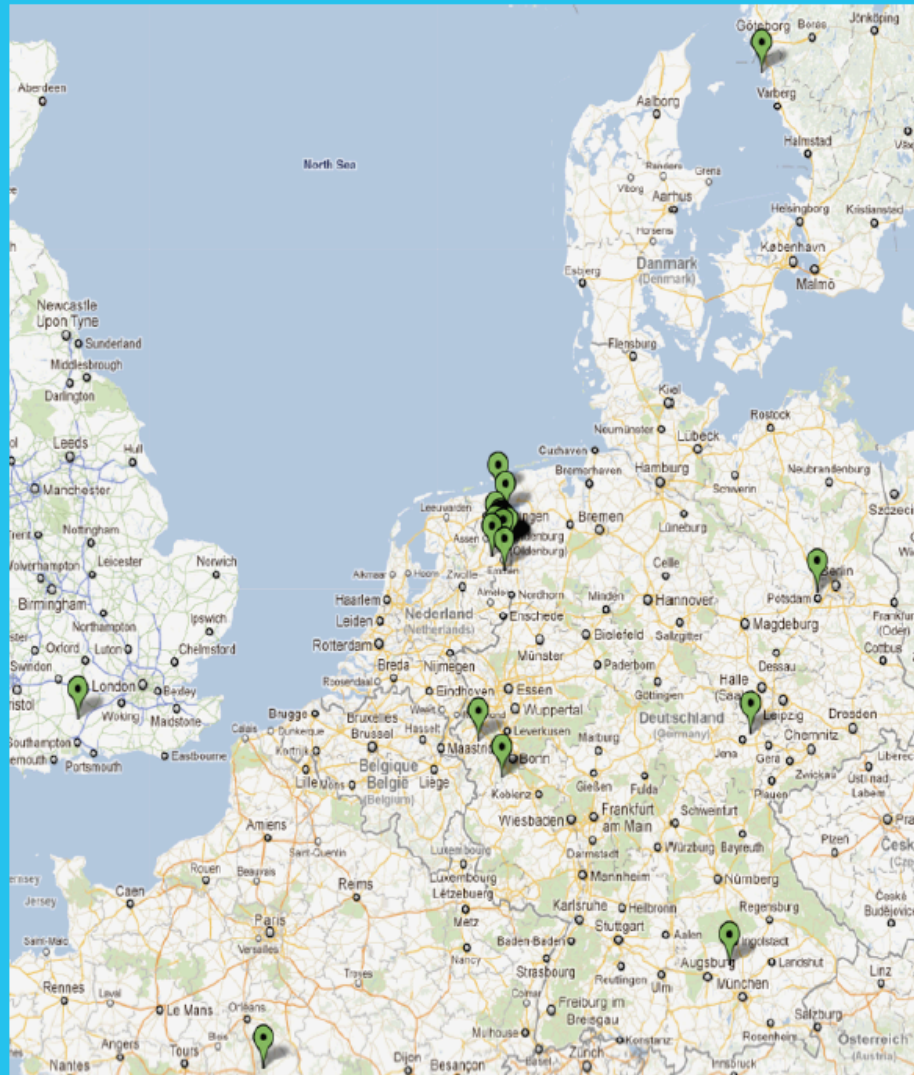


## Programme:

- 1. Array status – H. Munk*
- 2. Observatory update – R. Pizzo*
- 3. Update on the COBALT project– R. Nijboer*
- 4. All-sky polarization Imaging using TBB-Data (LC0\_044) – J. Koehler*

# Array status



## Current Status:

- 37 operational NL stations
- 24 CSs
- 13 RSs
- 8 ISs
- RS210: network connection expected by mid May

[www.astron.nl/radio-observatory/astronomers/current-status](http://www.astron.nl/radio-observatory/astronomers/current-status)

# Network, CEP status



## Network

- Still unresolved network problems on the link from DE602

## BG/P

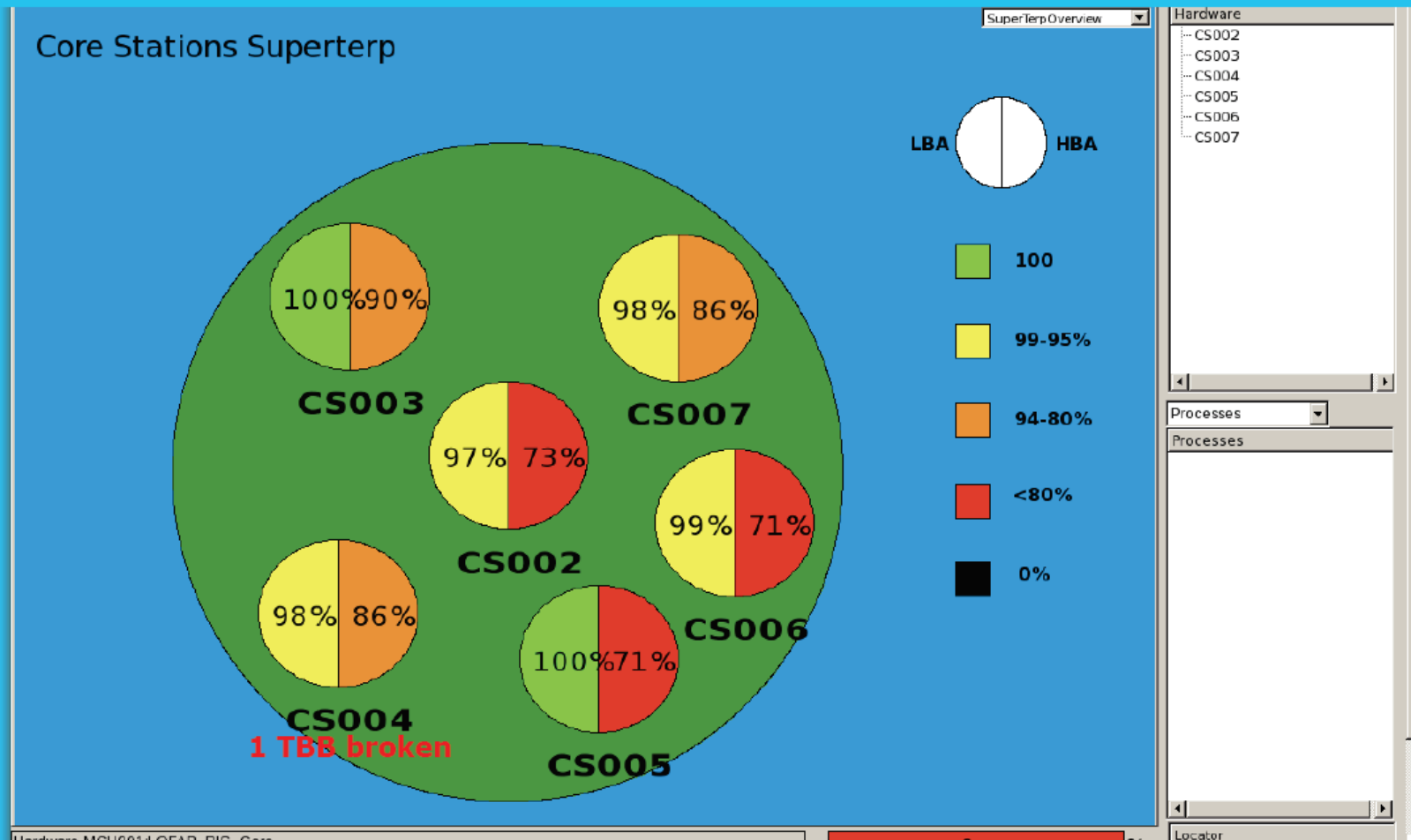
- Performance nominal

## CEP-I/II

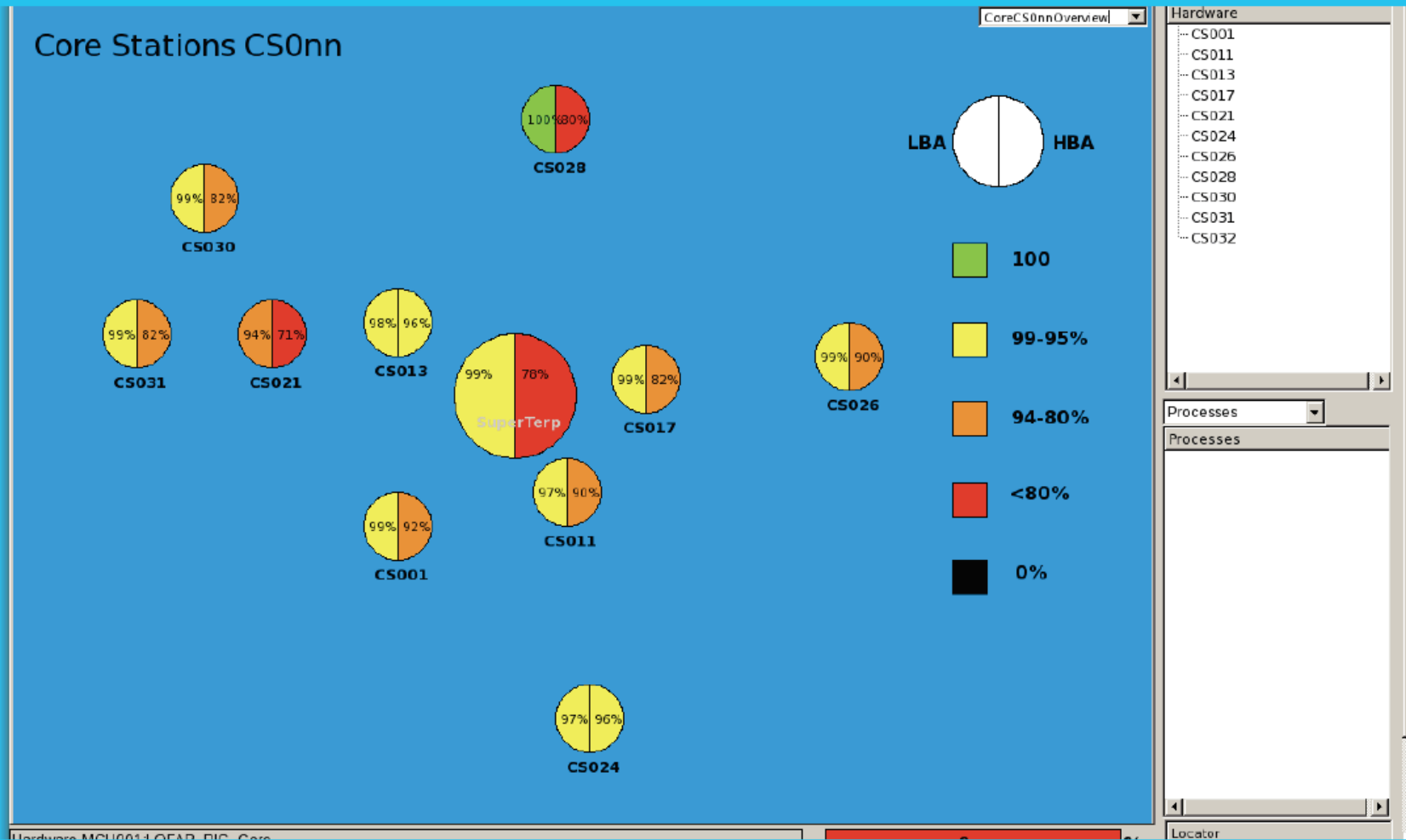
- No issues during stop day

Next stop day: Tuesday, April 9

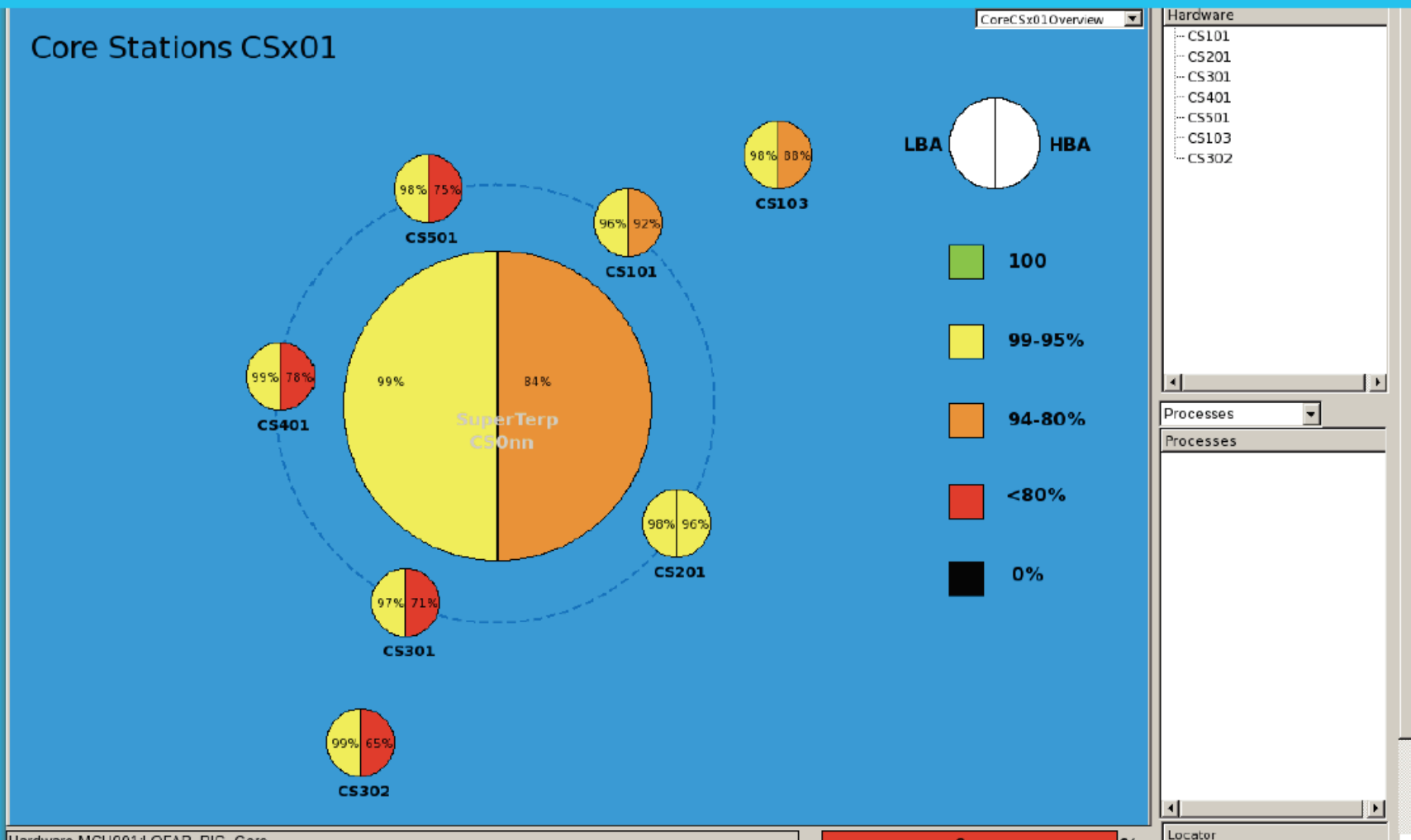
# Superterp



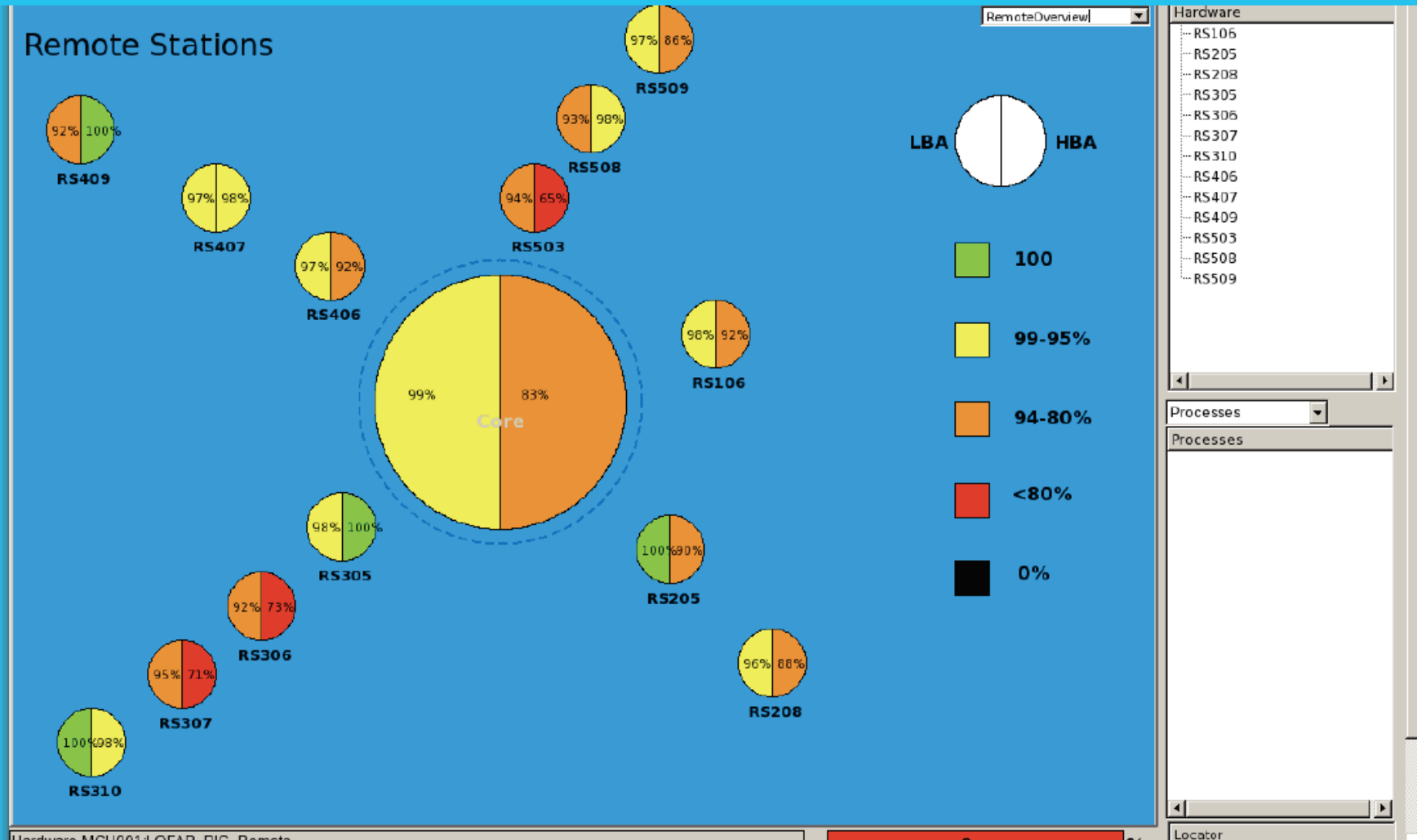
# Core



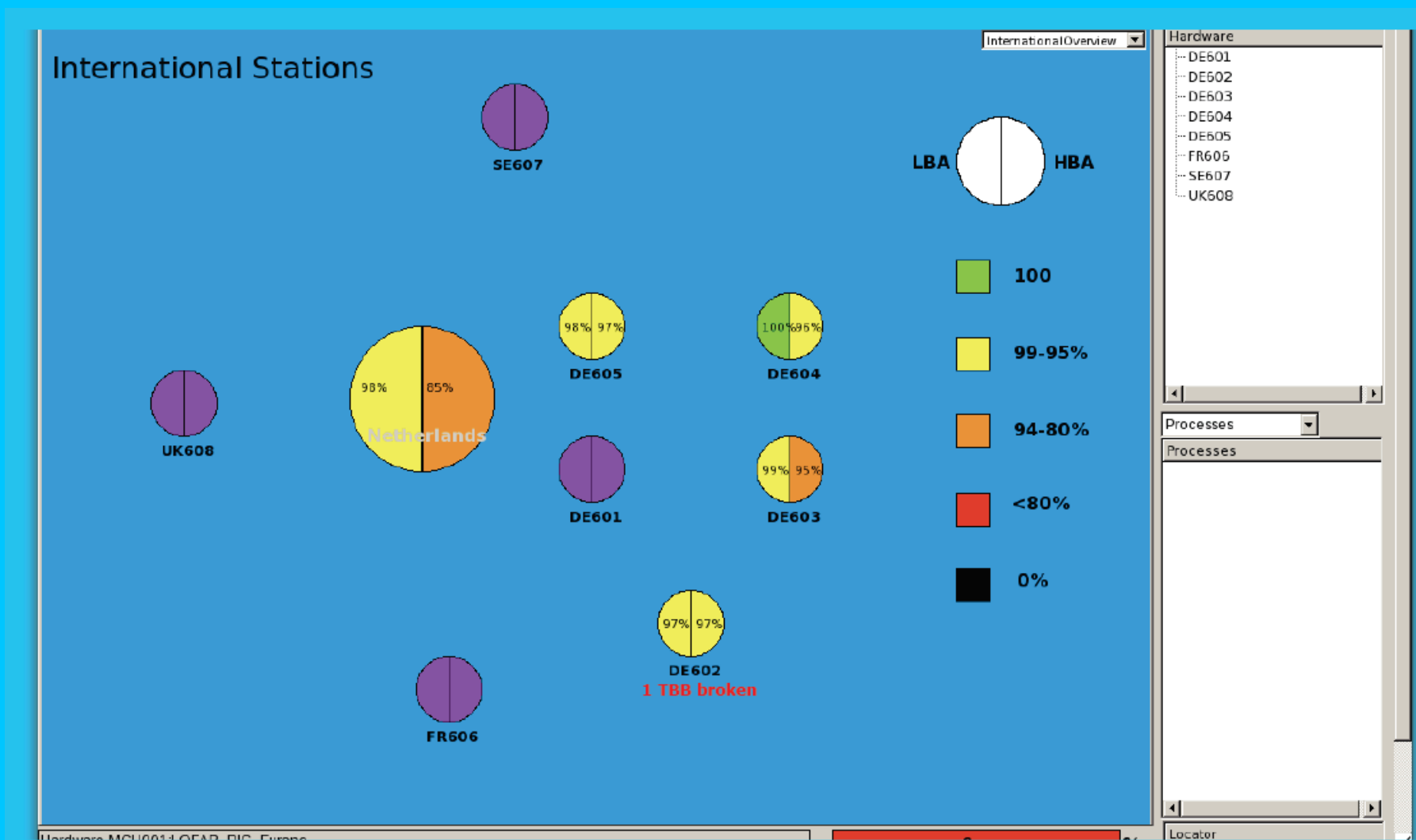
# Core x01 and outside



# Remote

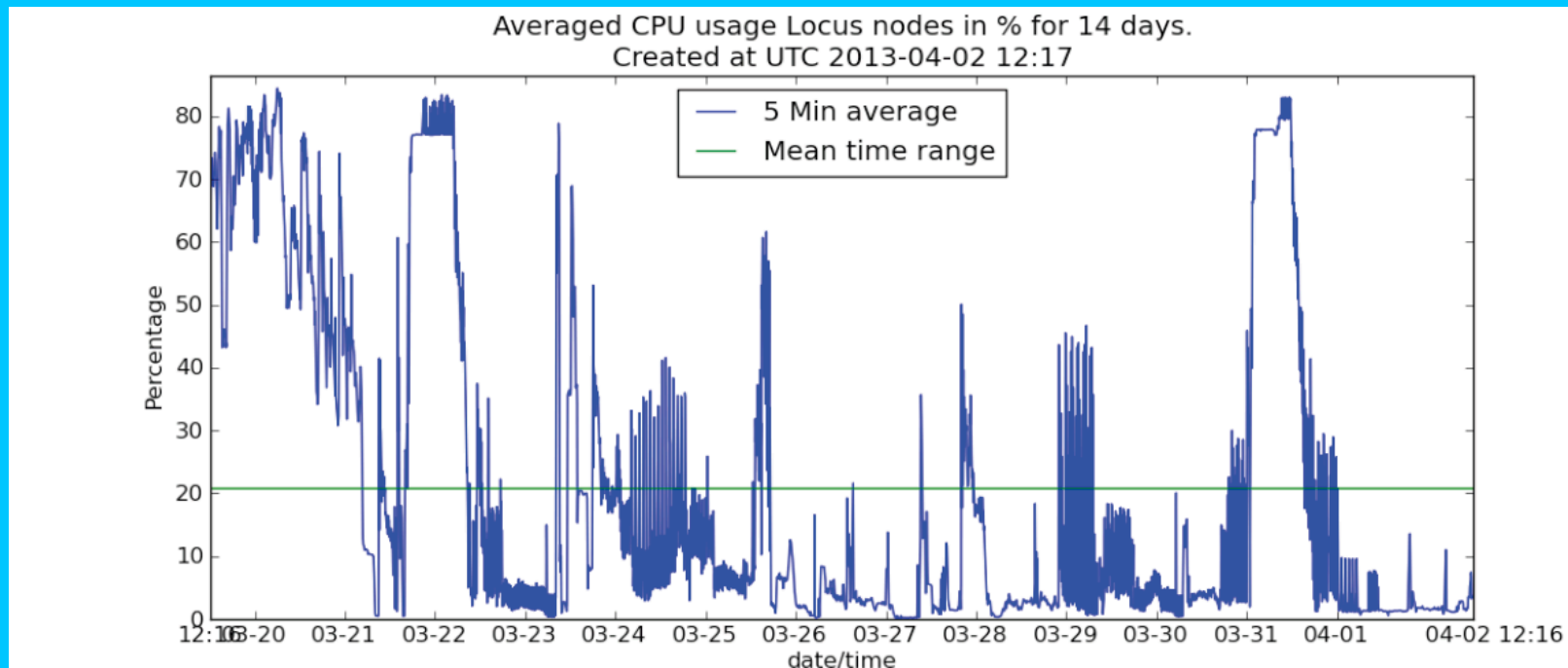


# International





# CEP usage last two weeks



# News regarding the observing system

## Station calibration



- Station calibration:
  - CS002–007, 26,28,30,31,401 + DE601, 2, 5, FR606, SE607, UK608 received new caltables (mode 5)
  - Updating mode 7 (HBA HIGH)
- Updated status available at

*<http://www.astron.nl/radio-observatory/astronomers/current-status>*

## News regarding the observing system: Stability & performance

- Overall stability is good:
  - Observations stable
  - Pipelines stable
    - Occasional swapping
    - Specifications errors
  
- Issues:
  - Because of too many processes (ObservationControl) active on the MCU, system hanged (experienced twice already)
  - Communication problems between various parts of the system – feedback not reliable and incomplete metadata -> **significant delays with ingestion**
  - System slow and unstable when handling demanding projects (e.g. LC0\_003: ~ 1000 pipelines associated with 192 runs performed in 24 hours)
  - Observations involving International stations: first minute heavy flagging – under investigation

## News regarding the observing system: Station-test

- Station-test is adapted to catch various sorts of element failure in the HBA tiles (oscillating, high/low signal, modem failure)
- Next step: switch back and let the station-test catch all oscillating tiles and high-noise elements – this could improve sensitivity on a number of stations
- Intermittent oscillating tiles are still hard to catch – recent long tests have revealed new ones
- Repairs are being prepared by Henri and will be applied as soon as the weather permits

# News regarding the observing system: Updates, issues, tests

- Roll out software version 1.13:
  - Update Operations scripts -> helper scripts for troll out on LCUs, MCU, CCU, CEP, lhn, SAS
  - MAC
  - PVSS DB updates
  - RTCP roll out
  - Storage roll out
  - Pipeline roll out
  - OTB server/GUI roll out
  - OTDB -> adding function getVHitemListRegex, no components updates
  
- Roll out on Tuesdays + following 2 days for tests and recovery. Only low risk LC0 projects performed between Tuesdays and Thursdays
  
- Roll outs taking place every 6 weeks

# News regarding the observing system: Updates, issues, tests

- Next roll out: May 28<sup>th</sup>:
  - Fix metadata feedback
  - Deliver functional end-to-end test system
  - Improve MoM interfaces and selection system
  - Ingest calibrated visibilities
  - Implement complete pipeline parameter selection in MoM
  - Implement automatic demixing scheme in imaging pipeline
  - Disclose parsets in MoM
  - Disclose pipeline summary in MoM
  - Implement inspect plots in imaging pipeline
  - Disclose project time/disk space statistics

## News regarding the observing system : Archive

- Archiving of raw and processed data is progressing:
  - Speeding up the ingest of small data products
    - Target: keep up with overall observing program
      - Requires average ingest duration of 2 seconds
      - Improvements:
        - Multithreading Astro-Wise side of ingest
        - Avoid parsing redundant metadata
        - Moved MoM side of ingest to server in LOFAR domain
      - Result: Small file ingests now take on average 1.7 seconds
    - New issue causing ingest to fail: non-unique data products ID's in MoM (under investigation)
  - Improving the ingest status overviews

## News regarding the observing system : Archive

- Data suffering from incomplete metadata **will not be ingested**. They will be **transferred to an LTA location** (Big Bucket), where they will remain available for download for the users.
- A fix to repair incomplete metadata is currently being worked on

**DO NOT COPY DATA FROM CEP2 WITHOUT  
SCIENCE SUPPORT APPROVAL**

- Processed LC0 data transferred also to CEP1 (staging areas) if further manual processing on CEP was requested in proposal – max lifetime on CEP1 = **4 weeks**



# News regarding Cycle 0 observations



| Week number   | week day | 0                               | 1 | 2                             | 3                             | 4   | 5                                | 6 | 7                                     | 8  | 9                                     | 10 | 11  | 12                                   | 13 | 14 | 15   | 16                        | 17                            | 18 | 19                              | 20                           | 21 | 22 | 23 |
|---------------|----------|---------------------------------|---|-------------------------------|-------------------------------|---|----------------------------------|---|---------------------------------------|--|---------------------------------------|----|---|--------------------------------------|----|----|--|---------------------------|-------------------------------|----|---------------------------------|------------------------------|----|----|----|
| 14, 1st April | Mon      | MSSS LBA                        |   |                               |                               |   |                                  |   |                                       | DE601, FR606, SE607, UK608 switched to local mode at 9 UTC; TBB runs; stress system runs |                                       |    |   |                                      |    |    |  | LC0_019 (EoR) - NCP - hrs |                               |    |                                 |                              |    |    |    |
|               | Tue      | LC0_019 (EoR) - NCP - hrs       |   |                               |                               |   |                                  |   | Stress system runs + TBB runs         |  | LC0_034, 11,008- pulsars runs - 9 hrs |    |   |                                      |    |    |  |                           | LC0_015 - Lockman Hole - 3hrs |    |                                 | LC0_043 - NGC3627 - 4 hrs    |    |    |    |
|               | Wed      | LC0_043 - NGC3627 - 4 hrs       |   | Stress system runs + TBB runs |                               |   |                                  |   |                                       | LC0_039 monitoring; FE monitoring runs   |                                       |    |   |                                      |    |    | Beam tests; Test LC0_025 run                   |                           | LC0_025 - A998 - 11hrs        |    |                                 |                              |    |    |    |
|               | Thu      | LC0_025 - A998 - 11hrs          |   |                               |                               | DE601, FR606, SE607, UK608 switched to iLT mode at 11 UTC; MSSS - HBA - 8 hrs |                                  |   |                                       |  |                                       |    |   | Test LC0_004 run; stress system runs |    |    |  |                           |                               |    | LC0_004 - MG J1131+0456 - 6 hrs |                              |    |    |    |
|               | Fri      | LC0_004 - MG J1131+0456 - 6 hrs |   |                               | Stress system runs + TBB runs |   | Commissioning LENC - HBA - 8 hrs |   |                                       |  |                                       |    | Stress system runs + TBB runs; test LC0_026 run |                                      |    |    |  | LC0_026 - M81/M82 - 6 hrs |                               |    |                                 |                              |    |    |    |
|               | Sat      | Stress system runs + TBB runs   |   |                               |                               |   |                                  |   | LC0_034, 11,008- pulsars runs - 9 hrs |  |                                       |    |   |                                      |    |    | Stress system runs + TBB runs                  |                           | LC0_019 (EoR) - NCP - hrs     |    |                                 |                              |    |    |    |
|               | Sun      | LC0_019 (EoR) - NCP - hrs       |   |                               |                               |   |                                  |   |                                       | Stress system runs + TBB runs  |                                       |    |   |                                      |    |    | Commissioning w/ WSRT - Pulsar B0823+26 - 5hrs |                           |                               |    |                                 | LC0_040 - J1115+5030 - 2 hrs |    |    |    |

- Detailed Cycle 0 schedule till the end of the 'semester' available on ASTRON website:

<https://www.astron.nl/radio-observatory/lofar/cycle-0-schedule/cycle-0-schedule>

- Check the schedule and inform Science Support in case of issues

# News regarding Cycle 0 observations



- During last 4 weeks: LC0\_019, 037, 043, 034, 011, 008, 003, 004, 015, 039, 026 + LC0\_010, 014, 044 (local use Int. Stations)
- Efficiency Cycle 0 ~ 100%
- MSSS HBA – 8 hrs per week to be increased to 16 hrs per week (+ limited number of LBA fields)
- Commissioning (Deller et al., Mulcahy et al.)

## CEP news:

- CEP-2: stable
  - A few locus nodes experienced reboot or hanging because of too many active processes
  
- CEP-1:
  - Problems with /staging3: one of the bricks (a raidset on the lse001) of the staging3 gluster volume, had one disk defect and another disk with I/O errors; therefore the RAID system could not recover automatically. Any attempt in using the gluster recovery system to migrate the data from this brick to another brick failed, because there were more than 1 million directories on this staging3 gluster volume. Eventually solved.
  
  - Problems /staging1: it was not created properly – being worked on now

# CALENDAR of requested busy weeks and other LOFAR activities



<http://www.astron.nl/radio-observatory/astronomers/commissioning/commissioning-plan>

- April 10 : Busy Wednesday, Dwingeloo
- April 15 - 19 : Imaging BW 17, Manchester
- May 13 - 16 : MKSP (13 - 15 workshop + 16 - 17 busy days), Sardinia
  
- April 9 : CEP Stop day