

Minutes of Meeting LOFAR Software

Date:	2008-01-09
Next meeting:	2008-01-16 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 Bühren, Dion Kant, Johan Hamaker

Remarks previous minutes

- a** In the Announcements section: Contract of Martin Gels is extended by 1 quarter instead of 1 month

Announcements

- a** The WAN tender is out now
- The stations roll out will be done per 4 stations
- CEP tender is on a hold till the meeting with IBM is held next Thursday

Action item overview

ID	Date submitted	Description	Owner	Planned date	Status
40	20070710	Revise software plan	Michael/Andre	20080131	Ongoing
46	20080109	Testing SAS/MAC on CS001T with the new OLAP software	Ruud	20080116	Open
47	20080116	Plan software meeting to estimate software effort	Andre	20080123	Open
48	20080116	Plan discussion about HDF5	Michael	20080214	Open
49	20080116	Simultaneous data storage of TBB and in OLAP to validate inverse poly phase filter bank of Kalpana	John/Andre	20080204	Open

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Progress

Stations (André):

Achieved since last meeting:

- RCU firmware upgraded, now also the version number can be read out

- Meeting held with Andreas Horneffer about the TBB. First tests in Dwingeloo will be done and thereafter in Exloo.
- Kalpana Singh needs raw antenna data and compare it with the filtered data at CEP to test the inverse polyphase filter operation
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Problems / current activities:

- There are still problems with the long distance delay tracking
- The cross correlation on CS010 showed unexpected behaviors which is currently under investigation with high priority.

Next actions:

- Step 4

OLAP (John):

Achieved since last meeting:

- Performance measurement were done for the two core ZOID software.

Problems / current activities:

- Two core version of ZOID is not completely stable yet. During start up time crashes are seen when large partitions are used.
- Martin is busy to prepare for the multi-beam mode.
- Robustness for failing disks is not included yet.
- Chris worked on the CEP procurement document

Next actions:

- Step 4

Offline pipeline (Ronald):

Achieved since last meeting:

- Ger van Diepen build the imager on the offline cluster in Groningen. He is now busy to update the imager with a new version. Gianni Bernardi will use this imager to exercise it.
- A first design of the global solver is made.
- Calibration plan is updated. This will be iterated with the engineers.

Problems / current activities:

- Pandey is completing the validation and testing of the pipeline including UV-fitting.
- Coding for BBI is essentially done. Related Step 4 activities will focus on testing and validation. We need some documentation as well as an overall testing and validation plan.
- Maaikje will be working in Leiden to implement the ionosphere model in BBS

- We need to schedule a meeting on visualization tools/issues soon.

Next actions:

- Step 4.

SAS + MAC + SHM (Ruud):

Achieved since last meeting:

- The issue of the timestamp shift in the CEP data by 1 second is solved.
- Pieter modified TBB driver so that it writes trigger parameters to a file.
- Collecting requirements of the offline cluster
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Problems / current activities:

- Coordinate issue: protocols between CalServer, BeamServer and RSPDriver are made 64 bit compatible. In Marcel's software the geo centric coordinates should be changed.
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Next actions:

- Step 4

User Software (Michael):

Achieved since last meeting:

- Joe has build the TBB reader successfully on offline cluster. He will start to work on a version to enable reading in from the socket.
- Joe did some preliminary profiling tests voor HDF5 files (write, read data access)

Problems / current activities:

- Next actions are: to update the document about the beamformer product format and do profiling on the data access layer.

Next actions:

- Review activities for Step 4.

Software integration

Achieved since last meeting:

- Contribution to archive architectural design document done.

Problems / current activities:

- Version control numbering is implemented in the RUP tool. However after tests, the software is not building anymore
- Compile a list of anticipated data products and calibration or metadata files associated with each of the pipelines.
- LOFAR development software needs to be build in Kubuntu (Michael has volunteered)

Next actions:

- Define the length of Step 4. It was pointed out that one month was a very short development window for any significant functionality upgrade.
- 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.
21	20071123	Kubuntu 7.10 desktop 64 bit OS is chosen for all machines except the BG/L and MAC/SAS machines
22	20071123	Station calibration work is smeared out over Step 4 and Step 5.
23	20071123	Global bandpass shape is moved to Step 5 because of its low priority.
24	20071211	Multiple beams per observation will be implemented instead of multiple observations (this is consistent with the plan).
25	20071211	Step 3 will be closed next Thursday. Any open items will be finished in Step 4.

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Table round

- a** John: What is the procedure to update the LOFAR software? This is a question to be answered by operations.
- André: Is there a need to increase the amount of storage on the offline cluster.
Answer (Ronald): yes there is, because the 10 Gb Infiniband network is not performing. According to John that is due to the NFS server. Furthermore the offline machines are very old and updating the NFS server is not a solution because then the machines themselves are too slow. The quick solution is to buy bigger disks.
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