

Minutes of Meeting LOFAR Software

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| Date: | 2008-01-30 |
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| Next meeting: | 2008-01-16 9:15-10:15 |
| | Paviljoen West 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

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Announcements

- At the first Monday of the month February it was planned to remove the input clusters for the daily observations (the switch which is necessary for this was finally arrived). However, now HBA commissioning is about to start this is not the right moment. John remarks rightly that observations take place with obsolete software and that a lot of bugs are solved in the meanwhile. Hence, this operation is postponed by one week. If the HBA commissioning is done first only on CS010 by using the station correlator we can do this operation one week later.
- Polen intends to build 3 stations. RFI measurements will be done to check the RFI environment.
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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. SAS part is producing a parameter set which can be used by OLAP. Almost done. The connection to Groningen was down, which will be solved today. | Ruud | 20080116 | Ongoing |
| 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 |
| 50 | 20080130 | Check H7 which was distributed by Ruud about the metadata | All | 20080206 | Open |

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Progress

Stations (André):

Achieved since last meeting:

- Stefan has recorded three days of data which is used to check the station calibration algorithms functionally.
- The cause of the disability to set the HBAs is solved. One of the configuration files was not set properly.
- The cost optimized HBA prototype is functional. Detailed measurements will be done to validate various aspects of the new HBA element.
- Two modes have been implemented in the TBB driver. Continuous mode, wherein the LCU determines the freeze moment and a one shot mode, where the FPGAs determine the freeze moment. The last one is necessary in case to many triggers are generated due to wrong settings of the trigger algorithm.

Problems / current activities:

- Long distance delay tracking is not tested again
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Next actions:

- Step 4

OLAP (John):

Achieved since last meeting:

- Peter made kernel modifications to solve the two core version of the ZOID problem.
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Problems / current activities:

- 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:

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Problems / current activities:

- Joris worked on the global solver
- Maaïke worked on the implementation of the Karhoene-Louve ionospheric model in Meqtrees
- Ger and Maaïke have worked on the visualization of the calibration solutions.
- 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.

Next actions:

- Step 4.

SAS + MAC + SHM (Ruud):

Achieved since last meeting:

- Pieter adapted the TBB driver to support the two TBB modes mentioned in the station section
- The RSP Driver is extended such, that the RCU firmware version can be read out. This is installed on all stations in the field.
- Ruud made a first chart of the available metadata.

Problems / current activities:

- Pieter is busy to work on the cable length compensation, which must be set from the LCU.
- Max is busy to make the web application of SHM.
- Arthur is making the offline part inline with SAS. Specifically the imager.
- For BBS is not known yet what the final strategy is. Hence, not much effort is put in the integration of SAS/MAC and BBS now.
- Ruud will check with Pandey the DP3 interface.
- 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:

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Problems / current activities:

- Joe is checking how much work is required to connect DAL to CASA core for using the HDF5 data format
- Lars is busy getting the USG webserver up after a machine went down.
- Joe has built the TBB reader successfully on offline cluster. He is busy with a version to enable reading in from the socket.
- 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:

- Version control numbering is implemented in the RUP tool and is ready for testing again.

Problems / current activities:

- The software plan is rewritten currently
- 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.
- 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. |

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| | | 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. |

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Table round

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