Minutes of the busy Wednesday videocon of November 3rd

Present: Roberto, Emanuela, Gabriele, Bas, Reinout, Ilse, Aleksandar, Annalisa, Rosita, Francesco, Joris

Progresses with the commissioning:

1. Many people contributed to the data reduction of the **3C196 observation (L2010_20852)** performed with the new beam server. Thanks to everybody for your efforts and for the fruitful discussion, now also reported in the Lofar forum. The analysis suggests that the ITRF beam server is properly working.
I'm now processing all the sub bands through the pipeline using the parsets and the model provided by Annalisa, Cyril, and Rosita. Then, we could make a final image.
It is important to compare the results of this new observation with those of old observations performed with the old beam server (see point number 2 in the file **Available_data_busy_Wednesday.pdf** that I sent around 3 weeks ago) . Annalisa and Rosita are already working on this.

   Working group: Annalisa, Cyril, Rosita, Gabriele(new)

2. **Virgo observation (L2010_20313**). Chiara distributed a report on the flagging results with NDPPP and AOFlagger. It would be good for everybody to read also David's document on the performances of the 2 flaggers. See attachment to this e-mail.

   Working group: Roberto, Emanuela, Chiara.

3. Bas is testing his **'facet-based imager'**. He simulated data of 9 point sources on a 3x3 grid. The sources are imaged successfully.
This simulation was limited in scope since:
- no noise was added
- no gain variation was applied in the simulation, and no calibration
  was used
- the point sources were exactly at the centers of the facets

   We will test this imager during the short busy week taking place in Leiden in December (see below).

4. Laura inspected the pipeline outputs of 10 minutes **MSSS-like observations of 3C465, 3C380**, and **3C196**. The BBS solutions look fine overall, especially for 3C196. To properly test the self-cal loops to improve the quality of the final image in the pipeline, we need to extract sources after MWImager. Bart has a script that could be used for this. More info about this will come later.

   Working group: Laura, Giulia, Aleksandar (new)

5. Aleksandar was working on a short **3C380 observation (L2010_20231)** and made a final image.

6. Francesco worked on the **Cygnus A observation (L2010_20311)** and imaged 90 sub bands. He also produced a spectral index map, which shows weird values in the regions near the SW hot-spot and the core. Possible artifacts could be present in a few single sub band images…this will be investigated.

   Working group: Ilse, Francesco

Issues

solved:

1. I spoke with Andre' Offringa and he increased the threshold for baseline rejection in **rficonsole** from 6 to 8 sigma.

2. Andre' Offringa implemented a new function in the AOFlagger that increased the speed of data flagging by a factor 3-4. The only inconvenient is that the program first needs to make a copy of the data, and therefore more disk space is required. A detailed description of this functionality is in the forum.

Opened (I will report them also in the forum)

1. David **tested the new threshold in rficonsole.** The flagger seems to give better suggestions than what it used to. However, David also reports the following:

   "I'm still not convinced that this approach is going to work well to identify baselines that should be flagged. I guess the assumption with the current implementation is that, when a baseline has an unusually high amount of RFI (relative to the other baselines), all data for that baseline is suspect (perhaps because AOFlagger will miss RFI in the remaining unflagged data?). I'm not sure whether this is really true or not.
   Also, it seems that all of the baselines flagged as bad in my tests of the Virgo A observation (L2010_02313) have a lot of good data that was flagged incorrectly, likely because of the strong time-varying nature of the amplitudes. So, we may need to use somewhat different flagging parameters for observations of very bright sources. I'm trying some tests with different window sizes to see if this can be improved."

   David is in contact with Andre' Offringa about this point.

1. The commissioners requested a **log file out of RFIconsole**. This will be implemented within few weeks. I will keep you posted.

2. Joris and Bas discussed about the implementation of a **weighting scheme in bbs**. They will work together on this. In the meantime, Bas will provide a script that can perform the weighting as a separated step after BBS. We will be able to test this soon.

    3. After BBS it is necessary to run **clearcal** if we want to inspect the data with CASA (e.g. casaplotms). Could this step be removed?

3. When running the "calibrate" command for bbs, no error is reported on the screen if the specified output directory is wrong -> could we have an **error message**?

4. When running BBS we have no idea of how long the program will take to complete. Would it be possible to have a **completion bar** on the screen?

5. It is important to collect the best **skymodels** that we have available for the A-team and 3C sources. Please, if you have better models than those available in /home/pizzo/EXAMPLES/Models, send them to me.

Announcements

1. I and Adriaan Renting are **collecting scripts** made by the commissioners for LOFAR data reduction. They will end up in a common location: opt/tools/cookbook. They will be described both in the README file (also at this location) and in the wiki webpage

    http://www.lofar.org/operations/doku.php?id=engineering:software:tools#

    The scripts will be presented and discussed in the next version of the Lofar Imaging Cookbook.

2. After the last busy Wednesday there has been the suggestion to put important conversations between commissioners, software developers, and users in the **Lofar forum**. The e-mail exchange about the data reduction of the 3C196 observation performed with the new beam server is now also there. Please, let's continue this way also in the future! If you are interested in a topic, it is possible to enable notifications from the forum to your e-mail box. It is easy to understand how do this in the web site itself. I strongly recommend everybody to use this tool!

3. A short **busy week will take place in Leiden in December (14-16)**. This will be aimed at testing the imager from Bas.

4.   **The next busy Wednesday will take place in 3 weeks time (November 24).**