VCR - Virtual Control Room

web application for NenuFAR user

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Presentation content

- Concept
- General Status of Nenufar
- Observation management
- Monitoring
- Documentation
- Administrator VCR view
Concept

• Interface for different types of users
  • Scientists -> manage observation
  • Technicals -> manage instrument, survey and configuration
  • Users -> view planning/observation and SST/BST
  • Operators -> general survey instrument

• Modular interface following type of users
• Interface adaptable to all platform & all browser
• Interface easy to use
• Login with account

common entry point for all control / command of NenuFAR
General Status of Nenufar / Dashboard

Messages from all services

Data status

Mini Array / backend / services status
Observation management

➢ Planning: observation & booking
➢ Target selection
➢ Create observation
➢ Manage observations
Observation management / Planning: observation & booking

Schedule management

- One color for each Key Program: Observation -> Key program with specific color, booking -> idem with light color
- Booking: defined for 6 months

Observation ES03 (pulsar)
Observation ES06 (Planetary lightning)

Booking ES03 (pulsar)
Booking ES02 (Exoplanets & stars)
Observation management / Planning: observation & booking

Navigate by week

Display mode

Not yet booked
Observation management / Planning: observation & booking
Observation management / Target selection

- **Type of target**
- **Select another target**
- **Date transit selection**
- **Visibility adjustment**
- **Predefined target**
- **Elevation > 40°**
- **Elevation > 1°**
Observation management / Target selection

Target tracking

Information about target visibility
Observation management / Observation creation
Observation management / Observation creation

- General observation settings
- Correlation settings (subband, ...)
- Imager settings
- Others settings
- Add transit or tracking target
Observation management / Observation creation

Selected target

Busy or not booked

Booked for KP
Observation management / Observation creation

- Adjust observing time
- Add beam
- Delete beam
- Analog beam
- Beam configuration
- Number of beamlets used
Observation management / Observation creation

Analog beam configuration

*Analog pointing settings*

*Filter settings*

*Antenna settings in mini array*

*Mini array used*
Observation management / Observation creation

Digital beam configuration

Beam pointing settings

Processing settings (Pulsar, waveform, dynamic spectrum)

Help

Parameters field

Subbands definition

Parameters help:

Some parameters which are not included or going to be included in the GUI you have to specify specially for pulsars observations and time-frequency acquisition.

Pulsars parameters:

- Folding mode:
  - --fold=folder dump time, 10.737 sec is the default
  - FOLD: --fold=10.737 --src=00000000

- Single pulse:
  - --search=don't fold, write time series
  - --dtime=Downsample in time (int. power of 2)
  - SIZTIME: --search --dtime=128 --src=00000000

- Waveform:
  - WAVE: --src=00000000

- Olaf waveform:
  - WAVEOLAF: --src=00000000

- Piggy-back:
  - --projid=proj and its number (like 0003)
  - EBOBY-BAK: --projid=proj003

Waveform parameters:
Observation management / Observation creation

Add analog or digital beam
Observation management / Observation creation

Analog beam added
Beam added
Errors on observation settings
Submit observation when no errors
loop
Observation status to indicate !!!
Complete observation configuration
Observation management / Observation management

Replay observation

Download configuration & output of this observation

Tracking orders for this observation

Slow rate data for this observation
Observation management / Observation management

Example: BST file
Import observation (parset_user file)
Monitoring

➢ Slow rate data survey
➢ Antenna state survey
➢ Day data survey
➢ VTEC
➢ Time per key project
Monitoring / slow rate data survey

- Polarization & mini Array selection
- Freeze display
- Zoom possible
Monitoring / slow rate data survey

Freeze display
Adjust display on max value
beamlets
Monitoring / slow rate data survey

Mini Array or rotation sort
Monitoring / slow rate data survey

Time frequency for Mini Array 0 for the last half hour
Monitoring / slow rate data survey
Monitoring / slow rate data survey
Monitoring / antenna state survey

NenuFAR central core
Display position of a MA
Choose issues
Last tests
Mini Array with no problem
Monitoring / day data survey
Monitoring / VTEC

Azimuth / elevation display

Display mode & time slice selection

Vertical Total Electron Content
Monitoring / Time per key projects
Documentation

➢ User guide
➢ Gui release notes
parseFile user (.parset_user)

Write in this file only the parameters which have no default values.

**Writing rules:**
- File extension must be `.parset_user`
- Line must have the format: `description field = value`
- Values of description are:
  - Observation: Observation description.
  - Output: Files type
  - AnalBeam[k]: analog beam, k starts at 0.
  - Beam[k]: numeric beam, k starts at 0.

If a field is absent, it is considered to have the default value.

**Observation**

<table>
<thead>
<tr>
<th>field</th>
<th>description</th>
<th>value</th>
<th>default value</th>
</tr>
</thead>
<tbody>
<tr>
<td>title</td>
<td>observation description</td>
<td><code>&quot;xxxx&quot; or &quot;xxxx&quot;</code></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>observation name, single or double quotes are required</td>
<td><code>&quot;xxxx&quot; or &quot;xxxx&quot; only a-z, 0-9, _</code></td>
<td></td>
</tr>
<tr>
<td>contactEmail</td>
<td>Email of the user, can be a list of users, separated with a comma</td>
<td>user email</td>
<td></td>
</tr>
<tr>
<td>mAnalBeams</td>
<td>number of analog beams, at least 1</td>
<td>from 1</td>
<td>1</td>
</tr>
<tr>
<td>mBeams</td>
<td>number of numeric beams</td>
<td>from 0</td>
<td>0</td>
</tr>
<tr>
<td>topic</td>
<td>key project</td>
<td><code>pulsars, exoplanets_and_stars, fast_radio_bursts, radio_recombination_lines, transients, astrophysics</code></td>
<td></td>
</tr>
</tbody>
</table>
Current Gui version

Release version

Beta version

- Correction d'un soucis dans la navigation des SST 10s
- Envoy de mails par la voiture balai si le booking est rempli a moins de 75%
- Refonte de la modale d'assistance
- Ajout du mode d'emploi pour le mode Piggy-back dans le bulle d'aide Parameters
- Ajout des sécurités pour le mode Piggy-back
- Creation des pages de surveillance de RadioGaSa
- Correction d'un bug pour les observations qui ne prenaient pas toute la largeur du booking dans le planning
- Changement de serveur pour le calcul des coordonnees
- Retrait des debugs dans le calcul des coordonnees

- Suppression d'une sécurite qui se declenchait de maniere intempestive
- Ajout d'une sécurite empechant d'avoir 2 fois la meme proposition de replay
Administrator VCR view

- Monitoring
- Configuration
- Reports
Administrator VCR view / monitoring Mini-Arrays
Administrator VCR view / monitoring antenna state

Antennas test of 2021-11-08 13:46:00 UTC

<table>
<thead>
<tr>
<th>North-West</th>
<th>North-East</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 0</td>
<td>MA 0</td>
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<td>MA 17</td>
<td>MA 17</td>
</tr>
<tr>
<td>MA 18</td>
<td>MA 18</td>
</tr>
</tbody>
</table>
Administrator VCR view / Backend configuration

How to
You can change the status of each mini-array by clicking on it several times.
You can also disconnect or connect each backend card. If you disconnect backend card, each mini-arrays connected to this card will be offline.

The restart of the backend service is necessary if:
- you enable or disable backend card
- you set the status of a mini-array to “Only monitor”
- you change the status of a mini-array that was in “Only monitor”

All other changes will be effective at the next observation.

Click here to restart nenuFAR_backend_service
## Administrator VCR view

### Reports

<table>
<thead>
<tr>
<th>Log Type</th>
<th>Size</th>
<th>Last Modified</th>
<th>Status</th>
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</thead>
<tbody>
<tr>
<td><strong>Soft logs</strong></td>
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<td></td>
</tr>
<tr>
<td>SQL error</td>
<td>33kB</td>
<td>2021-10-26 20:00:14</td>
<td>unchanged</td>
</tr>
<tr>
<td>From LCU</td>
<td>1kB</td>
<td>2019-01-17 16:10:56</td>
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<tr>
<td>NenuFAR Todo</td>
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<td>2021-05-20 03:00:17</td>
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<tr>
<td>Maintenance</td>
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<td>2021-11-07 10:10:08</td>
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<tr>
<td>Mt Status Error</td>
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<td>2021-11-09 19:27:32</td>
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<tr>
<td>Signal Test</td>
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<td>2021-11-09 12:58:15</td>
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<tr>
<td>Test Ampl</td>
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<td>2021-11-09 15:13:03</td>
<td>unchanged</td>
</tr>
<tr>
<td>Test Relay cell</td>
<td>4MB</td>
<td>2021-11-09 15:11:24</td>
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<tr>
<td><strong>Backend logs</strong></td>
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<td>PSA version</td>
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<td>2021-11-11 16:20:22</td>
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<td>Pointing Error</td>
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<tr>
<td>Read Stats Error</td>
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<tr>
<td>TBB service Log</td>
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<td>2021-11-12 00:01:02</td>
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<td><strong>GUI logs</strong></td>
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<td>WebServer</td>
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<tr>
<td>WebServer Beta</td>
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<td>Zip Creation</td>
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<td>Import Trace</td>
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<td>SubmitLoop</td>
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<td><strong>Releases Notes</strong></td>
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<tr>
<td>PointageFire</td>
<td>792B</td>
<td>2021-07-07 14:00:28</td>
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<tr>
<td>BackendControl</td>
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<td>HPAP Firmware</td>
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<td>2021-02-25 11:07:58</td>
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<td>PointageAuto</td>
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<td>PointageListen</td>
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<td>SignalTest</td>
<td>402B</td>
<td>2021-07-12 15:40:51</td>
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</tr>
</tbody>
</table>
Questions ?

Now, demo !