Minutes of Meeting LOFAR Software

Date:	2010-07-07
Next meeting:	2010-07-14 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

- Section Infrastructure: "If the LTA part is excluded than at the End of October we are ready for 1.0. Including the LTA it takes to the end of May 2011." In October there will be a functional LTA as well which can ingest the supported dataproducts (UV, images and pulsar data) and that gives users access to these products. Integrated pipelines take longer. Anyway the LTA is not on the critical path and the remark “including the LTA it takes to the end of May 2010” should be omitted from the previous minutes.

Announcements

- This week a TBB busy week is held.
- The Nancay station is this week under validation and preparations are ongoing to connect this station to Groningen.
- CEP stopday is still ongoing. There are problems with the database. IBM is contacted.
- Four extra core stations are being prepared for construction.

Action item overview

ID	Date submitted	Description	Owner	Planned date	Status
107	20100303	Issue tracker decision. Bugzilla (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	Hanno/Michael	20100315	Open

		and Michael got permission to setup Redmine. John S. will give a demo to Antonis, Hanno, Harm and Michael.			
113	20100414	Define end to end quantative tests for the imager pipeline.	Ronald	20100430	Open
119	20100512	What is the procedure if rack 0 fails and we like to use rack 1? This has to be discussed with CIT. Currently LOFAR can use two racks. Harm Paas can run a script to remove scientific users from a rack. This will be automated, such that an operator can run this as well.	Andre	20100519	Closed
122	20100519	A meeting will be organized to finalize beam formed data naming convention. Attendees: J. Hessels, A. Alexov, L. Bähren, J.-M. Griessmeier, A. Renting, H. Holties, R. Nijboer, R. Overeem, A. Gunst, M. Wise, Harm Munk. This is organized at 7 July 2010.	Michael	20100526	Open
123	20100623	A meeting will be held to discuss the PIL library and its compatibility with the parset files.	Michael	20100701	Open
124	20100623	Organize status meeting of all pipelines in September.	Andre	20100701	Open
125	20100623	Next meeting: software architecture offline system and MSSS plan. Discussed lightly since both Michael and Ronald are not in today. Idea is that a small group of people discuss the issues and holes in the current design. Names mentioned are: Adriaan, Alwin, Marcel, Ger, Ruud, John Swinbank, Ken Anderson. Decision has yet to be made who will lead this process. Action remains open.	Andre	20100701	Open
126	20100630	Distribute software inventory list.	Harm	20100707	Closed

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Progress

System Integration

Achieved since last meeting:

- Michiel checked the observation results of the new beamserver. Not all were ok yet.
- Pieter is this week in Westerbork and can not work on the beamserver which reads in static calibration data.
- Ruud is busy testing the robustness of MAC/SAS.
- Arthur is maintaining SAS. He will look also to the latest version of PVSS (3.9).
- Jan-David is busy picking up the second transpose work.
- Chris is defining the phase 2 offline + storage hardware.
- Per observation you now do not need the same RAID array for all storage servers anymore. Now you can arbitrarily choose a RAID dependent how much storage

space is left. Alwin is busy making the scheduler such that it can be used in this way.

Problems / current activities:

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Next actions:

- Solutions for the high station temperature in the summer are under investigation.
- A temperature sensor will be installed in the concentrator node as well.
- 4 bit mode implementation ongoing.
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Imaging Pipeline (Ronald):

Achieved since last meeting:

- Adriaan is busy trying to start the pipeline via SAS.
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Problems / current activities:

- Control BBS should be revisited by Marcel. How to deal with failing processing nodes and the use of the global solver. Needs to be prioritized. Becomes an issue when we process with lots of nodes.
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Next actions:

- Focus on the minimal required tasks for MSSS.

Pulsar Pipeline (Michael):

Achieved since last meeting:

- The HDF5 datawriter will be developed by Jan-David after he finishes the transpose.
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Problems / current activities:

- Need to identify a new developer for the BF data writer as soon as possible.
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Next actions:

- Implement second transpose operation.
- Update BF datawriter.
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VHECR Pipeline (Michael):

Achieved since last meeting:

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Problems / current activities:

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Next actions:

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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:

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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.

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Holidays

Ruud: October or November
Ronald: 17 June – 9 July
John: 19-+3.5 week
Michael: 4-20 August
Hanno: 12 June – 6 August
Andre: 2-27 August

Table round

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