Minutes of Meeting LOFAR Software

Date:	2010-09-29
Next meeting:	This was the last meeting
	Multimedia room
Present:	
Andre Gunst	Yes
Ronald Nijboer	No
Ruud Overeem	Yes
John Romein	No
Michael Wise	Yes
Harm Munk	Yes
Hanno Holties	Yes

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

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Announcements

- Since the observatory gets a bigger role to play it is time to reformat the current organizational structure around LOFAR. A mail has been sent by Rene Vermeulen about this. The prime responsibility for the software development and in fact the LOFAR telescope as a whole will be the observatory from now on. The following four persons will have the lead and report directly to the director of the observatory (in alphabetical order): Harm Munk, Ronald Nijboer, Antonis Polatidis and Michael Wise. They will organize weekly meetings. Those meetings are bi-weekly held with all people responsible for a working group, like pipeline working group, system testing working group, user support working group, archive working group, etc. An organizational chart will be presented later. The first meeting is planned next week.
- LOFAR processing school is two weeks from now.
- Lars has officially moved to Amsterdam.

Action item overview

ALL ACTIONS WILL BE MOVED TO THE SOFTWARE DEVELOPMENT 2.0 MEETINGS

ID	Date submitted	Description	Owner	Planned date	Status
107	20100303	Issue tracker decision. Bugzilla	Hanno/Michael	20100731	Open

		(developers), Craft (system and hardware issues), science support wants to make use of the LOFAR observation tracker. For the user software the favor is for Bugzilla as well. Michael will talk to Antonis to see if this is really what we want. Michael talked to Antonis and Michael got permission to setup Redmine. John S. will give a demo to Antonis, Hanno, Harm and Michael. The sytem is ready and setup. Since Lars and John are not here this will be continued at the end of August. Superseded with a bigger action as mentioned in the table round section.			
123	20100623	A meeting will be held to discuss the PIL library and its compatibility with the parset files. This is on a hold, because first we want to check how much Pelican stuff there is and how this can be used.	Michael	20111001	Open
124	20100623	Organize status meeting of all pipelines in September. Date is not fixed yet. Agenda will be intro, system/rollout overview, imaging, beamformed, cosmic ray pipeline, small pipelines, operations and archive. This is put on a hold, till there is more clarity how to continue the organization of the software development work for next year onwards.	Harm, Ronald, Antonis, Michael	20100701	Open
127	20100721	Organize a pipeline integration with MAC/SAS meeting. Organized next week.	Harm	20100901	Open
128	20100901	Define scientific validation tests.	Harm, Antonis	20100908	Open
129	20100901	Decide on migration of USG stuff (forum, Wiki, etc.). Part of the unified communication plan.	Harm, Michael	20100908	
130	20100908	Moving the USG repository to the LOFAR repository.	Marcel, Lars	20101001	Open
131	20100908	Organize meeting about new and old cluster usage (development, commissioning and production).	Antonis	20101001	Open

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Progress

System Integration

Achieved since last meeting:

- The beamserver works except the LBA outer. Ruud made a patch for that.
- Pieter is looking to the RSPDriver for the X and Y swap.
- Problems have been found in the observation controller. Ruud is fixing this.
- As soon as the beamserver works than the static table should be read in as soon as possible.
- Observation controller has the priority unless Harm says it's not a higher priority after consulting a number of people.
- CEP phase 2 specification made and sent to three suppliers. Half December the hardware is installed.

Problems / current activities:

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Next actions:

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Imaging Pipeline (Ronald):

Achieved since last meeting:

- Adriaan kicked off the pipeline automatically from MAC.
- Several iterations have been held to let the pipeline to go to multiple calibration runs.

Problems / current activities:

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Next actions:

- Focus on the minimal required tasks for MSSS.

Pulsar Pipeline (Michael):

Achieved since last meeting:

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- Jan-David has finished fully implementing the 2nd transpose.
- At the Chilbolton opening the Oxford people showed a live pulsar observation using the Pelican framework. This is the single station pulsar pipeline.
- A2 and Jason are working on the scripts for multiple observations.
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Problems / current activities:

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Next actions:

- Update BF datawriter.
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VHECR Pipeline (Michael):

Achieved since last meeting:

- The cosmic ray pipeline will from now on be led by Clancy James and Rebecca McFadden.
- The electronics of the four particle detectors are installed in one field.

Problems / current activities:

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Next actions:

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Other Pipelines (Michael):

Achieved since last meeting:

- Transient detection pipeline must be run at any dataset which is taken for the imaging pipeline.

Infrastructure (Harm)

Achieved since last meeting:

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Problems / current activities:

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Next actions:

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User Data and Archive (Hanno)

Achieved since last meeting:

- BBS is running in a cluster in Groningen which will be connected to Target. Now they are also busy with the LWA imager. LTA CP software written to packetize datasets and do checksums. This is done to get the performance up more.
- Target procurement document is out. The request is: 1 PByte storage, 3 PByte tape storage and 60 Gbps external connections. Expected delivery next year.
- New proposal document for Big Grid have been prepared. This will be submitted next week. 600k hardware investment for processing. Hope to get a 128 node cluster. BG/P output data rate can go directly to storage and process it in this cluster.
- Discussion was held with Surfnet to upgrade the network connections to Amsterdam and Aachen with 40 Gbps. Possibly 100 Gbps can be implemented via Gigaport. This project finishes in 2014.

- Telecon with Juelich to run pipeline software on their cluster was held.
- There was a network meeting in Garching with all International stations.

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 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.
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	20100116	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.
50	20100303	Changes in definitions which are used in various places in the system will be decided in this meeting.
51	20100303	HBA_ONE and HBA_TWO will be renamed to HBA_ZERO and HBA_ONE for consistency reasons.
52	20100317	Change HBA_BOTH into HBA_DUAL (using two HBA ears independently) and add HBA_ALL to indicate both HBA fields will be added at station level (so treated as one field).
53	20100317	The software should be documented more. However we decide not to set this as priority now and accept this as a risk we take.
54	20100317	The CImager will be the imager used in LOFAR. This is the only one which scales up.
55	20100331	The name HBA_ALL will be replaced by HBA_JOINED.
56	20100407	It was decided earlier to have only one pointing per station beam (fixed in time).
57	20100630	Dataslot allocation scheme at stations will be implemented after the beamserver and calserver are done.
58	20100707	The HDF5 datawriter will be developed by Jan-David after he finishes the transpose.
59	20100713	The following decision has been made regarding the beam-formed naming convention: the old Station Beam is called now called Sub-Array Pointing because it can represent the sum of multiple station beams. The term sub-array refers that a subset of LOFAR is involved in this pointing. The old name Pencil Beam is renamed to just Beam. For one Sub-Array Pointing multiple beams can be made centrally. These beams can be coherent, incoherent, or whatever.
60	20100901	The raw correlator output format will be changed to support a possible bypass of the polyphase filterbank.
61	20100901	Copy USG repository to LOFAR repository server.

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Holidays

Ruud: 21 October – 15 November

Table round

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