

Minutes of Meeting LOFAR Software

Date:	2007-11-06
Next meeting:	2007-11-13 11:00-12:00
	Paviljoen West Room
Present:	
Andre Gunst	No
Ronald Nijboer	Yes
Ruud Overeem	Yes
John Romein	Yes
Michael Wise	Yes

cc: Arthur Coolen, Jurjen Sluman, Pieter Donker, Chris Broekema, Martin Gels, Joris v. Zwieten, Marcel Loose, Adriaan Renting, Ger van Diepen, Max Avruch, Peter Boonstoppel, Michiel v. Haarlem, Jan Reitsma, Ger de Bruyn, Arno Schoenmaker, Hanno Holties, Corina Vogt, Jan Noordam, Joe Masters, Lars Bähren, Dion Kant, Johan Hamaker

Remarks previous minutes

- The expected completion date for Action #45 was incorrect and was changed.
- Teun circulated a personal evaluation and recommendation for Ubuntu for the cluster OS. The working group plans to make a decision on Nov. 15.

Announcements

- Two new developer positions advertised for Operations support.
- Announcement of repository move to subversion imminent.
- German LOFAR community advertised a second developer position. The ad has been posted. This person will be physically based in Garching. Once the position is filled, some fraction of the person's time will be available to work on work packages from the overall software effort.
- John is away next week for the entire week.

Action item overview

ID	Date submitted	Description	Owner	Planned date	Status
40	20070710	Define stappen plan for the pulsar mode.	Michael	20070917	On a hold
43	20071610	Define integral tests.	Michael/Andre	20071115	Open
45	20071030	Definition TBB control framework (so that the users can hook up their dedicated software in it)	Ruud	20071113	Open

Progress

Stations (André):

Achieved since last meeting:

- Andrea visited on Friday and discussed the FPGA trigger algorithms. Based on that discussion, some modifications will likely be required to the current FPGA firmware. Amount of work required is still unclear. This update will go in Step 4 or 5 depending on difficulty. The CR KSP also wants to store the accumulated trigger information from the FPGA's for several seconds or longer which is not currently done. This requirement means some additional bookkeeping will be needed at the LCU.

Problems / current activities:

- There was network drop-out in the station connection last week (on Friday).

Next actions:

- Step 3

OLAP (John):

Achieved since last meeting:

- Implemented a new transport mechanism between compute nodes. This change will make data copies much faster.
- Profiling by Pieter indicates that the I/O nodes are 40% idle which may be available for additional processing.
- John cleaned up the BG/L code. The code is now separated into classes for the transpose, poly-phase filter, and correlator as well as the 4 data structures used by them. The code is not checked in and yet while John finishes unit testing. These changes will make it much easier for Chris/Martin to also work on the code.

Problems / current activities:

- Martin and Chris are busy with supporting Operations staff. This activity is essentially a full-time at the moment especially for Martin.
- Testing is still going on to finalize the decision to remove the input cluster. Everything looks good. Step 3/4 should be updated to include removing the input section. These are new machines and will presumably become more computer nodes for the offline cluster.
- Work for Step 3 is essentially done.
- Post CS1: In a plot of RMS against frequency, one of the subbands shows a periodic variation. It is unknown what causes this, and this has to be investigated / solved.

Next actions:

- Finishing up Step 3 activities

Offline pipeline (Ronald):

Achieved since last meeting:

- Continue with step 3 activities.
- Ger finished and submitted his ADASS contribution.
- Joris and Pandey are continuing their BBS profiling work. They found a performance bug where the compute time seems to increase with time. Currently tracking that down.
- Adriaan will concentrate on implementing Stefan DeKeoning's flagging algorithm. Need an assessment of size of task.
- Harro's pycasa module is now officially deprecated. Will support pyrap and pydal interfaces.
- Ronald suggested we replace the "Flagger" development box in the Stappenplan with the DP³. Motion carried.

Problems / current activities:

- Testing of the fitting in the UV plane.
- Continued profiling and debugging of BBS.
- BBI is on track for Step 3.
- Determination of global bandpass moved to Step 5.
- Everything on track for Step 3.

Next actions:

- Continue with step 3 activities.

SAS + MAC + SHM (Ruud):

Achieved since last meeting:

- Yurien is adapting the RCU screen in Navigator for the TBBs.
- Pieter has finished the temperature control although the panel isn't done yet. Temperature data is now available in PVSS every 10 seconds.
- The alerting system meeting with ETM was not necessary in the end we did the changes ourselves.
- Meeting with Andreas about TBB behavior was held. See item above.

Problems / current activities:

- Arthur has been out sick for a week.
- Ruud has to do a lot of testing to support the cluster OS decision on Nov.15. This testing will probably take most of a week, so some activities may slip.
- TBB control work starts today. Timeline may be affected by Ruud's testing work.
- Max is analyzing AC matrices every 10 minutes. Can be used to ID bad antennas.

Next actions:

- Step 3.

User Software (Michael):

Achieved since last meeting:

- John started work on the TBB data reader/write. Still on track to complete for Step 3. Need to verify no format changes have occurred in the TBB packets.
- Lars has begun the modifications to the CR offline processing pipeline to read in the TBB data files.
- Casey showed a first proposed version for the automated data validation and verification scripts (V&V) at the CS1 meeting.

Problems / current activities:

- Ger de Bruyn reported some performance issues with using the pydal tools. (Note added post-meeting: Casey sat down with Ger and was unable to replicate the problem. It may have been related to remote display issues.) Some profiling is planned after Step 3 activities are complete.

Next actions:

- Step 3.

Software integration

Achieved since last meeting:

- Tests have been defined and will be discussed next week.

Problems / current activities:

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Next actions:

- Step 2+: A test program will be initiated to verify the functioning of the LOFAR software in a more structured way. In OLAP it is possible to store the raw station data and feed this into the pipeline later on. This makes it possible to define a standard data set, which can be applied to the pipeline as soon as major software changes have been taken place.

Decisions

ID	Date submitted	Decision
02	20061220	Every Step will start with a Kick-off meeting, in which the complete software team participates.

03	20061220	The project team starts immediately with the preparations of the next CDR in order to preserve progress of the CS1 realization
04	20070116	This meeting will take place every week on Tuesday 11:00. The existing software team meeting with all developers will stop to exist.
05	20070130	Step 1 will be changed to 16 subbands instead of 32 subbands.
06	20070130	Step 2 will contain a multiple node BBS. 6 μ Stations/Station will be postponed. Instead of this, 32 subbands measurements will be realized.
07	20070206	Step 1 will support 160 MHz observations. The other steps will support 200 MHz as well.
08	20070424	Step 2 will support 16 subbands @ 200MHz and 24 MHz at 160 MHz
09	20070424	During the rest of step two, OLAP will only support observations during the weekend.
10	20070522	The number of subbands per Measurement Set is set to 6 or 8 default.
11	20070522	Scheduler activities will be preferably activated in Q4 2007.
12	20070522	Procure, three Local Control Units to accommodate 12 microstations in CS010 in a quick way.
13	20070529	Integrate version numbers in all software.
14	20070529	Distinguish the software between a production version and an engineering version (partly now already the case).
15	20070605	All developed software under CVS will be transferred to Subversion. The main reason for this is that Subversion supports the integration of version numbers in the executables. In this way you can always retrieve which software is used for a certain build. First the impact of the transfer will be investigated by Marcel.
16	20070619	Marcel Loose will be the librarian of the LOFAR software. The available time for this will be shared with his BBS work.
17	20070710	The known pulsar survey mode will be the next mode to support (not in its full extent but partly on-line and off-line).
18	20070710	The temporarily off-line part of the known pulsar mode pipeline will not be under control of SAS/MAC. This will be put under control of SAS/MAC as soon as that software is available in the on-line part of the system.
19	20070814	Joe Masters makes the routine to read in the TBB data.
20	20071002	Fault tolerance of the system (mainly OLAP) is put at the top of the priority list after closing the SAS-MAC and CEP integration.

Last: 20

Table round

- John is on a holiday from Friday 26 October to 2 November
- Andre is on a holiday from Friday 2 November to Friday 9 November
- Ronald is off Friday 9 November
- Michael will be away for the meeting next week