Minutes of Meeting LOFAR Software

Date:	2009-04-01
Next meeting:	2009-04-08 9:15-10:15
	Multimedia room
Present:	
Andre Gunst	Yes
Ronald Nijboer	No
Ruud Overeem	Yes
John Romein	Yes
Michael Wise	Yes

cc: Arnold Meijster, Rob van Nieuwpoort, Arthur Coolen, Jurjen Sluman, Pieter Donker, Chris Broekema, Martin Gels, Joris v. Zwieten, Marcel Loose, Adriaan Renting, Ger van Diepen, Max Avruch, Michiel v. Haarlem, Jan Reitsma, Ger de Bruyn, Arno Schoenmaker, Hanno Holties, Corina Vogt, Jan Noordam, Joe Masters, Lars Bähren, Dion Kant, Johan Hamaker, Maaijke Mevius, Sven Duscha, Jan-David Mol, Teun Grit, Alwin de Jong.

Remarks previous minutes

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Announcements

- This week there is a TBB busy week scheduled.
- The CS302 field antenna cables are digged and routed.
- The BG/P was down for a while because of a power cut of 10 min. The main cause of the long downtime was because the BG/P database server is gone down as well. The server is placed behind the no-break which did not operate. This is currently under investigation by CIT. During the meeting the BG/P was operational again.

Action item overview

ID	Date submitted	Description	Owner	Planned date	Status
81	20090311	Investigate possibility of "in between modes" of the LBA configuration (different than sparse, dense, …). The sparse configuration is defined by Stefan, et. al. It is possible to use other than sparse configurations, but this takes extra work. We will not support this now.	Ruud	20090318	Closed
83	20090325				

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Progress

Stations (André):

Achieved since last meeting:

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Problems / current activities:
- The HBA calibration waits for the first HBA field.
- The LBA calibration verification waits for the first LBA field.

Next actions:
- Continue with LOFAR20

OLAP (John):

Achieved since last meeting:
- The BG/P is up and running again.
- Alwin is taking over part of Martin's work.
- Martin did not work yet on transforming the BG/L getstats script to BG/P getstats script.
- Rob, Jan-David and John wrote papers for a supercomputing journal.
- Martin made OLAP work under Cmake. John will test it too.
- Martin made format changes for interfacing with MAC.

Problems / current activities:
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Next actions:
- Continue with LOFAR20

Offline pipeline (Ronald):

Achieved since last meeting:
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Problems / current activities:
- Polarisation imaging is done by Maxime (this starts in April).
- Evert Rol will work on the regression test suite for the imager.
- Ronald is busy with a document about beam modeling.

Next actions:
- Continue with LOFAR20

SAS + MAC + SHM (Ruud):

Achieved since last meeting:
- Pieter is working on getting the TBB driver up to date. The TBB interface document was not up to date yet.

- Next week Ruud and Michiel will sit together discussing about the coordinates.
- We need real coordinate files for the antennas. As soon the antennas are installed there position will be measured.

Problems / current activities:
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Next actions:
- Continue with LOFAR20

User Software (Michael):

Achieved since last meeting:
- Pipeline integration goes very well. They have already installed the source finding package on the cluster. It is not yet connected to the imager.
- Bart implemented some of the suggestions making the connection with the LSM and installed a first prototype on the cluster.
- Lars and Joe have mainly be busy to support the TBB busy week. The current version of the DAL library timed out if a certain packet was not received within a couple of seconds. Furthermore, there was an issue about the packet ordering. They have found a fix and implement it now.
- Ken is working on an update of the image cube data format definition document.
- Alwin has a first version of the beamformer datawriter which connects to Jan-David's beam model. He has a version which watches the socket and writes it to HDF5.

Problems / current activities:
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Next actions:
- Continue with LOFAR20

Software integration

Achieved since last meeting:
- Marcel, Martin and Lars are busy merging to Cmake.

Problems / current activities:
- Compile a list of anticipated data products and calibration or metadata files associated with each of the pipelines. It is a task on the task list.

Next actions:

- 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.

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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.
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.
26	20080130	Multiple beams are defined as multiple directions with the same set of antennas. Hence, only the angle, subbands and beamlets can be modified per beam.
27	20080206	Step 4 and Step 5 for MAC/SAS will be changed. The control of the offline pipeline will be postponed because the offline subsystems are not fixed yet. Currently the definition and design of the metadata flows will be set as goal for Step 4 and the implementation of the metadata flow will be the end goal of Step 5. Hence, after Step 5 (part of) the metadata is included in the Measurement Set.
28	20080213	Currently a single subband and single beam is stored in a Measurement Set. As soon as we are ready for mosaicing this probably should be changed in the future.
29	20080220	For storing the raw station beams the sanitizing operations like input buffer will be included in the online part. For this OLAP has to give operational support or instructions to the observers how to start up manually such observations. Since, this is an between solution this will not be automated via SAS/MAC.
30	20080227	Weekly build environment will be updated and automated.
31	20080227	After Step 5 the software documentation will be updated and obsolete packages will be removed.
32	20080423	Basically two Low Band modes will be supported initially: a LBL and LBH mode. The connection between antennas and RCUs have to be chosen such that those to modes make sense.
33	20080528	The position of all individual dipoles will be made available centrally in the database.
34	20080603	The data format of the positions will be delivered in ETRS coordinates by the roll out team. However, the data format of the positions will be stored in ITRF format in the LOFAR databases. Hence, all software and configuration files dealing with coordinates must be made compatible with the ITRF dataformat. Hans van de Marel is responsible to convert the ETRS coordinates to ITRF coordinates for the LOFAR system.
35	20080903	Kubuntu will be installed on LOFAR18, which will serve as a software development machine.
36	20081022	Station cabinet will be heated (if necessary) to 10 degrees Celsius (for the LCU).
37	20081029	We will transfer the build environment to cmake.
38	20081029	Step 1 will be closed at 11 November.
39	20081112	Bugs found in the field have the highest priority to solve. Bugs which take more than a week to solve will be added to the task list and prioritized in the software meeting. During bug solving tests should be written up, which proves the correct behavior. These tests will result in a procedure to check the functionality when new soft/firm ware is loaded.
40	20081126	The 4 bit mode will be supported after MS^3.
41	20081203	We will modify the build environment to cmake from now on.
42	20090129	Transient source modeling tool under Python will be used for source modeling.
43	20090129	Delay deadline of Step 2 to 26 February 2009.
44	20090209	Remote Stations including the ring splitter near the core will be renamed to CS stations.

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Table round

- Ruud is off in May for 5 weeks
- André is off in June for 4 weeks