

Minutes of Meeting LOFAR Software

Date:	2010-01-27
Next meeting:	2010-02-03 9:30-10:30
	Multimedia room
Present:	
Andre Gunst	Yes
Ronald Nijboer	No
Ruud Overeem	Yes
John Romein	Yes
Michael Wise	No
Harm Munk	Yes
Hanno Holties	No

cc: Arnold Meijster, Rob van Nieuwpoort, Arthur Coolen, Jurjen Sluman, Pieter Donker, Chris Broekema, Joris v. Zwieten, Marcel Loose, Adriaan Renting, Ger van Diepen, Michiel v. Haarlem, Jan Reitsma, Ger de Bruyn, Arno Schoenmaker, Hanno Holties, Corina Vogt, Jan Noordam, Joe Masters, Lars Bähren, Johan Hamaker, Sven Duscha, Jan-David Mol, Teun Grit, Alwin de Jong, Frank Breitling, Anastasia Alexov, Jason Hessels, Joeri van Leeuwen, John McKean, George Heald.

Remarks previous minutes

- Ger van Diepen (via mail) in system integration section: Chris his changes in the data format do not require an update of the casacore library. They only require an update of the LofarStMan library which is part of the LOFAR repository.
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Announcements

- Jan-David received his Phd!
- Tautenburg station is online now with the full bandwidth. A first fringe was detected with a Dutch station.
- The link between Juelich – Amsterdam is shared with eVLBI. Thursday 28 January link tests will be performed in collaboration with eVLBI.
- Now an imaging busy week is held in Leiden.

Action item overview

ID	Date submitted	Description	Owner	Planned date	Status
96	20100113	Organize meeting about the benchmark results of the imaging pipeline. Done. John Romein will assist in estimating the required resources and how this compares with the benchmark results.	André	20100120	Closed
97	20100113	Should more people of the observatory be participating the standard imaging pipeline meetings?	Harm	20100120	Open
98	20100113	Organize a meeting to decide on the	André	20100127	Open

		repositories structure and issue/bug trackers for LOFAR. Meeting is planned.			
99	20100113	Report on release management.	Harm	20100127	Open
100	20100120	Discuss actions to be done for the LOFAR opening.	All	20100127	Open
101	20100120	Assign subcluster one for running the standard imaging pipeline. Yes we will use subcluster 1 for the imaging pipeline.	André	20100127	Closed
102	20100127	Get clear how users want to do 2000 observations in a week for MSSS.	Ruud	20100210	Open
103	20100127	Why is the station hardware not used more often?	Harm	20100203	Open

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Progress

Imaging Pipeline (Ronald):

Achieved since last meeting:

- How to do 2000 observations in one week. Can we use the scheduler of Alwin for this. What changes are required in MAC/SAS or OLAP? Before detailing this more, a number of questions need to be answered. Ruud will participate in the next imaging pipeline meeting to fire off those questions.
- Next Tuesday the LBA BeamServer will be tested. The week thereafter the tests
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Problems / current activities:

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Next actions:

- Focus on the minimal required tasks for MSSS.

Pulsar Pipeline (Michael):

Achieved since last meeting:

- This afternoon there will be a meeting.
- Jan-David is busy with the second transpose operation.

Problems / current activities:

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Next actions:

- Implement second transpose operation.

- Update BF datawriter.

VHECR Pipeline (Michael):

Achieved since last meeting:

- Meeting with the UHEP people have been held to discuss the implementation of the inverse polyphase filterbank and the rest of the UHEP processing steps. One of the conclusions was that the UHEP people can already start with tied array data (which is also used by the pulsar people). The second transpose which is necessary for this mode is implemented by Jan-David (also necessary for the beamformed pipeline). John will investigate further in detail the load of the required steps on the BG/P. However in order to do so, the functional (not optimized) implementation has to be started. Rob van Nieuwpoort will work on the inverse polyphase filterbank. Also the different format where Chris is working on is required for the UHEP mode as well.

Problems / current activities:

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Next actions:

- Identify all tasks necessary for getting a basic VHECR pipeline running.

System Integration

Achieved since last meeting:

- OLAP is using CMake!
- Number of validated stations is now 17.

Problems / current activities:

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Next actions:

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Infrastructure (Harm)

Achieved since last meeting:

- CS001 station will be used for testing new releases of the software. After that the software will be rolled out to two additional stations. Together with the other available stations interferometer tests will be performed.

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Problems / current activities:

- Yet another meeting about the repositories and issue trackers will be organized to decide on the final way of working concerning these matters.

Next actions:

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User Data and Archive (Hanno)

Achieved since last meeting:

- Kick off of Target meeting was held yesterday.

Problems / current activities:

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Next actions:

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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 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.
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.
45	20090813	No connection from the Dwingeloo test environment to Groningen is necessary anymore.
46	20090825	Create a Bugzilla environment for the USG software.
47	20090825	Use one subcluster per group, contactpersons and guidelines defined (see section Software integration).
48	20090909	Use the filter range names of MAC/SAS for the ICDs and the archive model.
49	20101216	HBA beam pointing: we decided that one observation is prime and determines the HBA beam. The other observations will be ranked. An additional field for the HBA beam pointing can be set. If this field is not set, then an average of all digital beams will be made within the prime observation.

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Table round

- André is worried by the fact that during last weekend no observations were planned. Is the hardware not used fully and why? Probably because we generate already to much data and we do not have the people to look into that. Anyway Harm will ask head of science support (Antonis Polatidis) for an explanation.