Minutes of Meeting LOFAR Software

Date:	2007-11-14
Next meeting:	2007-11-21 9:15-10:15
	Minnaert room
Present:	
Andre Gunst	Yes
Ronald Nijboer	Yes
Ruud Overeem	Yes
John Romein	Yes
Michael Wise	No

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

- Andrea in the station section should be Andreas
- Pieter in the OLAP section should be Peter
- Yurjen should be spelled as Jurjen

Announcements

- Global timelines, deliverables and milestones are defined for the NOVA3 proposal and are sent to NOVA tomorrow.
- Green light is given by the Raad van toezicht: if (1) we get a green light for spending that amount of money and (2) we get the subsidy from nature development. Expected final green light is a couple of weeks.

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. See software integration section.	Michael/Andre	20071115	Closed
45	20071030	Definition TBB control framework (so that the users can hook up their dedicated software in it)	Ruud	20071113	Open

Last: 45

Progress

Stations (André):

Achieved since last meeting:
- The last batch of Neways showed that all front end units past a 65 hour strong environmental test.
- The HBA beamforming is successfully validated. The beamtracking will be validated next week, after the first tile is installed again in Exloo. The tiles will in Exloo will be replaced as well to a distance of 1.25m from each other.

Problems / current activities:
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Next actions:
- Step 3

OLAP (John):

Achieved since last meeting:

- The compute nodes uses memory more efficiently now. That means that you can integrate for one second on one compute node for 40 stations. When the number of stations increases than you have to integrate on two compute nodes eaching integrating over 0.5 second.
- John has the BG/L test code programs running again to validate the correlator and polyphase filterbank.

Problems / current activities:
- Martin and Chris are trying to work with the input cluster free code of John.
- There is a bug when parset files are read in by the compute nodes. When reading in a BG/L parset file sometimes a fragment of the OLAP parset file is read in as well.
- 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.
- Binning flagger is implemented and ready to be validated by Pandey
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Problems / current activities:
- Testing of the fitting in the UV plane.
- Continued profiling and debugging of BBS. A report is written to predict the scaling of the profiling theoretically.
- Everything on track for Step 3.

Next actions:
- Continue with step 3 activities.

SAS + MAC + SHM (Ruud):

Achieved since last meeting:
- Operations is not running observation often with MAC/SAS because of the exotic modes CS1 can support compared with final LOFAR. However, it is possible to use MAC/SAS more often if in principal one observation is split in multiple observations in parallel. This is discussed with the operations group.

Problems / current activities:
- TBB control is ongoing.
- Since, Jurjen is not available a lot (because of operations activities) Arthur has to make 4 new Navigator screens for the TBB and Jurjen one.
- Within 2 weeks a prototype of SAS will run but not fully tested. Preferably Ruud likes to have one week extra to finish it.

Next actions:
- Step 3.

User Software (Michael):

Achieved since last meeting:
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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:
- A first test have been defined which can be used to test the complete pipeline. The idea is to switch on the digital sinewaves on a stations. This is a deterministic signal and should give the same result also if software is upgraded.
- PVSS is not able to run in 64 bit mode yet (and it will take probably several years before it can run in 64 bit mode). Till then, PVSS will not run on the front end nodes but on a separate machine (now the MCU).

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 µStations/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.

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Table round

- Ronald is not able to meet on Tuesdays anymore. Hence, all meetings will be held on Wednesdays from 9.15 – 10.15.