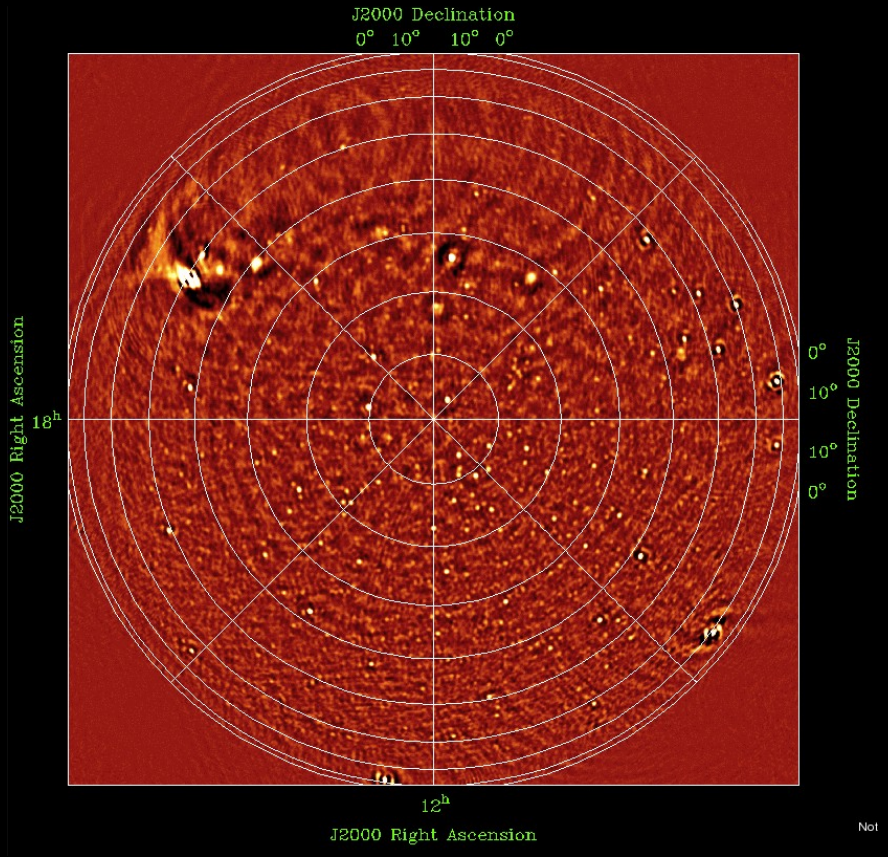
# *LOFAR Software Update*

André W. Gunst

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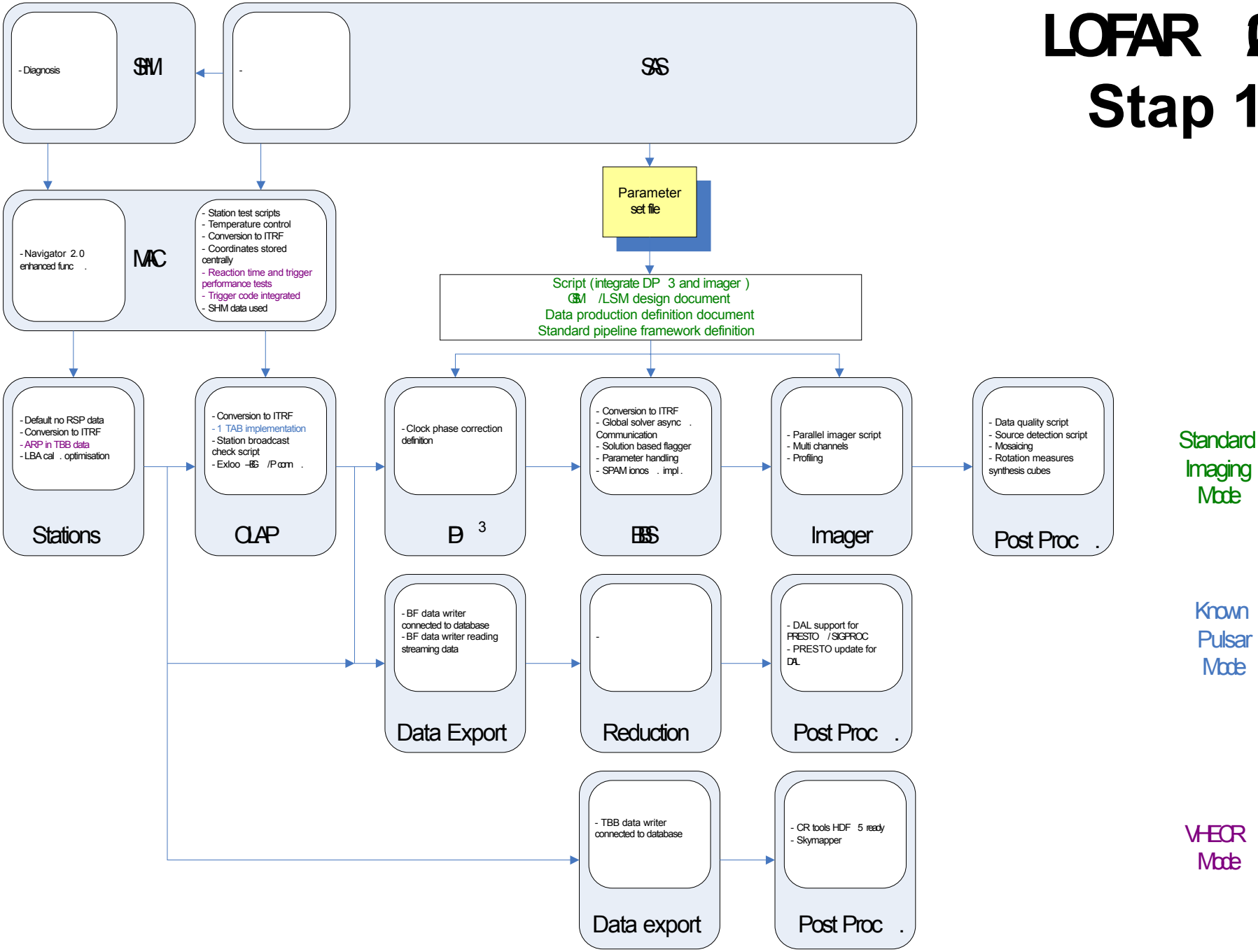
# LOFAR 2.0
# Stap 1



# Step 1 Task List

Microsoft Excel - LOFAR20tasksv4.xls

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | Remaining time left to finish task in weeks (updated each week) | | | | | | | | | | | | |
| | | | | Start | | | | | | | | | | | End | |
| | | | | 04-Aug | 11-Aug | 18-Aug | 25-Aug | 01-Sep | 08-Sep | 15-Sep | 22-Sep | 29-Sep | 06-Oct | 13-Oct | 20-Oct | 27-Oct |
| Subsystem | Task | Responsible | Week no. | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 |
| Station | Test suite definition | Eric Kooistra | | | | | 5 | | | 0 | | | | | | |
| Station | Support tests bj production companies | Eric Kooistra | | | | | 15 | | | 0 | | | | | | |
| Station | TBB test suite | Arie Doorduin | | | | | | | | 15 | 10 | | | | | |
| Station | ARP in TBB | Arie Doorduin | | | | | 10 | | | | | | | | | |
| Station | RSP data default off | Eric Kooistra | | | | | 25 | | | 15 | 10 | | | | | |
| OLAP | Conversion to ITRF | Martin Gels | | | | | | | | | | | | | | |
| OLAP | Support operators | Martin Gels | | | | | | | | | | | | | | |
| OLAP | Use of Parset modified | Martin Gels | | | | | | | | | | | | | | |
| OLAP | Broadcast check script | Chris Broekema | | | | | | | | | | | | | | |
| OLAP | Enh. fault-tolerance of storage | Arnold Meijster | | | | | | | | | | | | | | |
| OLAP | TAB implementation | Rob van Nieuwpoort | | | | | | | | | | | | | | |
| OLAP | IO node optimization (2 steps) | John Romein | | | | | | | | | | | | | | |
| OLAP | Integrate BG/P with MAC/SAS | Martin Gels | | | | | | | | 10 | | | | | | |
| Offline | Conversion to ITRF (common library) | Marcel Loose | | | 0 | | | | | | | | | | | |
| Offline | Online bandpass corr. verification | V. Pandey | | | | | | | | | 6 | | | | | |
| Offline | HBA dipole beam model verification in BBS | V. Pandey | | | | | | | | | | | | | | |
| Offline | Clock phase corr. definition | Ronald Nijboer | | | 0 | | | | | | 6 | | | | | |
| Offline | BBS solution based flagging impl. | Joris van Zwieten | | | 5 | | | | | | 6 | | | | | |
| Offline | BBS parameter handling | Joris van Zwieten | | | 11 | | | | | | 2 | | | | | |
| Offline | MS equation based solver in BBS (how to implem | Joris van Zwieten | | | | | | | | | | | | | | |
| Offline | BBS global solver comm. | Joris en Pandey | | | | | | | | | | | | | | |
| Offline | BBS ionospheric SPAM impl. | Maaijke Mevius | | | 8 | | | | | | 6 | | | | | |
| Offline | Integration of DP3 and Cimager | Ronald Nijboer | | | 7 | | | | | | 6 | | | | | |
| Offline | Parallel imager script | Ronald Nijboer | | | 7 | | | | | | 6 | | | | | |
| Offline | Image N-chann. In M-chann. | Ger van Diepen | | | 10 | | | | | | | | | | | |
| Offline | ParmTable redesign | Ger van Diepen | | | 6 | | | | | | 2 | | | | | |
| Offline | Profiling Cimager | Ger van Diepen | | | | | | | | | | | | | | |
| Offline | DP^3 integration in time functionality | Adriaan Renting | | | | | | | | | 6 | | | | | |
| SHM | Connection to MAC in production system | Mac Avruch | | | | 2 | | 2 | | | | | | | | |
| SHM | Documentation and knowledge transfer | Mac Avruch | | | | 20 | | 20 | | | | | | | | |
| SHM | Diagnosis enhanced (low priority) | Mac Avruch | | | | 13 | | 18 | | | | | | | | |
| MAC/SAS | Install/support Navigator 2.0 | Arthur Coolen | | | 10 | 10 | | 8 | | 5 | | | | | | |
| MAC/SAS | Enhanced Navigator 2.0 funcionalities | Arthur Coolen | | | 24 | 24 | | 22 | | 19 | | | | | | |
| MAC/SAS | Proof reaction time PVSS | Arthur Coolen | | | 10 | 10 | | 5 | | 3 | | | | | | |
| MAC/SAS | Station LBA calibration optimization | Pieter Donker | | | 10 | 10 | | 10 | | 10 | | | | | | |
| MAC/SAS | Temperature control implemented | Pieter Donker | | | 15 | 15 | | 15 | | 10 | | | | | | |
| MAC/SAS | LCU trigger code integrated | Pieter Donker | | | 5 | 5 | | 5 | | 5 | | | | | | |
| MAC/SAS | Update TBB Driver | Pieter Donker | | | 5 | 5 | | 1 | | 1 | | | | | | |
| MAC/SAS | Enhanced Navigator 2.0 funcionalities | Ruud Overeem | | | 4 | 4 | 4 | 4 | 4 | 3 | | | | | | |
| MAC/SAS | Support step5 / roll out | Ruud Overeem | | | 6 | 5.5 | 5.5 | 5 | 4.5 | 4 | | | | | | |
| MAC/SAS | MAC uses feedback from SHM | Ruud Overeem | | | 3 | 2.5 | 1 | 1 | 1 | 1 | | | | | | |
| MAC/SAS | Station test scripts implemented | Ruud Overeem | | | 2 | 2 | 2 | 2 | 1 | 0 | | | | | | |
| MAC/SAS | Coordinates centrally available | Ruud Overeem | | | 15 | 15 | 14 | 14 | 10 | 10 | | | | | | |
| MAC/SAS | Conversion to ITRF | Ruud Overeem | | | 10 | 10 | 10 | 7.5 | 7.5 | 7.5 | | | | | | |
| MAC/SAS | Proof reaction time PVSS | Ruud Overeem | | | 4 | 2.5 | 2.5 | 2.5 | 2.5 | 2.5 | | | | | | |
| MAC/SAS | LCU trigger code integrated | Ruud Overeem | | | | | 5 | 5 | 5 | 3 | | | | | | |
| MAC/SAS | Transferring the development system to 64 bit | Ruud Overeem | | | 5 | 5 | | | | | | | | | | |
| USG | TBB data writer connection to SAS | Joe Masters | | | | | | | | | | | | | | |
| USG | CR tools TBB HDF5 ready | Lars Bahren | | | | | | | | | | | | | | |
| USG | Skymapper TBB ready | Lars Bahren | | | | | | | | | 20 | | | | | |
| USG | BF data writer connected to data stream | Joe Masters | | | | | | | | | 20 | | | | | |
| USG | BF data writer connected to SAS | Joe Masters | | | | | | | | | | | | | | |
| USG | DAL support for PRESTO/SIGPROC | Joe Masters | | | | | | | | | | | | | | |
| USG | PRESTO updates for DAL HDF5 BF data | Joe Masters | | | | | | | | | | | | | | |
| USG | RM synthesis imaging tool specification | Sven Duscha | | | | | | | | | | | | | | |
| USG | Pipeline data product summary | Michael Wise | | | | | | | | | 20 | | | | | |
| USG | Pipeline framework definition | John Swinbank | | | | | | | | | 20 | | | | | |
| Comm. | TBB validation | Andreas Horneffer | | | | | | | | | | | | | | |
| Comm. | Long baseline correlation test | James Anderson | | | | | | | | | | | | | | |
| Comm. | | | | | | | | | | | 20 | | | | | |
| Comm. | Cimager commissioning | Casey Law | | | | | | | | | 20 | | | | | |
| Comm. | LCU trigger code commisioning | Andreas Horneffer | | | | | | | | | | | | | | |
| Comm. | BBS commissioning | Mamta Pandey | | | | | | | | | | | | | | |
| Roll out | Central Systems acceptance procedure | Andre Gunst | | | | | | | | | | | | | | |
| Roll out | | | | | | | | | | | | | | | | |
| Roll out | | | | | | | | | | | | | | | | |
| Roll out | | | | | | | | | | | | | | | | |
| Operations | Branch 15 installing on stations | Arno Schoenmakers | | | | | | | | | | | | | | |
| Operations | Automatic LCU installation package | Teun Grit | | | | | | | | | | | | | | |
| Operations | SHM integration for CS001 and CS01R | Arno Schoenmakers | | | | | | | | | | | | | | |
| Operations | Central distribution of config files to LCUs | Arno Schoenmakers | | | | | | | | | | | | | | |
| Operations | | | | | | | | | | | | | | | | |

Step1 / Step2 / Step3 / Step3+ / Sheet2 / Sheet3

Ready

NUM

start | Novell Gro... | Reports | 20081112... | Microsoft ... | next_mee... | CS1status... | USG.ppt | talkJR.ppt | Step1AG.ppt | MAC_SAS... | FSI Step1... | PVSS perf... | NL | 11:33

- ARP in TBB
- RSP data default off
- Full station mode (up to 992 subbands)
- Superstation TAB mode
- PPF bandpass
- Station – CEP under MAC/SAS

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- Autonomous station temperature controller
- PVSS, controller performance meas. (1.6 ms roundtrip time)
- SHM – MAC feedback
- Navigator 2.0 improvements
- Offline pipeline: DP^3 and distributed imager
- Offline clock phase correction definition
- Implementation of simple ionospheric model in BBS

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- RM synthesis imaging tool specification
- Standard framework pipeline implementation
- Channelization and down-sampling in BF data writer
- Native support in DAL for PRESTO/SIGPROC formats
- DAL data classes for time series data

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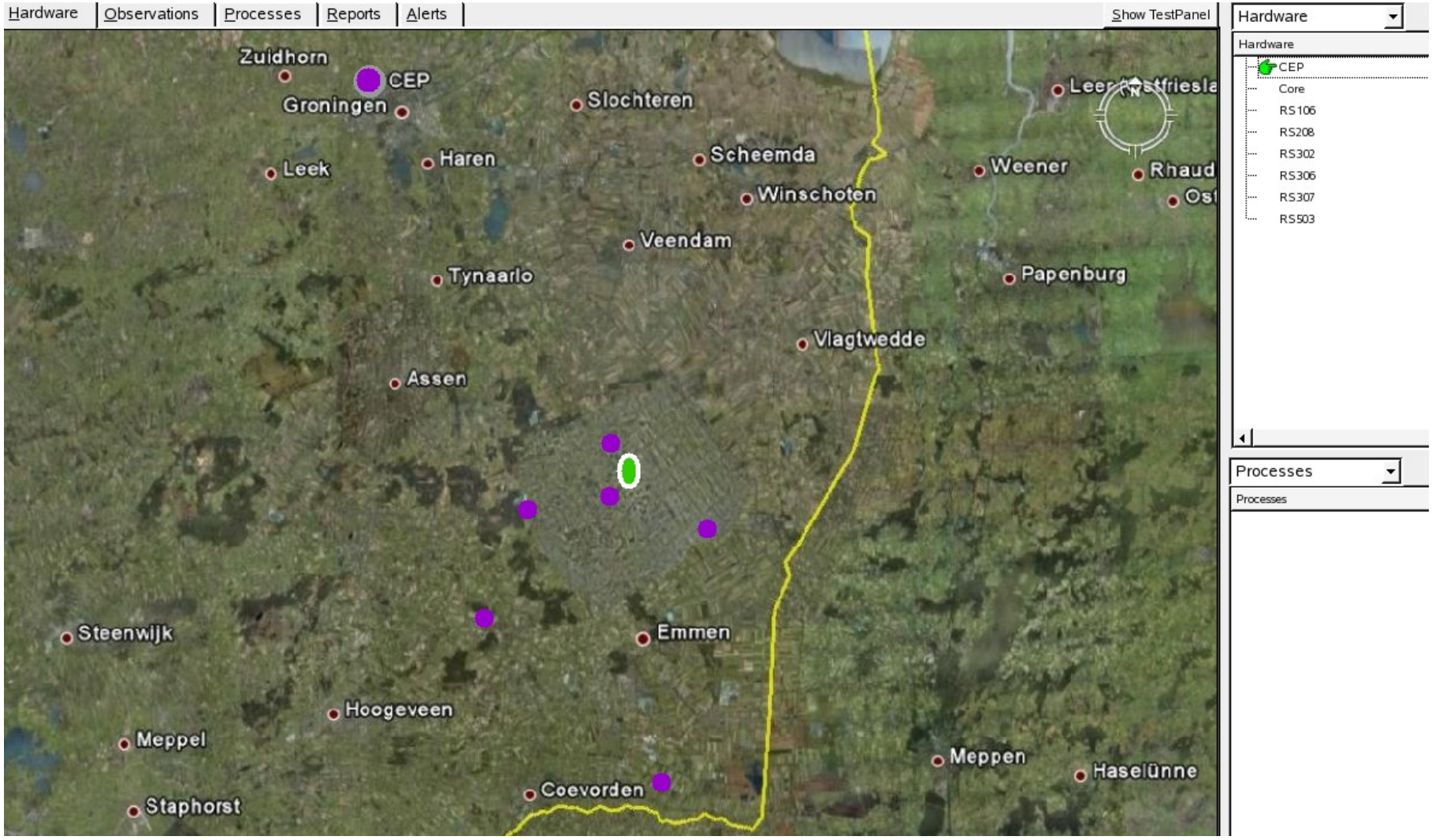
Hardware
Observations
Processes
Reports
Alerts
Show TestPanel
Zuidhorn
CEP
Groningen
Slochteren
Leek
Haren
Scheemda
Weener
Winschoten
Veendam
Tynaarlo
Papenburg
Vlagtwedde
Assen
Steenwijk
Emmen
Hoogeveen
Meppel
Meppen
Staphorst
Coevorden
Hardware
Hardware
CEP
Core
RS106
RS208
RS302
RS306
RS307
RS503
Processes
Processes

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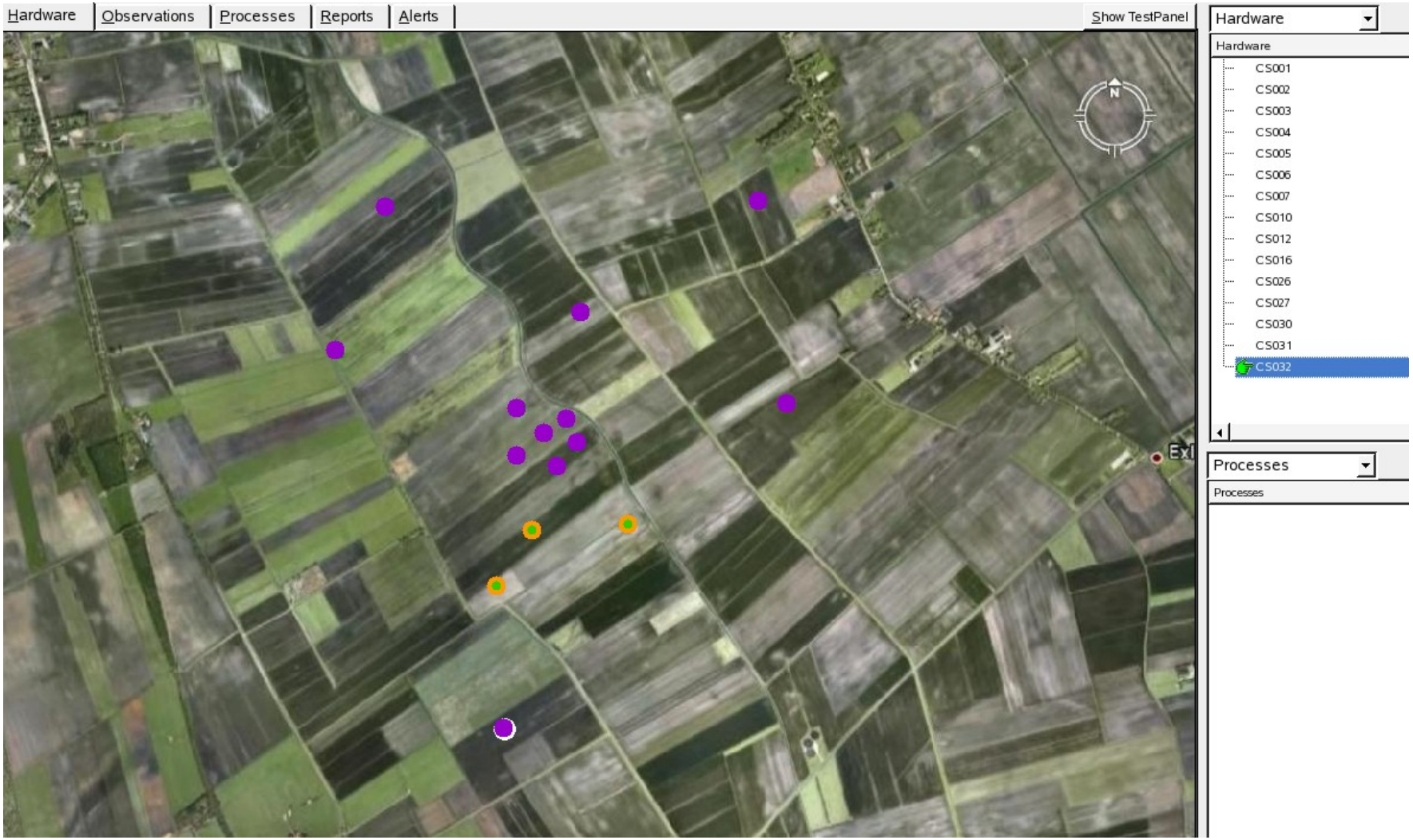


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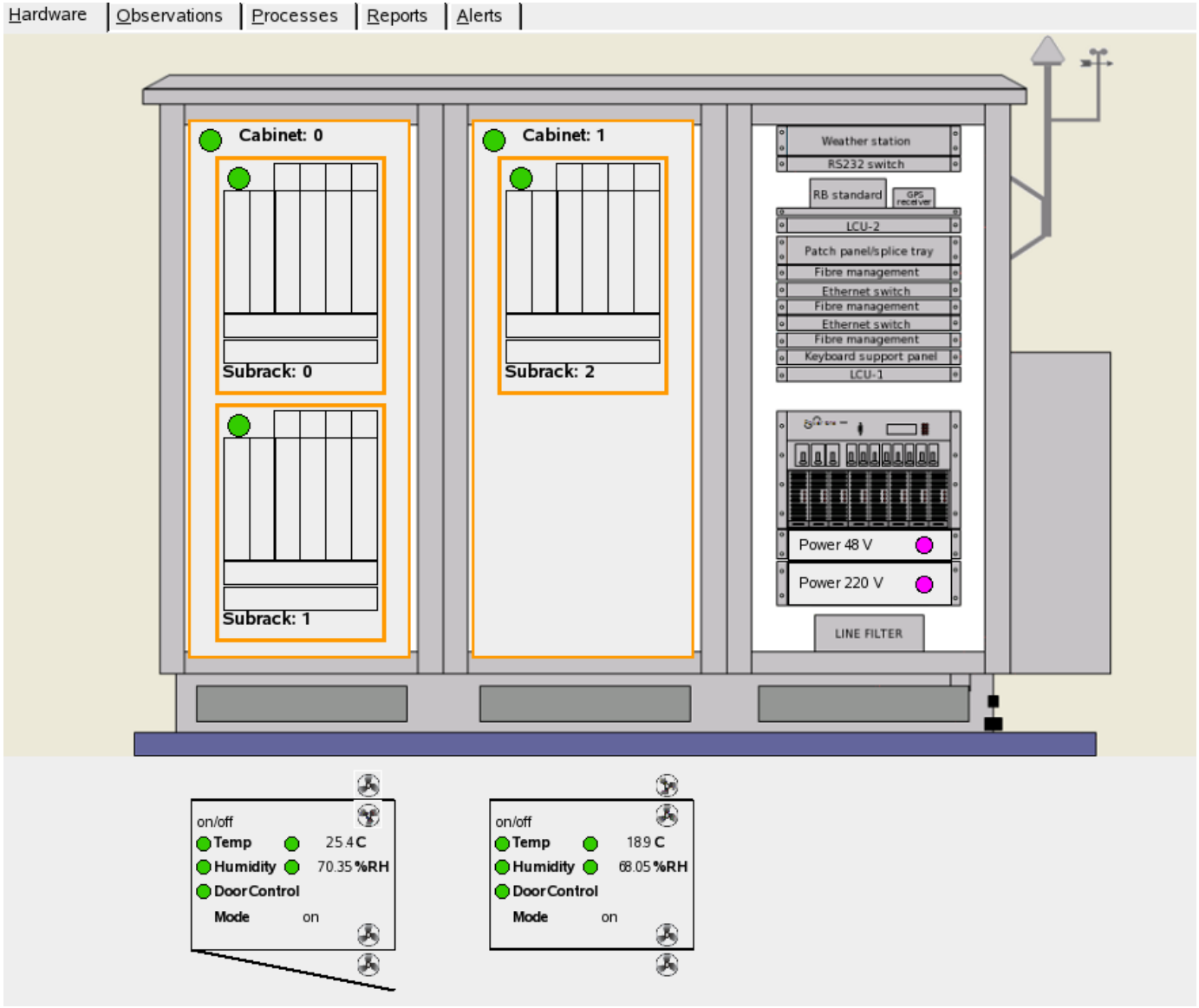
Hardware
Observations
Processes
Reports
Alerts
Cabinet: 0
Subrack: 0
Subrack: 1
Cabinet: 1
Subrack: 2
Weather station
RS232 switch
RB standard
GPS receiver
LCU-2
Patch panel/splice tray
Fibre management
Ethernet switch
Fibre management
Ethernet switch
Fibre management
Keyboard support panel
LCU-1
Power 48 V
Power 220 V
LINE FILTER
on/off
Temp 25.4 C
Humidity 70.35 %RH
Door Control
Mode on
on/off
Temp 18.9 C
Humidity 68.05 %RH
Door Control
Mode on

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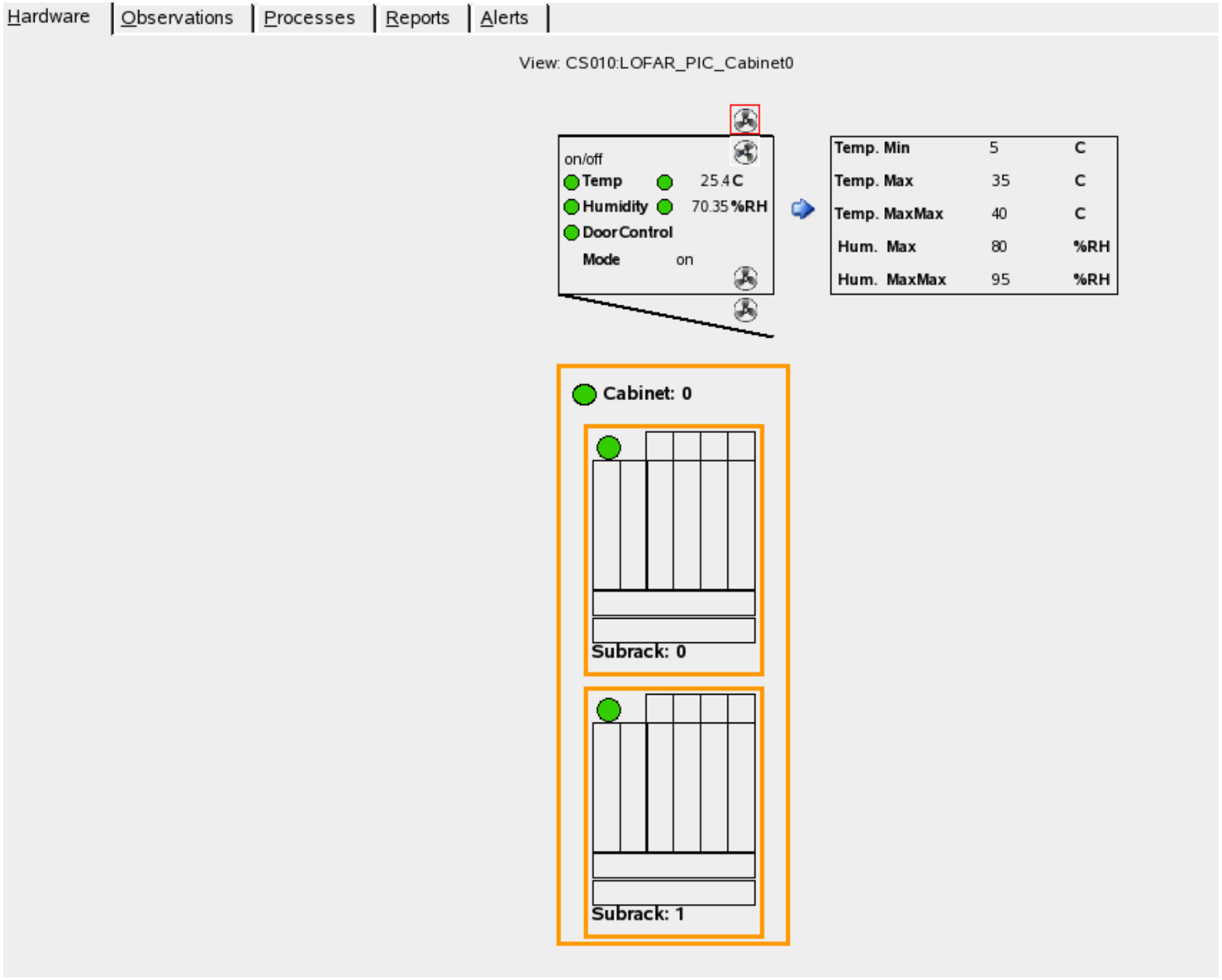
Hardware
Observations
Processes
Reports
Alerts
View: CS010:LOFAR_PIC_Cabinet0
on/off
Temp
25.4 C
Humidity
70.35 %RH
Door Control
Mode
on
Temp. Min 5 C
Temp. Max 35 C
Temp. MaxMax 40 C
Hum. Max 80 %RH
Hum. MaxMax 95 %RH
Cabinet: 0
Subrack: 0
Subrack: 1

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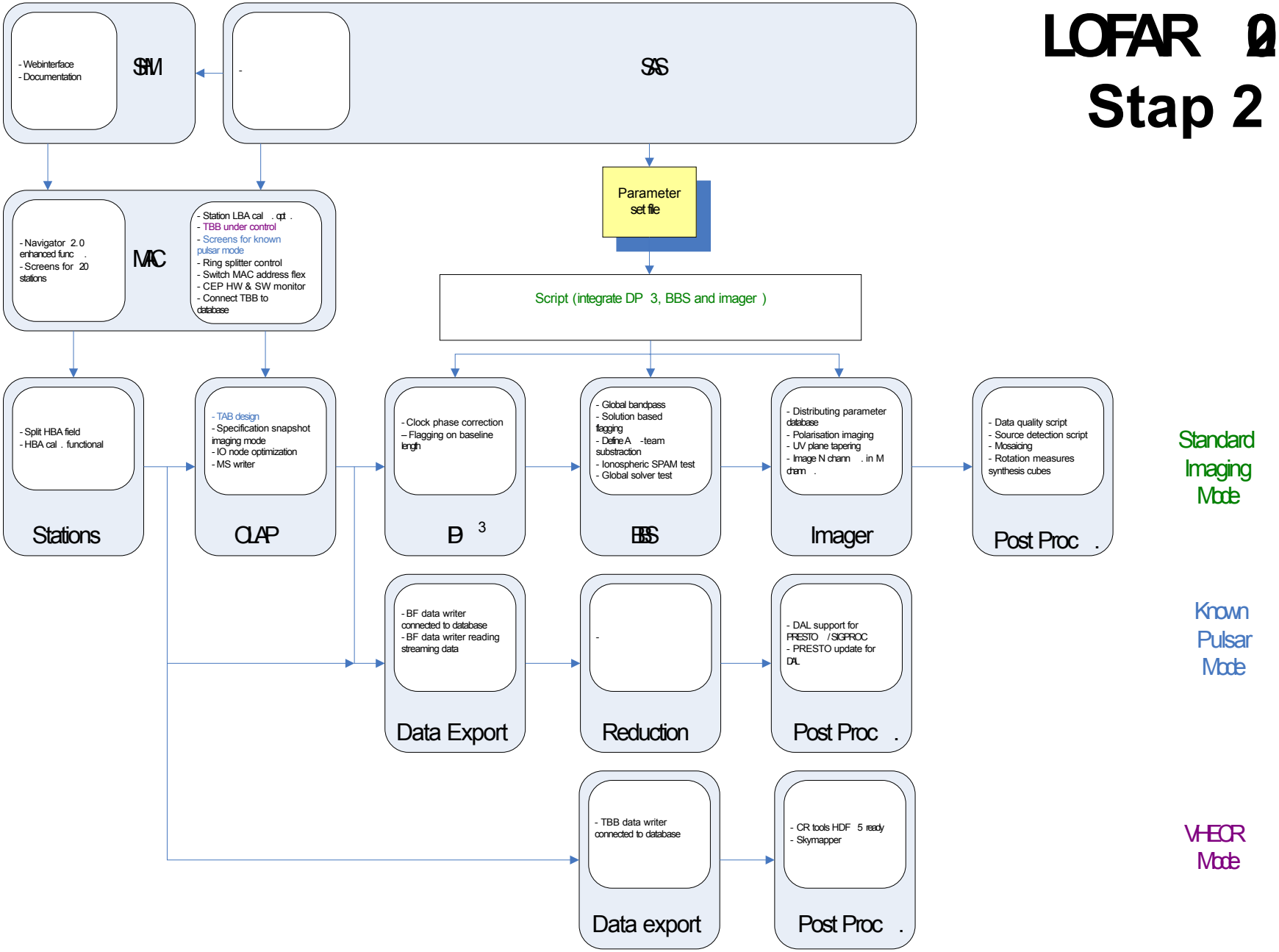
# LOFAR 2.0
# Stap 2



# Step 2 Task List

Microsoft Excel - LOFAR20tasksv4.xls

File Edit View Insert Format Tools Data Window Help Adobe PDF

A3 Subsystem

| | Subsystem | Task | Responsible | Week no. |
|---|---|---|---|---|
| 4 | Station | Split HBA field boards tested | Gijs | |
| 5 | Station | Firmware for split HBA field | Eric | |
| 6 | Station | Station HBA calibration functional | Stefan | |
| 7 | Station | Infrastructure for one central super station ( | Roll out | |
| 8 | Station | Cross correlation matrix | Eric | |
| 9 | | RSP data default off. | | |
| 10 | | Ring timing issues | | |
| 11 | Station | Beamtracking | Eric | |
| 12 | OLAP | Transition to Cmake | Martin | |
| 13 | OLAP | Feedback from correlator to MAC/SAS | | |
| 14 | OLAP | IO node optimization | John/Chris | |
| 15 | OLAP | Raw beamformer read out for multiple RSP | John | |
| 16 | OLAP | Measurement Set writer | Chris | |
| 17 | OLAP | Storage performance tests | Chris | |
| 18 | OLAP | Specification snapshot imaging mode | Ger de Bruyn/John | |
| 19 | OLAP | TAB design for pulsar mode | Jan-David/John | |
| 20 | OLAP | Enhancement of fault tolerance | John | |
| 21 | Offline | Distributing parameter database | Ger van Diepen | |
| 22 | Offline | Integration of DP^3, BBS and Cimager | Marcel Loose | |
| 23 | Offline | Global bandpass determination and implem | Pandey/Joris | |
| 24 | Offline | DP^3 offline clock phase correction impl. | Marcel Loose | |
| 25 | Offline | Define A-team subtraction | Ger de Buyn | |
| 26 | Offline | Flagging on baseline length, station number | Adriaan | |
| 27 | Offline | BBS solution based flagging | Joris | |
| 28 | Offline | BBS ionospheric SPAM test | Maaijke | |
| 29 | Offline | BBS global solver testing | Pandey | |
| 30 | Offline | BBS, VDS compatability | Joris | |
| 31 | Offline | Polarisation imaging | ATNF | |
| 32 | Offline | UV plane tapering | ATNF | |
| 33 | Offline | Image N chann. In M chann. | Ger van Diepen | |
| 34 | Offline | Define regression test suite for DP^3 | Pandey | |
| 35 | Offline | Define regression test suite for BBS | Pandey | |
| 36 | Offline | Define regression test suite for imager | Casey Law | |
| 37 | SHM | SHM web interface | Max | |
| 38 | SHM | SHM documentation | Max | |
| 39 | SHM | | | |
| 40 | MAC/SAS | Station LBA calibration optimization | Stefan/Pieter | |
| 41 | MAC/SAS | TBB dumps under control | Pieter | |
| 42 | MAC/SAS | TBB data writer under control | Pieter | |
| 43 | MAC/SAS | Making screens for 20 stations | Arthur | |
| 44 | MAC/SAS | Screens for known pulsar mode | Arthur/Ruud | |
| 45 | MAC/SAS | Develop screens for CEP | Arthur | |
| 46 | MAC/SAS | Ring splitter control | Arthur/Ruud | |
| 47 | MAC/SAS | Switch MAC addresses flexible | Ruud | |
| 48 | MAC/SAS | Hardware and software monitor for central r | Ruud | |
| 49 | MAC/SAS | Write TBB data to database | Pieter | |
| 50 | MAC/SAS | Modifications RSPDriver (registers have be | Ruud | |
| 51 | MAC/SAS | Script to read in cable delays and gains | Ruud | |
| 52 | MAC/SAS | Script to read the status of BG/P each x sec | Ruud | |
| 53 | MAC/SAS | LCU support for extra status registers in the | Ruud | |
| 54 | MAC/SAS | Coordinates centrally available | Ruud Overeem | |
| 55 | MAC/SAS | Conversion to ITRF | Ruud Overeem | |
| 56 | MAC/SAS | Write BF data under control | Pieter | |
| 57 | USG | GSM database implementation | | |
| 58 | USG | Image cube format definition | | |
| 59 | USG | Prototype mosaicing script | | |
| 60 | USG | First implementation of RM synthesis tool | | |
| 61 | USG | DAL update to support 4 and 8 bit mode | | |
| 62 | USG | Pipeline data product definition | | |
| 63 | USG | BF data writer handling streaming data | | |
| 64 | USG | Python wrappers for PRESTO/SIGPROC tools | | |
| 65 | USG | Near field imager | | |
| 66 | USG | Prototype CR post processing pipeline | | |
| 67 | USG | Prototype of Visit plugin | | |
| 68 | USG | Specification for CR particle detector | | |
| 69 | USG | Incorporate pyrap into build system | | |
| 70 | USG | BF data writer connected to data stream | Martin | |
| 71 | USG | BF data writer connected to SAS | Martin | |
| 72 | USG | PRESTO updates for DAL HDF5 BF data | | |
| 73 | USG | Define metadata set for SAS | Michael | |
| 74 | USG | | | |
| 75 | Comm. | Test suite for SPAM in BBS | Ilse van Bemmel | |
| 76 | Comm. | Integrate RM synthesis tool | Sven Duscha | |
| 77 | Comm. | Absolute flux calibration / flux scale | | |
| 78 | Comm. | Define CEP superstation mode tests | | |
| 79 | Comm. | | | |
| 80 | Roll out | | | |
| 81 | Roll out | | | |
| 82 | Roll out | | | |
| 83 | Roll out | | | |
| 84 | Operations | Branch 2.1 installing on stations | Arno Schoenmakers | |
| 85 | Operations | Install DP^3 on offline cluster | Teun Grit | |
| 86 | Operations | Install Cimager on offline cluster | Teun Grit | |
| 87 | Operations | Install Navigator 2.1 on production system | Jurjen Sluman | |
| 88 | Operations | Configure SHM for multiple servers | Arno Schoenmakers | |
| 89 | Operations | Install Step 1 firmware to RSP boards | Hans Weggemans | |
| 90 | Operations | Full usage of MAC/SAS system in observa | Operator | |
| 91 | Operations | Automatic LCU installation | Teun Grit | |
| 92 | Operations | Get CS001 under SHM (again) | Arno Schoenmakers | |

Step1 Step2 Step3 Step3+ Sheet2 Sheet3

Ready

- Split HBA field support
- HBA calibration functional
- Finish IO performance improvements
- Enhance storage robustness
- Tied Array Beamformer design
- TBB control under MAC/SAS

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- Add CEP screens to Navigator
- Build HW & SW CEP monitor
- Integration of BBS in offline pipeline
- Global bandpass correction in DP^3
- Clock phase correction in DP^3
- Solution based flagging in BBS
- Polarization imaging

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- UV plane taper in imager
- RM synthesis tool prototype
- GSM database implementation
- BF data writer handling streaming data
- Near field imager
- CR post processing pipeline

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