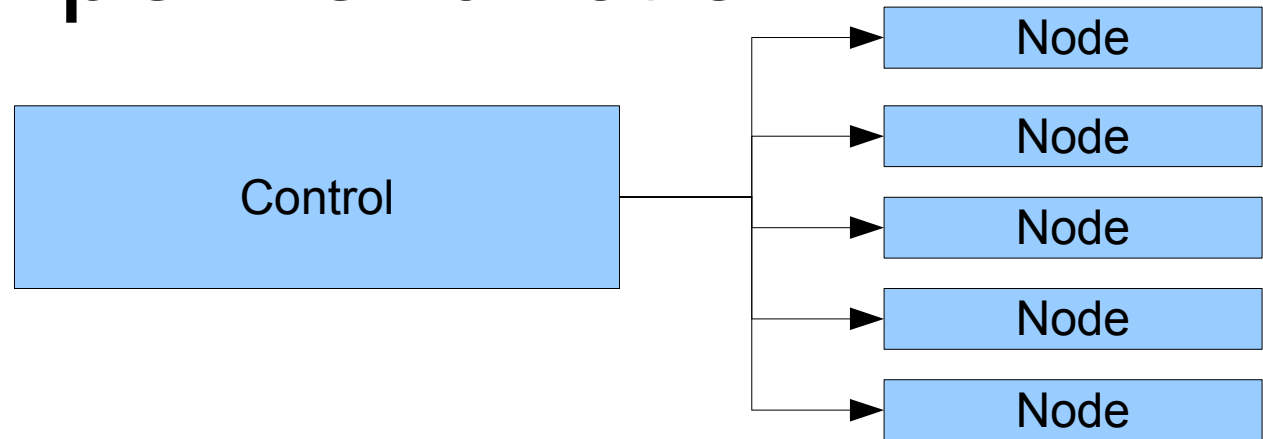


Data Post Processing Pipeline and Tools

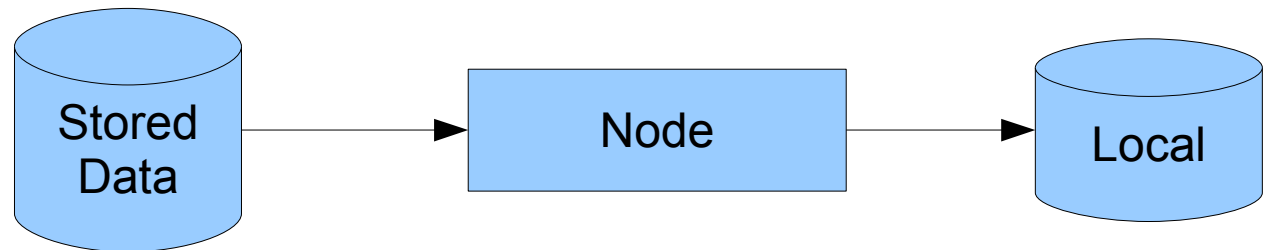
- Pipeline function
- Pipeline usage and documentation
- Flaggers
- Other available tools

Pipeline function

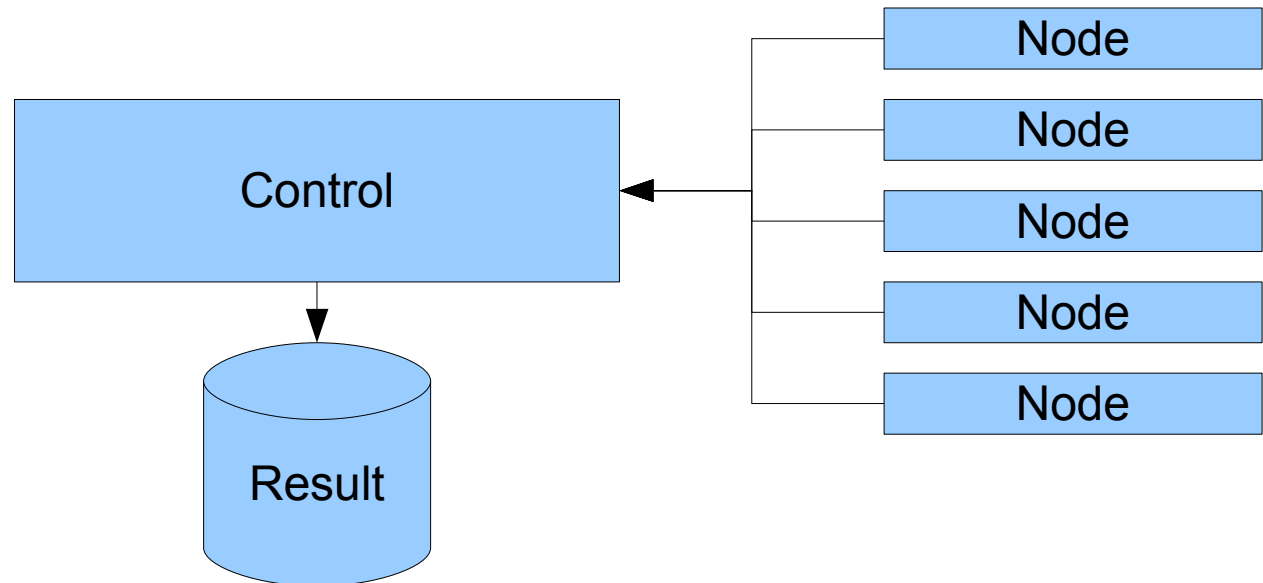
Step1:
Distribute



Step2:
Get data and
process



Step3:
Gather and
combine



Usage and documentation

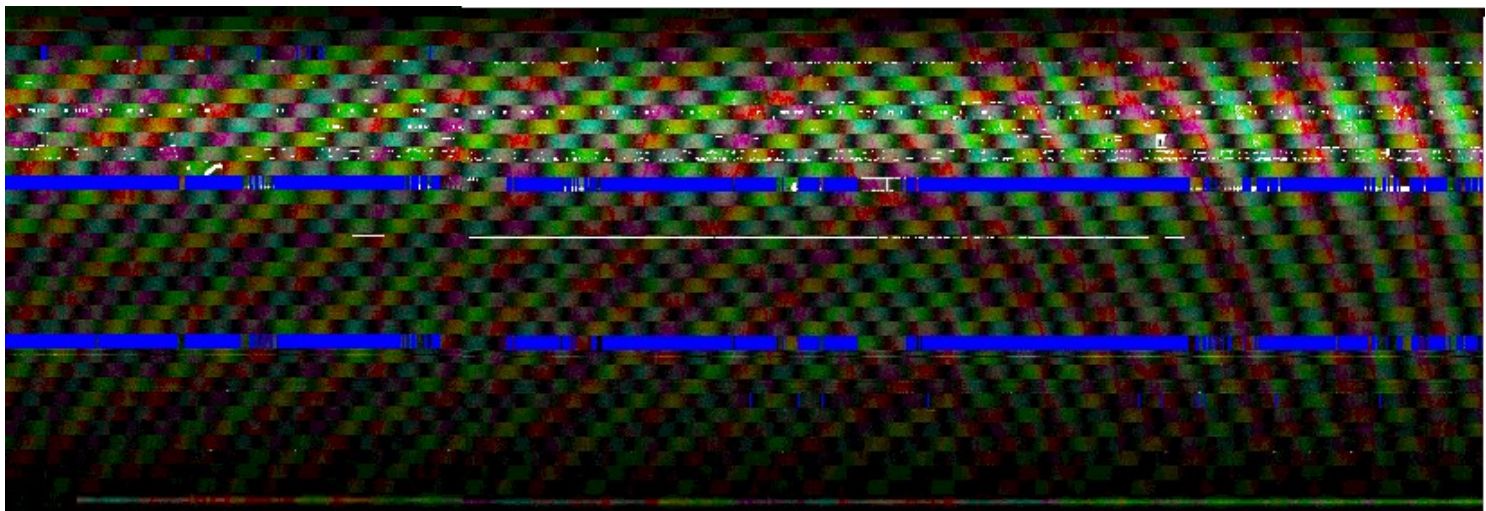
- General documentation:

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

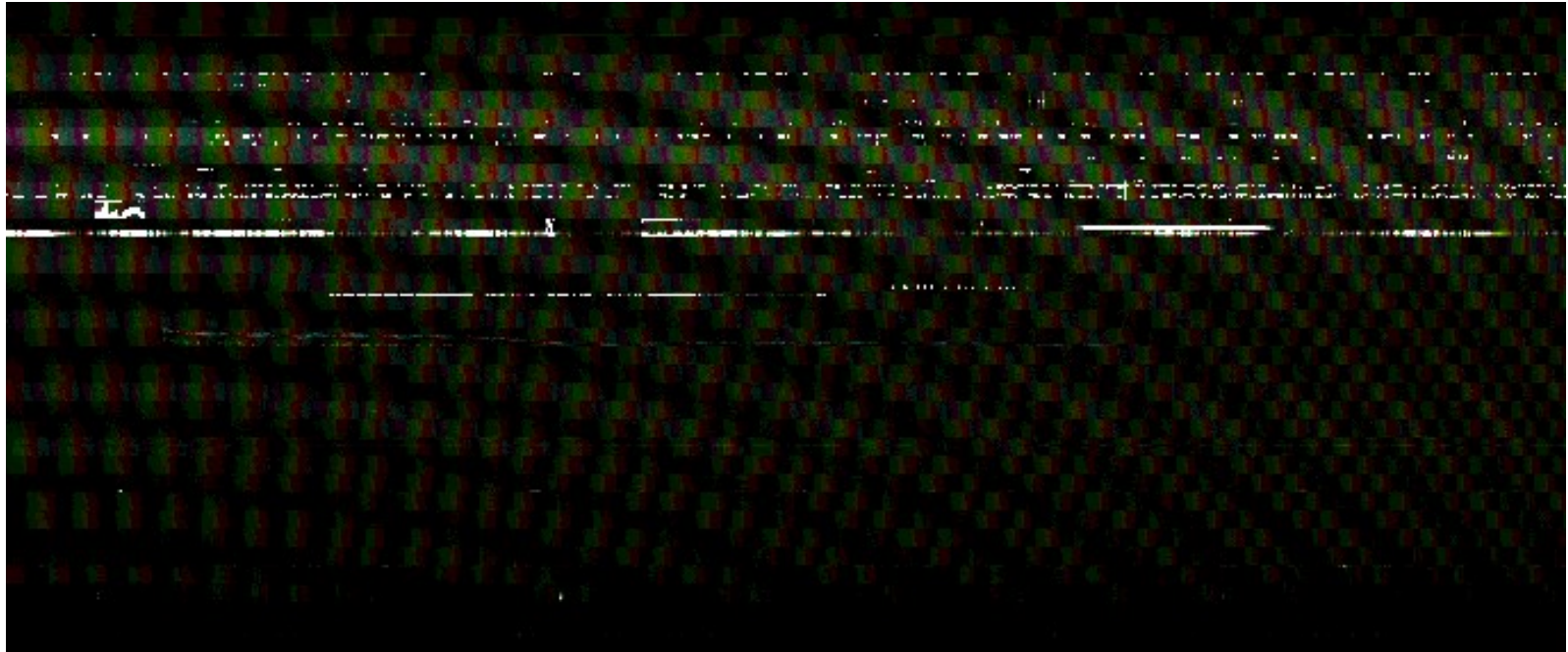
- Usage:

```
source /app/scripts/doUnstableAIPS++
eval `ssh-agent`
ssh-add
setenv APS_LOCAL /app
source /app/scripts/doPython
python CS1_Offline_pipeline_control.py -f/home/renting/dec3.txt -rdec3
```

- Editing the scripts

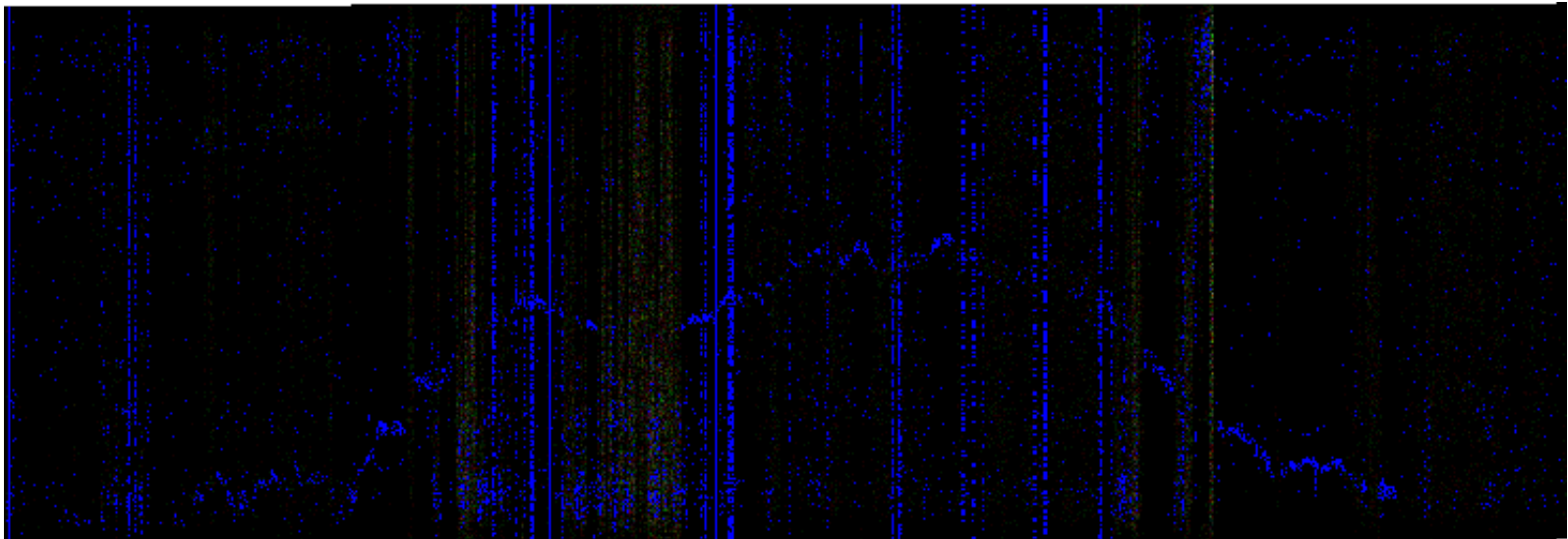


RFI in result dataset

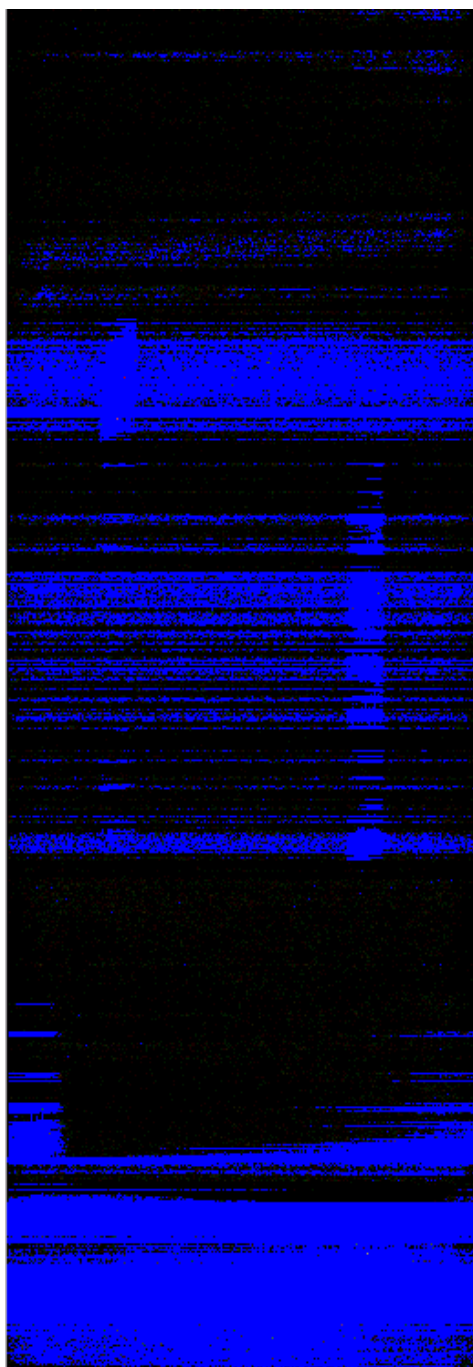


Flaggers

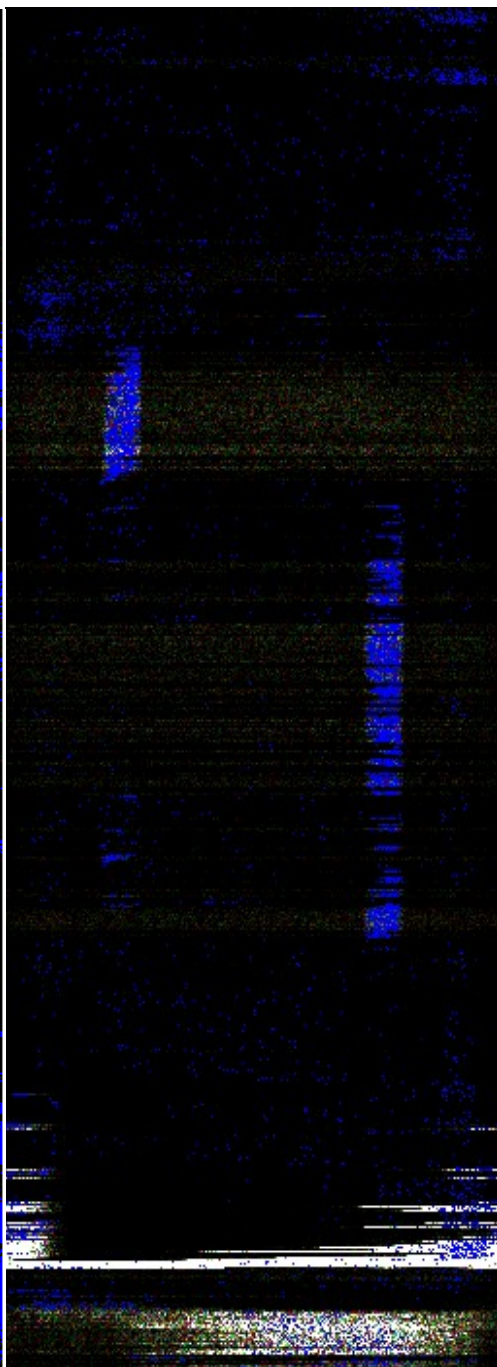
- Modified WSRT ComplexMedian Flagger
- Frequency Flagger
- Binning Flagger
- Combined Frequency and ComplexMedian Flagger



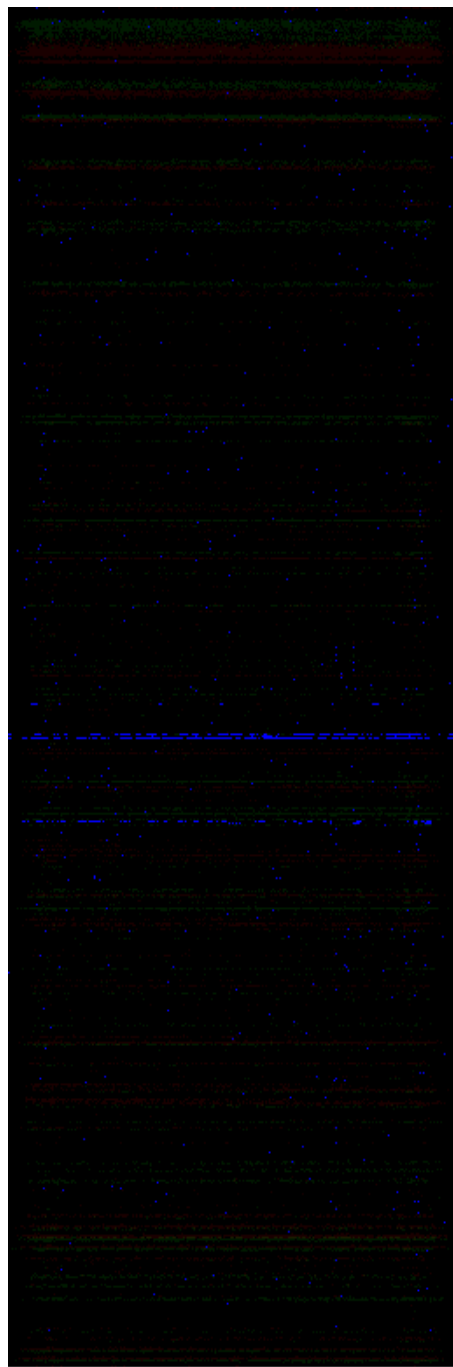
Flagger



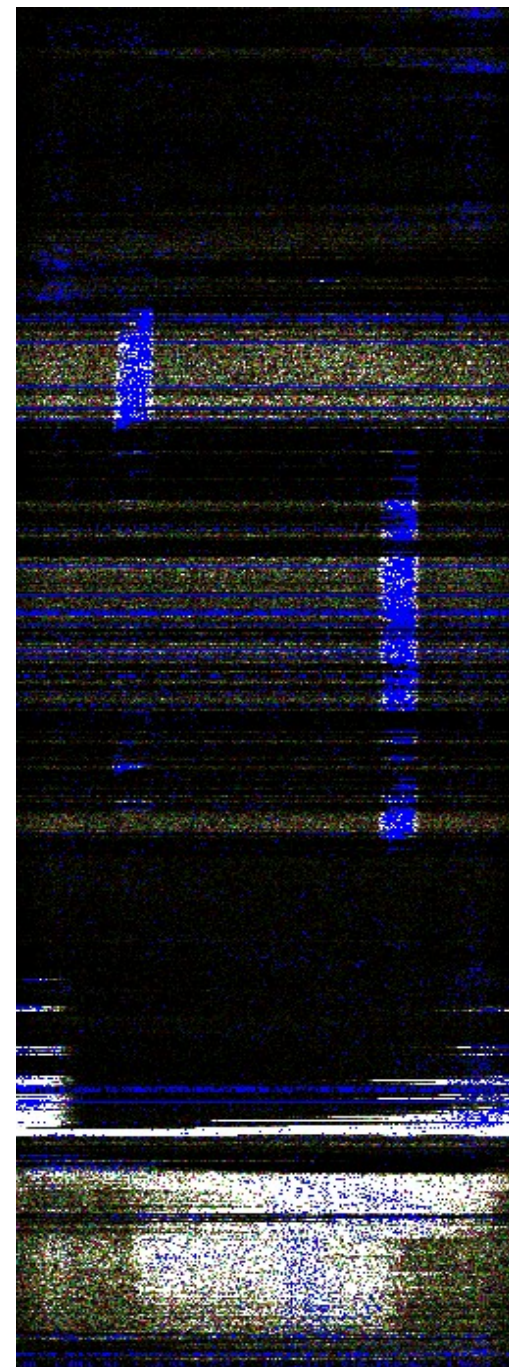
Frequencyflagger



BinningFlagger



Flagger2



Flagging results

- Flagger: Needs manual thresholds
- FrequencyFlagger: Has problems with broad RFI
- BinningFlagger: Slow
- Flagger2: Has same problems as FreqFlagger

Flagging timing on 6GB data

- CS1_Flagger: 10-15 minutes
- FrequencyFlagger: 10-15 minutes
- BinningFlagger: 3-4 hours
- Flagger2: 15-20 minutes

Other tools

- General documentation:

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

- Example scripts in /app/example_scripts

- * LofarTimeGrab - Glish script to grab a number of timeslots from the MS.
- * LofarTimeSplit - Glish script to split the MS into shorter chunks based on time.
- * CS1_BandpassCorrector - For correcting for the bandpass.
- * CS1_DataSquasher - For reducing the number of channels in a Spectral window.
- * CS1_SPWCombine - For combining several Spectral Windows into one.
- * squash - Create a continuum Measurement Set.
- * CS1_Imager - Imager module based on the AIPS++ Imager.
- * CS1_DFTImager - DFT Imager.
- * auto_flag - Script that flags all auto correlations.
- * LofarParset - Python script to write parset files easily.
- * CS1 python tools - Various tools for accessing MS data and flagging it, primarily by

Stefan de Koning.

- * Noise - Source finding package by Niruj Mohan Ramanujam.
- * BlackBoard Selfcal - Self calibration of LOFAR observations.
- * USG Data Access Library by Joe Masters.
- * PyRap / PyCasa_tables by Ger van Diepen and Malte Marquarding.