JIVE Newsletter number 99-1

----++++==== The JIVE Newsletter, Year 1999, Number 1 ====++++---

NEWS NEWS NEWS NEWS NEWS

1) The Current situation of the EVN MkIV Correlator at JIVE

After last year's opening ceremony the commissioning phase of the Correlator has started. The target is to make the data processor available to general users by July 99, at which point we should be able to able to process experiments routinely.

Although the development of software and hardware for this target date has been reasonably on schedule, we have experienced some delay in the necessary astronomical testing. However, two important milestones in this process have now been passed.

The first step was to check out the quantitative properties of the data processor. This proved to be quite involving, requiring fixes in many parts of the internal data path. Then a very comprehensive test could be done; a comparison between output from the VLBA and JIVE correlators. A subset of GL034 was previously processed in Socorro and then re-correlated at JIVE. Closure properties showed excellent agreement. Even a direct comparison between amplitude and phase (over frequency and time) were encouraging. After this we could start work on the next milestone...

2) First image from the EVN MkIV Processor at JIVE

On April 7th the EVN MkIV data processor at JIVE generated its first astronomical image. The result, an image at 6cm of 3C380 using 8 EVN antennas, can be viewed at

http://www.nfra.nl/jive/jive/correlator/fimage.html

The data is a subset of the global experiment GL034, which was also used during the demonstration of fringes at the opening ceremony. A complete 8 hour track from 8 European stations was processed: Cambridge, Effelsberg, Jodrell (Mk2), Medicina, Noto, Onsala, Torun and Westerbork. All the stations had reasonable data quality. Four 4 MHz bands in a single polarization (LCP) centred on 4987 MHz were processed in a 2 bit 1:1 mode.

Obtaining the first image excercised the data path at the JIVE processor for the first time. From the preliminary correlator output format, the data was converted into an aips++ measurement set. aips++ is the package used at JIVE for inspection of the data. For calibrating and imaging we rely on classic AIPS. Using home-grown aips++ software, a multi-source UVFITS file was written and exported to AIPS. Calibration and mapping was done using the standard techniques. At the moment, extensive editing is still required in the processing as automatic flagging is only partially implemented. This, and the amount of time available for processing, limited the dynamic range of the first image to 200:1.

The source shows the same features as previous VLBI maps. In particular, we were happy to see the jet pointing in the same direction!

Other points of interest are that the entire experiment was processed within 3 working days by one of the correlator operators, even though the user interface of the processor is in a preliminary stage and that it only took three working days to guide the 400 MB dataset through the entire post-correlation data path for the first time.

3) JIVE Personnel

We are pleased to welcome Denise Gabuzda and Bob Campbell at JIVE as support scientists. Denise will work in the EVN support group, helping JIVE visitors to analyze VLBI data. Bob will work in the Data Processor Group and will closely inspect the correlator output for imperfections. Paul Kamphuis started work on the post correlation integrator for the data processor.

4) Apology

Due to a misphrasing on my side, I've seem to have caused some confusion. I said that subscription to the JIVE Newsletter does not happen automatically and in order to receive future editions, one should send me an e-mail stating that. What I meant to say was: once you're on the distribution list, you're sure to receive any future editions but you are not put on the list unless you indicate you want that.

This newsletter was prepared by Harro Verkouter, offline software scientist at JIVE, Dwingeloo.

I would appreciate your suggestions, comments, additions and any other form of feedback, especially if you plan to have a symposium (or the like). Please mailto:verkouter@jive.nfra.nl.

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