System Usage: First steps with Sen2-Agri system
System accessible from a web interface
Automated mode requires to define at least 1 site (extent + monitoring period/season)

1. Create your site: extent + monitoring season
2. Configure your site: automatic processors activation [optional]
3. Launch the automated mode by enabling your site and season of interest
Automated mode requires to define at least 1 site
(Site definition and extent)
Automated mode requires to define at least 1 site
(Site definition and extent)
Automated mode requires to define at least 1 site
(Site definition and extent)

- Enter a unique site name
Automated mode requires to define at least 1 site (Site definition and extent)

- Upload a **shapefile** with the site extent.
  The uploaded file will have to be in a “.zip” archive that contains a shapefile. Mandatory files are “.shp”, “.dbf”, “.prj” and “.shx” files.
Automated mode requires to define at least 1 site (Site definition and extent)
Automated mode requires to define at least 1 site
(Site definition and extent)

To configure the season, press the *Edit* button corresponding to the newly created site.
Automated mode requires to define at least 1 site
Monitoring period/season

Then press the « + » button to set your season information
Automated mode requires to define at least 1 site
Monitoring period/season
Automated mode requires to define at least 1 site
Monitoring period/season

Enter an explicit season name
Automated mode requires to define at least 1 site

Monitoring period/season

Define the Start date of your season, this date will be the starting date of your monitoring period
Automated mode requires to define at least 1 site
Monitoring period/season

Define the mid date of your season, this date will be used to schedule the execution of the crop maps.

<table>
<thead>
<tr>
<th>Season name</th>
<th>Season start</th>
<th>Season end</th>
<th>Enabled</th>
<th>Active processors</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>2018 Season</td>
<td>2018-03-01</td>
<td>2018-07-15</td>
<td>OFF</td>
<td>L2A L3A L3B L4A L4B</td>
<td></td>
</tr>
</tbody>
</table>
Automated mode requires to define at least 1 site
Monitoring period/season

Define the end of season date, this date corresponds to the end of your monitoring period for this season.
Automated mode requires to define at least 1 site
Monitoring period/season

Enable your newly created season
Automated mode requires to define at least 1 site
Monitoring period/season

Optionaly activate the automatic scheduling of processor(s) execution

- **Atmospheric correction (L2A)** is always run automatically since it is a mandatory input for all the other processors.
- **L3A** = Monthly cloud free composite
- **L3B** = Vegetation Status (LAI and NDVI) produced for each L2A product
- **L4A** = Monthly Cropland Mask starting from the middle of the season
- **L4B** = Crop Type map produced at the middle and at the end of the season
Automated mode requires to define at least 1 site
Monitoring period/season

Press the « floppy disk » button to save your season settings
Automated mode requires to define at least 1 site
Monitoring period/season
Your first site is created

<table>
<thead>
<tr>
<th>Site name</th>
<th>Short name</th>
<th>Season name</th>
<th>Season start</th>
<th>Season mid</th>
<th>Season end</th>
<th>Enabled</th>
<th>Edit</th>
<th>Enabled</th>
</tr>
</thead>
<tbody>
<tr>
<td>MyRegion</td>
<td>myregion</td>
<td>2018 Season</td>
<td>2018-03-01</td>
<td>2018-07-15</td>
<td>2018-11-30</td>
<td>ON</td>
<td>Edit</td>
<td>ON</td>
</tr>
</tbody>
</table>

Logged in as sen2agri | DB version 1.8

Copyright © 2016–2017 CS ROMANIA SA
STEP 1
Configure and launch the automated mode

1. Create your site: extent + monitoring season ✓
2. Configure your site: automatic processors activation [optional] ✓
3. Launch the automated mode by enabling your site and season of interest ✓

- Sentinel-2 and Landsat 8 download will automatically start
  - Will start 3 months before the start of the season date to initialize the atmospheric correction and cloud screening processor
  - Will remain active during 2 months after the end of the season date
- Download of L1C product from ESA and USGS catalogs and processing to L2A are fully automated by default
- Jobs for activated processors will automatically be added to the system scheduler
Download has started and a first L2A product is available after ~ 1hour.
You can monitor the downloads.
... and your system resources usage
• Schedule the execution of a specific processor, using the by-default parameterization
• Example of jobs that could be added:
  – Schedule the execution of the Cloud-free composite processor every 2 months
  – Schedule the production of the Cropland Mask every month starting from August

1. Schedule the execution of the Cropland Mask processor (L4A) every month starting from August
Schedule a new job for the cropland mask processor.

In the *Dashboard* tab, press the **Add New Job** button under the *L4A processor*.
Schedule a new job for the cropland mask processor

Set a job name

<table>
<thead>
<tr>
<th>L2A Processor</th>
<th>L3A Processor</th>
<th>L3B LAI Processor</th>
<th>L3E Pheno Processor</th>
<th>L4A Processor</th>
<th>L4B Processor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resource Utilization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Last Run On</td>
<td>2018-03-09 08:10:52</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Duration</td>
<td>00:00:00:124</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average User CPU</td>
<td>00:00:00:124</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average System CPU</td>
<td>00:00:00:155</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Max RSS</td>
<td>0.00 MB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Max VM</td>
<td>0.00 MB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Disk Read</td>
<td>0.00 MB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average Disk Write</td>
<td>0.00 MB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Default Configuration</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>mission</td>
<td>SENTINEL</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>temporal_resampling_mode</td>
<td>resample</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>random_seed</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>window</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>smoothing-lambda</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nbcomp</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>segmentation-spatial-radius</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>range-radius</td>
<td>0.85</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>segmentation-minsize</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>erode-radius</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier</td>
<td>rf</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier.field</td>
<td>CROP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier.rf.nbtrees</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier.rf.max</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier.rf.min</td>
<td>25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>classifier.svm.opt</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Add New Job</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job name</strong></td>
<td><strong>Site name</strong></td>
<td><strong>Season name</strong></td>
<td><strong>Schedule type</strong></td>
<td><strong>First run time</strong></td>
<td><strong>Repeat</strong></td>
</tr>
<tr>
<td>Cropland_MyRegion</td>
<td>Select site</td>
<td>Select season</td>
<td>Select a</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Action** | Save

---

**sentinel-2**

**sentinel-2 for agriculture monitoring**

**sites** **products** **system overview** **dashboard** **custom jobs** **monitoring** **logout**

---

**UCL** **CSBIO** **CS** **ESRIN** **CSB**

---

**AGRICULTURE**
Schedule a new job for the cropland mask processor

Select the **site** on which you want to operate
Schedule a new job for the cropland mask processor

Select the **season** on which you want to operate
Schedule a new job for the cropland mask processor.

Select the **Schedule type** on which you want to operate. Either *Once* – *Cycle* or *Repeat*. 
Schedule a new job for the cropland mask processor

Select a date which corresponds to the **first run date of your scheduled job**
Schedule a new job for the cropland mask processor

In case of *Repeat* and *Cycle* type, you have to set the day of the month or the period in days between two runs.
Schedule a new job for the cropland mask processor.

In case of **Repeat** and **Cycle** type, you have to set the day of the month or the period in days between two runs.

If date is in the past, processing(s) will start if resources usage allows it.
If date is in the future, processing(s) will be added to the scheduler.
Monitor the job execution
STEP 3
Manual mode to add a custom job

- Manual processing, independently for any processor
- Not scheduled: will be immediately launched
- Fully configurable: easy to change the by-default parametrization for tests

1. Add a custom job for launching the crop type processor
Create a Crop Mask Custom job on a site already configured for the training

This “Custom jobs” tab allows the user running the L4B processor
- by using only a subset of the available L2A input products and/or
- by running it with other parameters than the default ones defined in the automated processing
STEP 4
Optionally adapt the by-default configuration

The automated mode will be run using this by-default parameterization except if the user wants to change them. The change of the by-default parameters can be performed by using the Sen2Agri configurator application (accessible by running `sen2agri-config`).

**Important note:** The by-default parameterization were found to be the best generic values after a consistent benchmarking carried out during the project over globally distributed sites. The by-default values should not be changed before a consistent test.