band session in the correlated data [a risk of multi-wavelength projects, which require all parts to be good...]

From session 1/2014

Testing SRT, Tianma65 (CDAS, DBBC) in NMEs

Production correlator off local flexbuff (all Mh, Sr, some Ys)

KVN antennas participate in K-band user experiments

DVP backend used for Ro in user experiments

From session 2/2014

Globals return (0.7cm, 5cm, 90cm):

VLBA/GBT = RDBE/DDC (max 8 channels; Gb/s observations would use a mixed-BW mode: 32MHz vs. 16MHz) developed last year.

VLA = WIDAR tied array (only in 5cm = 128Mb/s)

NRAO station data = multi-thread VDIF

KVN antennas at K- and Q-band

Tianma65 observes in a 6035 experiment below Sh's 5cm receiver

System to extract ANTAB information from the 80Hz continuous cal developed

Coherent pulsar de-dispersion developed; first user experiment requiring this (and also wanting more than 1 bin in the pulsar gate)
Largest (set of) observations: estimated 1500 GB output FITS file from one observation, 5500 GB from all parts (18 sta, 1 SB, 2 pol, 8192 frequency points, 0.35s integrations).
LO offset recovery capability developed; more flexible than in the MkIV since now more than one station can be handled (no longer have to worry about which is the "X" station going into the fringe rotator).

USER SUPPORT

There were nine EVN TNA-supported data-reduction visits to JIVE in this period, three of which were by first-time visitors to JIVE or first-time EVN PIs.

JIVE support-group staff continue to contact all PIs once the block schedule is made public, and to check over schedules posted to VLBEER prior to stations downloading them, helping to prevent avoidable errors in the observations themselves. Now that EVN stations are transitioning to DBBC back-ends on separate time-scales, this scheduling help also provides PIs with experiment-specific template "setini" blocks and station catalogs, which can change from session to session. The most recent sched releases (11.2, 11.3 upgrade 1) provide native support for the DBBCs (DDC). I still have to update the freq.dat catalog for all the currently known DBBC-related patchings.

NETWORK SUPPORT

By session 2/2014, there were six stations using the DBBC as their primary back-end: Ef, On, Hh, Nt, Mh, and Tr; Ys is changing over for session 3/2014. I still need to distribute the pointing-sector control parameters from sched, as discussed in the previous TOG in Wettzell.