

Minutes of Meeting LOFAR Software

Date:	2007-10-23
Next meeting:	2007-10-30 11:00-12:00
	Paviljoen West 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

Remarks previous minutes

- In the OLAP section of the last minutes was written that for every hour an observation can be recovered in case of failures. This should be every integration period.
-

Announcements

- Monday 29 October the transfer of the step 2 software to the observatory is made
- The ZOID paper written by John, et. al. is accepted
- During the LOFAR workshop decisions about the core configuration are made
- 4 outlier LBA dipoles in the stations will be planned for enhancing the station calibration

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
44	20071610	Make agenda for the closing step 2 meeting. See software integration section.	Andre	20071023	Closed

Last: 43

Progress

Stations (André):

Since no extra functionality is needed for Step 2, this step mainly comprises enhancing robustness. Current status:

Achieved since last meeting:

- HBA front end units of three tiles are reworked now and in the loop to be tested and sprayed
- RCU firmware is modified to accommodate for 4 LBAs per RCU input

Problems / current activities:

- In the reference coordinates of CS010 the longitude is swapped with the latitude
- Communication from the test environment to Groningen is till now only possible on 1 fiber
- Step 3: The control of the HBA beamforming and validation is waiting for the reworked HBAs in the field.

Next actions:

- Step 3

OLAP (John):

Activities for Step 2 comprise integration with MAC (ongoing) and adding the ability to measure with higher bandwidth (done).

Achieved since last meeting:

- Reliability tests are performed this weekend successfully for about 85 hours with 24 microstations. uwbaarheids test.

Problems / current activities:

-
- The decision about using an input section will be made after the test environment is operational and the data goes directly into BG/L instead of via the input cluster.
- Step 3: When one station stops sending data, OLAP gets confused (Chris).
- 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:

- Step 3

Offline pipeline (Ronald):

Activities for Step 2 are finished.

Achieved since last meeting:

- The peeling algorithm to peel more than one source is proven.
- The preprocessing pipeline is distributed, tested and validated. BBS can run consequently in a distributed way to process the preprocessed data further.

Problems / current activities:

- Joris is started with the profiling.
- Fitting in the UV plane is not tested and validated yet.
- Stefan de Koning has made a flagging Python script based on median clipping which seems to work satisfying. This script will be translated to C++ by Adriaan.
- Ger is trying to run the distributed imager on his own machine and after that on the offline cluster.
- Ger is optimizing the performance of the preprocessing pipeline.

Next actions:

- Continue with step 3 activities.

SAS + MAC + SHM (Ruud):

Activities for Step 2 are ongoing. Integration with OLAP and adding functionality to SAS + MAC + Navigator to control OLAP, are the main activities.

Achieved since last meeting:

- Currently the extra LCUs (CS030, CS031, CS032) on CS010 are synchronised properly with the pps on CS010.
- Max made his own analysis model for CS1 and can already determine if components are healthy or not.
- A nano kernel for Fedora 6.0. was made The reason for this is that the new hardware we currently get in is not supported by the old Red Hat version.

Problems / current activities:

- PVSS databases do not work on CS031, CS032, CS033
- Ruud worked on the runtime metadata. Some existing software needs to be revitalized.
- Step 2: Integration with OLAP / ACC is ongoing (Ruud).
- Arthur and Jurjen are busy adopting the Navigator screens.
- ETM will be asked to make an alerting system for us. They can do that because we have a maintenance contract with them.
-

Next actions:

- Solve the problems related with Step 3.

User Software (Michael):

Achieved since last meeting:

-

Problems / current activities:

- Joe started with the software to read the TBB data (necessary for Step 3)

- Post CS1: Joe Masters is busy with handling the streaming data coming out of the correlator and writing this into HDF5 format or Measurement Sets. The first library is done and needs to be tested (cannot read from the socket yet).

Next actions:

- Solve the problems that are related with the Step 3 activities.

Software integration

Agenda finishing step 2 meeting

1. What is step 2 software? and what's next - Andre Gunst
2. Demonstration of MAC/SAS/OLAP/station integration - Ruud Overeem, Martin Gels
3. Achievements OLAP and what's next - Chris Broekema
4. Achievements offline processing and what's next - Ronald Nijboer
5. Achievements user software and what's next - Michael Wise
6. Commissioning results so far - Ger de Bruyn

Achieved since last meeting:

-

Problems / current activities:

- Marcel is working on a Wiki page for instructions how to use Subversion as a the repository.

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
- Ronald and Andre are on a holiday from Friday 2 November to Friday 9 November
-