

Internal JIVE BlackHoleCam meeting

Date: 12 May 2016, 13:30 in Arpad's office

Subject: pipeline WP

Present: Arpad Szomoru, Des Small, Mark Kettenis, Ilse van Bommel

Meeting with BHC project team 160511

Ilse reports on a visit to Nijmegen, in which she talked to Heino Falcke, Remo Tilanus and Ciriaco Goddi about the status of the work in JIVE. In spite of the existing management plan, the expectations in Nijmegen were somewhat misplaced, and the team there pushed heavily for faster delivery.

We discuss the options we have to provide access to our development code, but most options are too time consuming for us and will not contribute to the quality. We settle on the plan to provide a local CASA-dev version plus Mark's patches after summer. A Pythonic fringe finder should also be available around that time, the C++ porting will amount to a significant delay with regards to the original plan. This was also reported to the Nijmegen team.

The team in Nijmegen has a new software developer, Daan van Rossum, who is willing to come over to JIVE for a visit. We would prefer for him to coordinate the actual "pipeline" development on the Nijmegen side, i.e. ensuring all the CASA tools are in place and accessible for real EHT data processing.

Another worry in Nijmegen is the lack of a metadata standard for mm-VLBI. This is not part of the JIVE scope of the project. We will continue to work from the assumption that data is provided either in MS format, or in a format that can be converted to MS, such as FITS-IDI.

Verification document (deliverable, action items 6, 20 & 21)

Ilse is working on writing up the results of the verification tests between AIPS and CASA FRING. There is a small delay because of a bug in the CASA FRING code. The document should be finished by the end of May. The comparison of phase solutions still has to be implemented, but is a relatively quick and easy change to make.

Development of CASA tools

Mark has found a problem in the application of the rates, and a fix for that depends on work that has to be done at NRAO. He will develop a work-around, so that we can still apply the rate solutions from Des's fringe finder (action 24).

Development of fringe finder

Des has solved a bug that affected the weighting of the stations until recently. The current version is now working properly for single band delays and will be frozen for a rerun of the verification with AIPS. Mark suggests to verify this using a real dataset without EF, or a VLBA dataset, in fact, anything with an array of comparably sized dishes will do.

The next step is to implement multi-band delay and then the figure of merit à la HOPS. The preference is to do this in Python. Once this is completed, the whole thing will be ported to C++. The planning is to have the Python version ready by the end of summer.

Preparing for NRAO visit

Des and Ilse will attend the NRAO synthesis summer school in the first week of June. They will use the opportunity to talk to the NRAO developers. To that purpose we need a draft of the calibration model, defining all our parameters in detail. Des will start on this and work with Mark on a final version before we leave.

Action items:

- 19. Asses C++ solvers:** this will await the finalization of the Pythonic fringe finder
- 20. Verification test suite:** in progress
- 21. Phase solutions:** will be implemented this week
- 22. CASA to-do list:** there is some confusion as to which wiki this should be on. Mark will put it on the SKA-NL and/or the BHC wiki.
- 23. Calibration model:** task reassigned to Des
- 24. Improve delay/rate:** in progress

Actions:

ID	Description	Owner	Ref.	Due
4	Write note on motivation for solver	Des	151019	See 19
6	Write report on verification with AIPS (deliverable)	Ilse	151019	160528
12	Test multiband delay correction	Des	151214	See 21
13	Get real EHT data	Ilse	151214	
18	Process EVN EA054 data with CASA	Mark & Des	160115	See 21
19	Assess available solvers for C++	Des	160404	
20	Develop verification test suite	Ilse	160404	
21	Compare phase solutions between AIPS and CASA	Des/Ilse	160404	
22	Put up CASA to-do on the SKA-NL/BHC wiki	Mark	160404	
23	Write up phase model for CASA calibration	Des/Mark	160404	
24	Improve delay and rate application	Mark	160404	
25	Coordinate visit from Daan van Rossum	Ilse	160512	
26	Report back to Nijmegen on planning	Ilse	160512	
27	Include verification test without EF station	Des/Ilse	160512	

Next meeting: 20 June 2016, 11AM