JIVE Questionnaire 2011–12 results

Zsolt Paragi & Bob Campbell, 16/2/2012

1 The goals and the realization of the survey

The JIVE Questionnaire was sent to a well defined group of people: 440 astronomers registered in the EVN NorthStar Proposal Tool (all active EVN users as PIs or CoIs on EVN proposals since 2007), plus PIs of Target of Opportunity or short/exploratory proposals (not going through the proposal tool yet), and PIs in the year preceding the introduction of the proposal tool (PIs in 2006). This survey was carried out in a similar fashion to the EVN Questionnaire in 2004: most of the questions were the same or very similar. Users were asked to fill out a web-form that was prepared by Bauke Kramer at JIVE using limesurvey (`http://www.limesurvey.org`).

A total of 139 people filled in the survey webform, of whom 95 fully completed the survey, with the remainder providing answers to only some of the questions. These latter are also included in this report. The response rate was 32%. Many proposal co-authors may not have been all that active in VLBI, and some proposals have more than 10 co-Is. For comparison, there were 82 replies (46%) to the 2004 EVN Survey which was sent to 180 people (only PIs, and the participants of the EVN Symposium 2004). In section 2. we will give an overview of the answers, followed by an interpretation in section 3.

2 Questionnaire results

1. How long have you been active in the field of VLBI?

Answer	Count	Percentage
< 3 years	31	22.30%
3–10 years	50	35.97%
> 10 years	50	35.97%
No answer	8	5.76%

2. What is your opinion on JIVE support in general?

   - Have you ever had direct interaction with a JIVE support scientist?

Answer	Count	Percentage
Yes	94	78.99%
No	18	15.13%
No answer	7	5.88%
Comments	18	15.13%

   - How do you rate their expertise in VLBI?
     (5 –excellent, 4–very good, 3–good, 2–poor, 1– insufficient)

Answer	Count	Percentage
5	57	47.90%
4	34	28.57%
3	3	2.52%
2	1	0.84%
1	1	0.84%
No answer	23	19.33%
Comments	8	6.72%

- How do you rate the JIVE support for proposal preparation?

Answer	Count	Percentage
5	30	25.21%
4	37	31.09%
3	7	5.88%
2	1	0.84%
1	1	0.84%
No answer	43	36.13%
Comments	17	14.29%

- How do you rate the JIVE support for experiment scheduling?
  (for e-VLBI see Q 6.2)?

Answer	Count	Percentage
5	48	40.34%
4	31	26.05%
3	5	4.20%
2	0	0.00%
1	0	0.00%
No answer	35	29.41%
Comments	8	6.72%

- How do you rate the post-correlation and data analysis support?

Answer	Count	Percentage
5	46	38.66%
4	33	27.73%
3	6	5.04%
2	0	0.00%
1	1	0.84%
No answer	33	27.73%
Comments	15	12.61%

- How do you rate the non-technical aspects of your interaction with the support scientists (for example clarity of explanations, availability, time for answering e-mails etc.)?

Answer	Count	Percentage
5	53	44.54%
4	35	29.41%
3	6	5.04%
2	0	0.00%
1	0	0.00%
No answer	25	21.01%
Comments	5	4.20%

3. What is your opinion about EVN proposal submission procedures?

- Is the EVN Call for Proposals clear enough?
  (`http://www.ira.inaf.it/evn_doc/call.txt`,
  `http://www.e-merlin.ac.uk/vlbi/evn_docs/guidelines.html`;
  rate between 5–very clear and 1–not clear)

Answer	Count	Percentage
5	39	34.82%
4	52	46.43%
3	9	8.04%
2	1	0.89%
1	2	1.79%
No answer	9	8.04%
Comments	7	6.25%

- Do you find the NorthStar proposal tool convenient?
  (`http://proposal.jive.nl`)

Answer	Count	Percentage
5	37	33.04%
4	48	42.86%
3	11	9.82%
2	3	2.68%
1	2	1.79%
No answer	11	9.82%
Comments	13	11.61%

- Are the ToO, short proposal, triggered proposal procedures clear enough?
  (`http://http://www.evlbi.org/proposals/too.2011.pdf`,
  `http://www.e-merlin.ac.uk/vlbi/evn_docs/guidelines.html`; see also
  `http://www.evlbi.org/proposals/`)

Answer	Count	Percentage
5	12	10.71%
4	41	36.61%
3	13	11.61%
2	5	4.46%
1	1	0.89%
No answer	40	35.71%
Comments	14	12.50%

4. Do you find the online EVN Calculator useful?
   (http://www.evlbi.org/cgi-bin/EVNcalc)

   - Is EVN Calculator useful for proposal planning?

Answer	Count	Percentage
5	45	41.67%
4	34	31.48%
3	10	9.26%
2	3	2.78%
1	2	1.85%
No answer	14	12.96%
Comments	11	10.19%

   - Is the EVN Calculator easy to use?

Answer	Count	Percentage
5	45	41.67%
4	40	37.04%
3	7	6.48%
2	2	1.85%
1	0	0.00%
No answer	14	12.96%
Comments	5	4.63%

   - Do you need additional features in EVN Calculator? Specify!

Answer	Count	Percentage
Yes	27	25.00%
No	40	37.04%
No answer	41	37.96%
Comments	24	22.22%

5. What is your opinion about EVN scheduling procedures?

   - Do you find the block schedules clear enough?
     (http://www.mpifr-bonn.mpg.de/EVN/EVNschedule.asc)

Answer	Count	Percentage
5	29	27.62%
4	36	34.29%
3	15	14.29%
2	4	3.81%
1	1	0.95%
No answer	20	19.05%
Comments	5	4.76%

   - Are you satisfied with the organization of EVN observations in three major sessions per year?

Answer	Count	Percentage
5	26	24.76%
4	31	29.52%
3	25	23.81%
2	12	11.43%
1	3	2.86%
No answer	8	7.62%
Comments	24	22.86%

- Is scheduling your experiment with Sched convenient?

Answer	Count	Percentage
5	19	18.10%
4	37	35.24%
3	21	20.00%
2	5	4.76%
1	4	3.81%
No answer	19	18.10%
Comments	18	17.14%

- Do you find it important to be able to control the observing setup details yourself?

Answer	Count	Percentage
5	27	25.71%
4	33	31.43%
3	17	16.19%
2	12	11.43%
1	2	1.90%
No answer	14	13.33%
Comments	12	11.43%

6. What is your opinion about e-EVN scheduling procedures?

- Have you ever observed with the EVN in real-time e-VLBI mode?

Answer	Count	Percentage
Yes	33	32.35%
No	63	61.76%
No answer	6	5.88%
Comments	7	6.86%

- If yes, are you happy with the observing schedule JIVE provides for your experiments?

Answer	Count	Percentage
5	24	23.53%
4	15	14.71%
3	2	1.96%
2	2	1.96%
1	0	0.00%
No answer	59	57.84%
Comments	5	4.90%

- Would you prefer to see more e-EVN observing runs?

Answer	Count	Percentage
5	29	28.43%
4	24	23.53%
3	9	8.82%
2	3	2.94%
1	5	4.90%
No answer	32	31.37%
Comments	12	11.76%

- Would your science benefit from more e-VLBI observing time with only the smaller telescopes (i.e. no Ef, Jb1 & Wb)?

Answer	Count	Percentage
5	7	6.86%
4	12	11.76%
3	12	11.76%
2	10	9.80%
1	25	24.51%
No answer	36	35.29%
Comments	17	16.67%

7. If you have used the e-EVN before: what is your opinion on real-time observing?

- Do you find quick turnaround time useful/desirable for your projects in general?

Answer	Count	Percentage
5	28	28.00%
4	26	26.00%
3	6	6.00%
2	2	2.00%
1	1	1.00%
No answer	37	37.00%
Comments	6	6.00%

- Are you satisfied with the turnaround time of e-EVN projects?

Answer	Count	Percentage
5	19	19.00%
4	19	19.00%
3	8	8.00%
2	2	2.00%
1	0	0.00%
No answer	52	52.00%
Comments	4	4.00%

- Do you find the quality of real-time e-EVN data satisfactory (compared to regular observations)?

Answer	Count	Percentage
5	16	16.00%
4	15	15.00%
3	6	6.00%
2	3	3.00%
1	0	0.00%
No answer	60	60.00%
Comments	7	7.00%

- Would you find it useful to be able to record the data parallel to real-time observations and recorrelate them later if necessary?

Answer	Count	Percentage
5	22	22.00%
4	25	25.00%
3	10	10.00%
2	1	1.00%
1	3	3.00%
No answer	39	39.00%
Comments	14	14.00%

8. What is your opinion of the EVN archive?

- Have you ever used the Archive to obtain publicly available EVN data?

Answer	Count	Percentage
Yes	49	49.00%
No	47	47.00%
No answer	4	4.00%
Comments	4	4.00%

- Is the description of data products and plots sufficient?

Answer	Count	Percentage
5	20	20.00%
4	45	45.00%
3	5	5.00%
2	1	1.00%
1	0	3.00%
No answer	29	29.00%
Comments	5	5.00%

- Have you ever had problems accessing the archive or downloading the data?

Answer	Count	Percentage
Yes	6	6.00%
No	67	67.00%
No answer	27	27.00%
Comments	7	7.00%

9. What do you think about the EVN pipeline procedure?

- Is the quality of pipeline products sufficient?

Answer	Count	Percentage
5	17	17.17%
4	34	34.34%
3	15	15.15%
2	5	5.05%
1	1	1.01%
No answer	27	27.27%
Comments	13	13.13%

- Do you find the pipeline plots useful and their description clear enough?

Answer	Count	Percentage
5	18	18.18%
4	33	33.33%
3	18	18.18%
2	2	2.02%
1	1	1.01%
No answer	27	27.27%
Comments	6	6.06%

- Have you ever used pipeline product directly for publication?

Answer	Count	Percentage
Yes	6	6.06%
No	75	75.76%
No answer	18	18.18%
Comments	10	10.10%

10. Which software packages do you use for data processing?

Answer	Count	Percentage
AIPS only	34	35.79%
AIPS plus some other	50	52.63%
Other	2	2.11%
No answer	9	9.47%

11. What is your opinion of ParselTongue?

- Do you know what ParselTongue is?

Answer	Count	Percentage
Yes	55	56.12%
No	30	30.61%
No answer	13	13.27%
Comments	2	2.04%

- Have you ever used ParselTongue during data processing?

Answer	Count	Percentage
Yes	30	30.61%
No	50	51.02%
No answer	18	18.37%
Comments	6	6.12%

- Are there calibration steps that should be considered for future ParselTongue development? Specify!

Answer	Count	Percentage
Yes	10	10.20%
No	9	9.18%
No answer	79	80.61%
Comments	11	11.22%

12. What do you think about EVN data processing in general?

- Is the description in the EVN Data Analysis Guide sufficient?

Answer	Count	Percentage
5	9	9.38%
4	34	35.42%
3	21	21.88%
2	3	3.12%
1	2	2.08%
No answer	27	28.12%
Comments	13	13.54%

- Do you find the calibration of the EVN satisfactory (amplitude/bandpass/phase)?

Answer	Count	Percentage
5	16	16.67%
4	39	40.62%
3	16	16.67%
2	6	6.25%
1	2	2.08%
No answer	17	17.71%
Comments	11	11.46%

- Are you satisfied with the polarization purity of the EVN?

Answer	Count	Percentage
5	5	5.21%
4	13	13.54%
3	12	12.50%
2	6	6.25%
1	1	1.04%
No answer	59	61.46%
Comments	9	9.38%

- Is the astrometric accuracy sufficient for the VLBI science you are doing?

Answer	Count	Percentage
5	30	31.25%
4	30	31.25%
3	6	6.25%
2	4	4.17%
1	1	1.04%
No answer	25	26.04%
Comments	8	8.33%

13. Which direction would you find most useful for the EVN to develop? Rank the following items in the order which is most relevant to your science!

Average ranking	
2.73	Improved uv-coverage (more telescopes, more short spacings)
3.50	Increased bandwidth to improve sensitivity
4.57	Improved calibration in general (phase, amplitude, bandpass, polarization)
4.60	Improved resolution (more long baselines)
4.73	Frequency agility for spectral index imaging
6.06	Real-time e-VLBI capabilities for more telescopes
6.34	Extended observing time to be able to carry out big surveys
6.42	Real-time e-VLBI capabilities for a larger fraction of observing time
6.71	Improved astrometry
6.89	Larger field of view

14. The new EVN Software Correlator (SFXC) has new capabilities. Rank these and give additional comments what future improvements are necessary in your opinion!

Average ranking	
1.95	Multiple phase centre correlation in a single pass
2.26	High spectral resolution correlation (spectral line VLBI)
2.40	Wide-field correlation (high spectral resolution and short integration times)
3.73	Near-field correlation capability
4.13	Pulsar gating

15. What is your opinion of the travel support for observations and/or data analysis?

   - Do you know about (and understand the criteria of) the EVN Trans-National Access programme?

Answer	Count	Percentage
Yes	50	52.62%
No	35	36.84%
No answer	10	10.53%
Comments	4	4.21%

   - Have you ever received EVN TNA travel reimbursements?

Answer	Count	Percentage
Yes	27	28.42%
No	57	60.00%
No answer	11	11.58%
Comments	4	4.21%

- Is the travel support to JIVE or other EVN institutes sufficient?

Answer	Count	Percentage
5	16	16.84%
4	20	21.05%
3	9	9.47%
2	5	5.26%
1	3	3.16%
No answer	42	44.21%
Comments	8	8.42%

16. Do you have any other comments to JIVE?

Answer	Count	Percentage
No answer	66	69.47%
Comments	29	30.53%

3   Questionnaire evaluation

The people who responded to the survey have various levels of VLBI expertise, rather equally divided between the three categories, although the 'youngest' group with less than 3 years expertise is somewhat less represented here (22.3%). Almost 80% of the people have had direct interaction with JIVE support scientists in that past; their opinion therefore is based on personal experience. The vast majority who answered the first question group about the VLBI expertise and the level of various support received from JIVE scientists evaluated them as excellent (5) or very good (4), a few people as good (3) and only one person each as poor (2) or insufficient (1). These latter did not give a specific comment. There was however one comment that pipelining took longer than expected, and another saying that the level of support quality varied depending on the support scientist responsible for the project.

The answers to question 3. about EVN proposal submission procedures distributed similarly, but in this case most of the people ranked these as very good rather than excellent. In the Proposal Tool, it 'would be useful to see the status of the proposals/projects updated after submisson (i.e. accepted, rejected, observed, data released publicly, etc.)' according to one comment, and another noted that e-VLBI and regular EVN proposals should not be treated separately (this change is independently in progress already). The ToO-type proposal procedure was found less clear in general, but still, only 6 people ranked it as poor or insufficient. One person noted that 'It might be good to start making clear that EVN ToOs are different than ToOs for other big observatories', another wrote 'Files too long. Instructions could be shortened'.

The EVN Calculator (Q.4) had a very positive feedback, most users found it very useful for proposal preparation and easy to use, and the majority were satisfied with it as is at the moment. However a few less experienced users did not find it straightforward enough.

There were also 24 comments suggesting additional features for the EVN Calculator. Most of these were missing advanced features like including telescope uptime constraints, showing uv-coverage plots and the beam for various weighting schemes that are already available in Sched; these would be useful but would require substantial changes and work effort. Some pointed to the LBA Calculator and ALMA Observation Support Tool as good examples. Some missed S/X setup and spectral line sensitivity calculations (which can be easily added), 2048 Mbps data rate (already added), and e-MERLIN (cannot be done until the array is fully operational and the SEFDs become known) or suggested other minor changes.

The EVN scheduling procedures (Q.5) ratings were distributed more evenly, but most users found them very good. More observing sessions per year would be welcome, but it is understood that organizing these may be difficult in the EVN. The Sched program was noted to be difficult for inexperienced users, a more user friendly GUI would be helpful. In spite of the difficulties, the majority of PIs would still prefer to control the observing setup themselves, and let this checked by an expert. Users were very satisfied with the real-time EVN scheduling procedures (Q.6, schedule made by support scientist at JIVE), and those who have used e-VLBI before (∼third of all users) would like to see more e-VLBI runs. However when this would be in expense of losing large dishes (Effelsberg 100m, Lovell Telescope, phased array WSRT), people were less interested. Most of the users find that the short turnaround time for EVN projects is very desirable (Q.7), and those who have used the e-EVN are very satisfied with its turnaround time and also with the e-VLBI data quality. The possibility of parallel recording in e-VLBI projects in the future (part of NEXPReS project) was received well.

About half of the users have downloaded publicly available data from the EVN archive (Q.8). However, *'The current archive does not have data correlated in Bonn'*, one user complained. According to the answers the pipeline product and plot description is sufficient, but one user missed information of total flux density values of calibrators for the projects[1]. Only 6 persons (6%) noted difficulty accessing the EVN archive, but these were likely temporary issues, as associated comments clarified. Regarding the quality of pipeline products (Q.9), the users were generally very satisfied. However it was noted that the usefulness of the pipeline results depends on the type of the project (e.g. more useful for continuum observations, less useful for line projects), and that there are usually issues which have to be fixed by hand. For example, an automatic flagging procedure would be welcome. Only very few have ever used pipeline data directly for publication – which is good in the sense that the current pipeline was never meant to replace the astronomer completely; but at the same time it is positive that in some cases the pipeline product was publication-ready quality.

AIPS is used almost exclusively as the primary data reduction package (Q.10), but half of the users use additional packages as well for imaging etc. Two users did not mention AIPS, one of them uses geodetic-VLBI packages, and the other uses the GILDAS package (likely coming from the millimeter community). More than half of the users have already heard about ParselTongue (Q.11), and about one third have already used it. New ParselTongue procedures for automatic flagging, manual phasecal, R–L phase offset, phase-referencing and ionospheric corrections were proposed as future additions. EVN data processing in general (Q.12): users find the description in the EVN Data Analysis Guide 'very good' to 'good' but not really excellent. It was noted that it is out of date at some places and spectral line analysis was missing. The calibration quality of the EVN was generally regarded as

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[1]PIs who request can obtain the synthesis array data from the WSRT if it participated in the run. Calibrator total flux densities can be derived from those data at some of the frequencies, including the most popular C- and L-bands. In the near future it will not be possible anymore at frequencies other than L-band, because of the coming WSRT upgrade to use focal plane arrays.

very good, however there is room for improvement in polarization purity. The astrometric accuracy is on the other hand very satisfactory for most users.

Users were asked to rank the possible directions along which the EVN could develop (Q.13). One may use various metrics to evaluate the answers, here we derived an 'average ranking' for each. At the first two places 'improved uv-coverage, more short baselines' and 'increased bandwidth' stand out. In the middle range there are 'improved calibration', 'more long baselines' and 'frequency agility'. At the lower range we find 'e-VLBI capability for more telescopes', 'more observing time for big surveys', 'improved astrometry' and 'larger field of view'. It may seem odd that a VLBI community has the highest preference for more short baselines. However a better uv-coverage means better fidelity images, and short baselines for the far away telescopes means they can be better calibrated. Besides, with the additional short spacings one can for example study compact objects and their environments together (cf. the science case of star formation vs. AGN activity in EVN 2015). The expectations of future joint EVN and e-MERLIN operations may have played a great role as well. The second choice of increased bandwidth requires no explanation, it will provide more sensitivity (primary advantage of the EVN over other VLBI arrays, that will start to diminish with the broadband upgrade of the VLBA for example), and will provide information on the spectrum as well at a given frequency in a single observation. The higher or lower ranking of the other possible EVN developments vary more, depending of the special interest of individual users.

The users were also asked to rank the new capabilities of the EVN Software Correlator (SFXC, Q.14). Again, individuals have their various preferences, but it seems multi-phase center correlation is regarded as the most important by the community, followed by high spectral resolution for spectral line and wide field of view studies. It has to be noted that the other improvements are equally important even if less ranked here: near-field correlation and pulsar gating will potentially open up new possibilities for a much broader user community.

The last question concerned the travel support available in the EVN (Q.16). While most people know what the TNA programme is, at least a third do not, which means that it could be more widely/clearly advertised. Only 28% of the users ever made use of the TNA programme, but this apparantly low number also reflects the fact that not all projects are eligible for TNA support, and only one user per project can receive travel reimbursement. One commented: *'I would abolish the rule that the majority of your co-investigators has to be European. In my case, I could not use the TNA funds to travel because of a larger number of Dutch + non-Europeans than Europeans (except Dutch). Pity!'.* This will soon change, because in the just-starting TNA, the Netherlands is no longer an ineligible country.

Finally, users were asked for general comments to JIVE, most of were along the lines *'Keep up the good work!'*. There were three major comments, only one directly related to JIVE, the other two to the EVN in general:

'There is no reason, why ESA should develop their own accurate tracking network, neither JIVE should develop their own accurate VLBI observation of spacecraft (Huygens as example). It is better to cooperate and join efforts. This will be even more important, when there is a SKA.'

'A few comments and questions mostly concerning scheduling. My proposal (grade 1.5) could not be scheduled in the last 3 EVN sessions and become "expired", but I did not have any information what is the curent status of my proposal during the whole year. My suggestions: 1) To create a web page with a table of awaiting proposals and their curent status. 2) To determine clear rules for awaiting proposals: which one is the first in the queue when more than one proposal have the same grade? 3) To give the opportunity to divide the proposal (set

of sources) into parts to have a chance for observations for at least some part of the data. I have got an information in the case of my proposal that it was difficult to schedule it also for this reason that it required something like 25% of all disk space available for a typical EVN session. But I don't see any problem in dividing it into parts and observing in different time. However nobody asked and gave me this opportunity.'

'I have submitted proposals to EVN together with my co-authors four times, and four times these were rejected, though the amount of time requested was not large, and only two objects to be observed were included. In my view, our proposals were written clearly enough, stating the scientific goals explicitly, but the referees' comments were rather inarticulate, just saying that the proposal was "not focused enough". I cannot imagine how a proposal on an object that had never been observed by VLBI previously and that indeed deserves attention can be "not focused enough". Thus, EVN time has never been allocated for me, I have never really used EVN, and my answer to many questions of this questionnaire are just "no answer".'

As a conclusion, JIVE users were generally very satisfied with the JIVE services and the EVN capabilities. The comments will be useful for JIVE and the EVN to improve operations and support, as well as guide future EVN developments.