

## **JIVE new-year speech**

*Huib Jan van Langevelde; 11 January 2009*

Dear ASTRON and JIVE colleagues, let me start with my best wishes for you and your families. I have now become accustomed to the fact that during the Christmas break I have to wonder every now and then what I will say at this new-years speech. For a change and forced by circumstances, I have spent more time than usual in the kitchen during the Christmas and New Year break. I find the kitchen is a place where you make far too ambitious plans, asking yourself to perform hasty miracles and then afterwards you are left to clean up the mess. but in fact, it is a good place to reflect on the processes of the past and the plans for the future. It is also a place where you learn to appreciate your co-workers, my children in this case, and are forced to work closely and timely with a team.

In a small organization like JIVE we are blessed with a similar atmosphere, we are making ambitious plans, perform miracles and afterwards we take care of the mess, in our case often the paperwork associated with reporting and accounting of the various projects. To start with the latter, a lot of hard work went into the administration of our EC projects, previous and new. Often in collaboration with ASTRON FZ we manage to stay on top of these complex issues. Highlight in this area was the recognition of the “extraordinary successful” performance —not my words, but of the review committee— of the EXPReS project. In this project we managed to perform miracles even beyond the ambitious plans we had in 2005. The fantastic performance achieved when connecting telescopes world-wide at up to 1024 Gbps led to a truly operational facility. This achievement was topped off nicely with important new science results which will make it to Nature shortly. It seems Charles Yun can close the books on this project very soon.

The ingredients of the EXPReS success demonstrate how JIVE should operate ideally in leading the way in the European VLBI Network. Defining new observational modes, finding the funding to implement these, taking the lead on the development and demonstrating the potential scientific impact. In the last year we also worked very hard to define the ingredients of the follow-up of EXPReS. We proposed a next generation of e-VLBI that will be able to flexibly switch from real-time VLBI to delayed correlation, when for example a telescope has a poor connection. We have put all these ingredients into a proposal called NEXPReS which was submitted to the EC in November.

I think even more important for JIVE is the project to develop new correlators for VLBI. We are following two complementary approaches here. For the long term we are developing FPGA based correlation, in close collaboration with ASTRON. In 2009 this ambition has been turned into a real program, initially with the UniBoard project, but now with additional funding through the NWO project ExBoX and further boosted by funding to enhance our collaboration with China in this area. In 2010 this project could progress to a prototype stage, possibly with first fringes. I can now mention that it seems we have also new money from the KNAW to strengthen our scientific collaboration with China from a proposal led by Zsolt Paragi.

For the shorter term we have a software correlator program and this has reached a level of maturity such that we can start commissioning it for production correlation soon. We have recently ordered the hardware necessary to offload some of the operations to this new platform. We must now grab the opportunity to demonstrate the new science capabilities, for example in pulsar gating, and I think this should be our main objective the coming semester.

It is clear that having two correlators increases not only the capacity but also the complexity of our operations. Fortunately our support group is currently fully manned for the first time in years, but it is already dealing with the increased load of additional e-VLBI sessions and the increasing complexity of the experiments that users can and will propose. Through mere dedication Bob Campbell's group continues to deliver the best possible data products and I see a risk in this that it will be sort of “punished” for never failing. Clearly in the commissioning of the software correlator we must also look at our operational procedures and software in order to streamline correlation, data production and inspection.

Along these lines, I also feel I have to encourage the JIVE staff to balance their operational and development duties with focus for training and science. No matter whether you are a software engineer, manager or astrophysicist, you must take the time to push the limits of your skills and knowledge. It is important for both your personal careers and the health of JIVE. In this building we are blessed with an increasing breadth of technological and scientific excellence. I encourage you to take full advantage of all the opportunities for scientific interaction: colloquia, a variety of lunch meetings, but also coffee, lunch breaks and parties are extremely important for communication in this building.

From my perspective it is clear that the fact that JIVE is a small organization has been an important ingredient in the successes of the last year. But there are also clearly risks associated with being a small organization. It has been a recurring theme the last few years that we have to respond to reviews in various partner countries. And in these we must be seen to perform flawlessly in operations, development and science. But, as the current STFC demonstrates, this is not even sufficient. We must also continuously move forward and make important contributions to the future ambitions in our field, obviously related to SKA for the case of radio-astronomy. We have been pushing e-VLBI strongly as one of the European led SKA pathfinders. Also our program in user software and certainly in VLBI Space applications, are strategically important in this respect.

Considering the current situation with UK funding, our board held a telecon last Friday and is prepared to make strong statements to STFC that across Europe it is felt that JIVE is an essential ingredient for the radio astronomy community that has the ambition to build SKA. I am confident that a way will be found to continue a UK contribution to our operations.

Meanwhile we are also moving forward to give JIVE a more solid base for the future. In 2009 the EC has adopted legislation that allows for new legal entities in the EC aiming at European scale research infrastructures. With support from NWO and the ministry, we now have a clear picture what the advantages of this construction would be for JIVE. We also understand how this could be adopted without major changes for the JIVE personnel. In the coming months we will investigate whether a transition is really desirable for our partners. This may be a complicated process as it supposedly shifts the responsibility in all participating countries to a governmental level. But I am convinced that this change is necessary in order for us to, for example, define how new aspiring partners could join JIVE. I think the construction will help to lift some of the vulnerability of JIVE as a small organization governed mostly by an MOU.

There is another way in which a small organization is vulnerable. The last time I did the Christmas cooking was fourteen years ago when my daughter was just born. Then, I unfortunately cut my own finger instead of the turkey. This was when we still lived in Socorro and I had to go to the local ER. It turned out I was not the only victim, because, as the nurse explained, there are many more unexperienced people in the kitchen around Christmas. Single point failures can be a big problem in small organization and then the turkey had to be postponed. Last year I already recognized that we were short in management and this year unfortunately it was even worse. I like to thank all the people who have put in the extra effort to make sure JIVE remained functional on many levels this year. Leonid Gurvits and Arpad Szomoru have put in extra effort in representing JIVE in many places, but there have been many others who have made sure that JIVE has been able to deliver its commitments in EXPReS, RadioNet FP6 and FP7, ALBUS and ALBiUS, SKADS and ESKAC, ANGLES and ESTRELA. I want especially to highlight the team effort to write the NEXPReS proposal.

I think that one day we can look back at this period as a time in which we all learned to take on new responsibilities and adopted new skills. But most of all I hope of course that the NEXPReS proposal and our attempts to give JIVE a new footing will pay off in the future. 2010 will be a year full of new developments, for example in new instruments with interesting new capabilities complementary to VLBI coming on-line, but also in VLBI itself, for example in space applications. I am sure it will turn out to be another year full of exciting new opportunities in radio astronomy. And of course, I wish you all the best in your professional and personal life in 2010!