Welcome to the 3rd webinar

The webinar will last around 1h

The slides will be available on the Sen4CAP website in the coming 48 hrs (http://esa-sen4cap.org/)

Presenters:

Sophie Bontemps & Philippe Malcorps from *UCLouvain*
Jan Musial from *Institute of Geodesy and Cartography, Poland*

Members of the consortium available to answer your questions

Webinar outline

- Sen4CAP overview
- System evolution – Version 1.1
- User experience: Institute of Geodesy and Cartography, Poland
- RACE initiative
- Next events // Questions & Answers

Webinar outline

- **Sen4CAP overview**
- System evolution – Version 1.1
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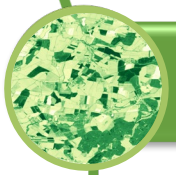
Use Cases: Sentinels to support payment decisions


Crop type mapping


Growing vegetation indicators


Grassland mowing detection


Agricultural practices monitoring (EFA)

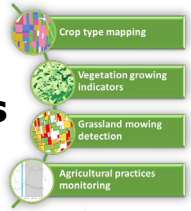
Use Cases
w/ Paying Agencies

Use case
Crop diversification
Permanent grassland identification
EFA-Land lying fallow
EFA-Catch crops
EFA-Nitrogen-fixing crops
Interactive visualization
Land abandonment
LPIS update
Claimless system

From prototyping to NRT national demonstrations

Design and prototyping
2017 agri season – local sites

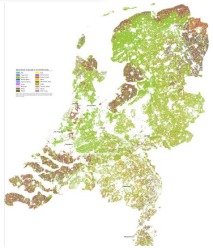
Use cases selection



Products Specifications

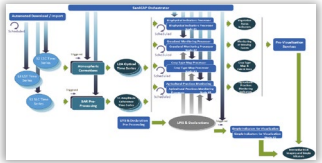
Benchmarked Methods

Algo & System design



Prototype products

Validation



Demonstration and validation
2018 & 2019 agri seasons – national NRT

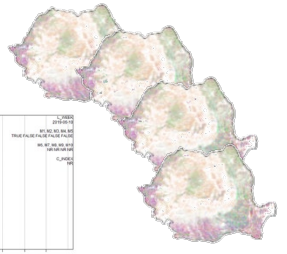
Use cases demonstration

National scale

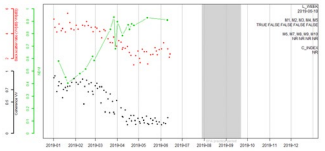
Continuous monitoring

Validation & Fitness-to-use assessment

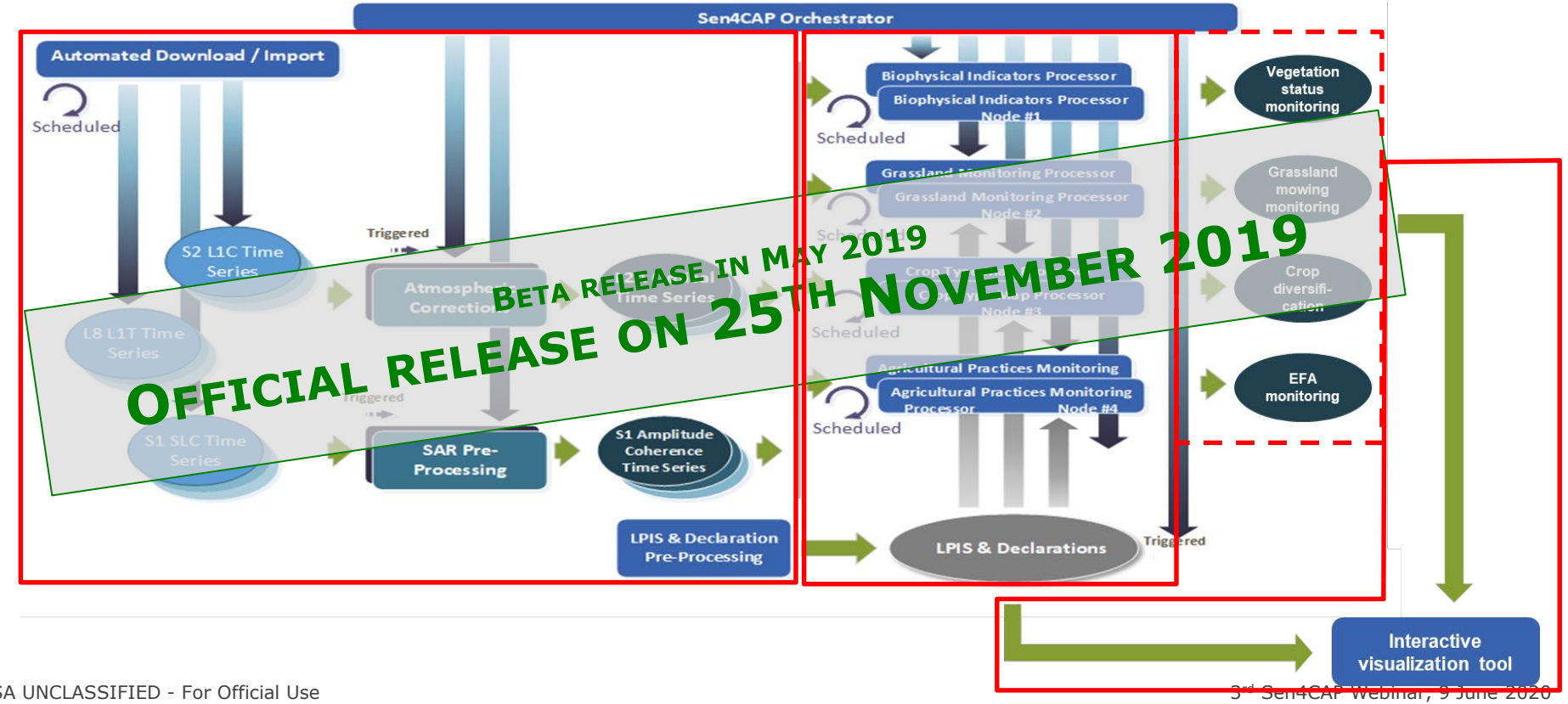
Capacity building and training



System qualification

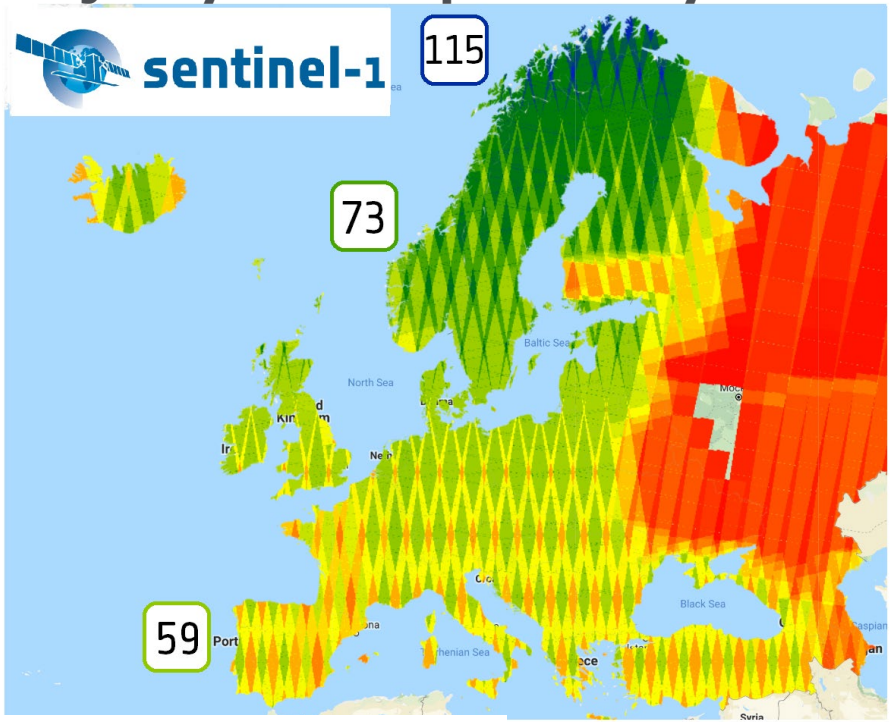


Sen4CAP system (v1.0)



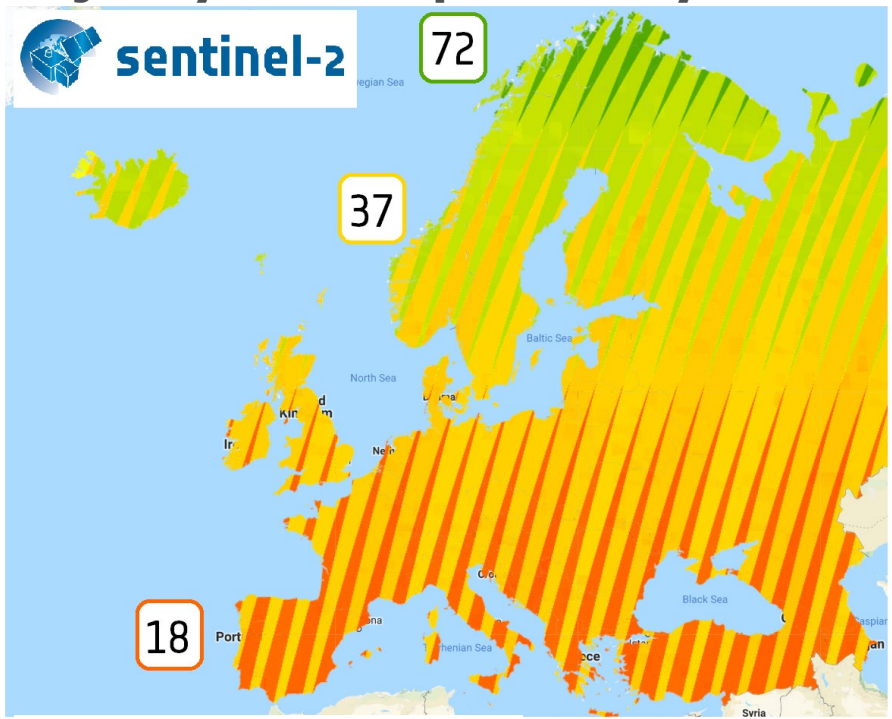
Input EO time series

Majority of Europe >2 day revisit



S-1A & -1B (July-Sept 2018)

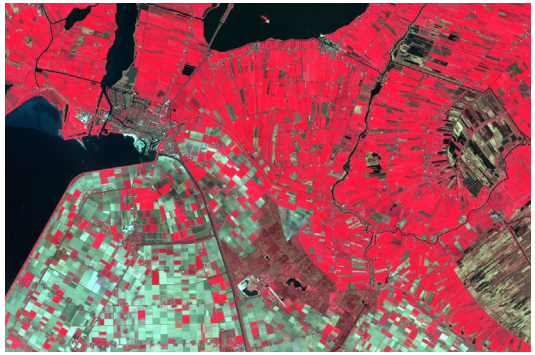
Majority of Europe >3 day revisit

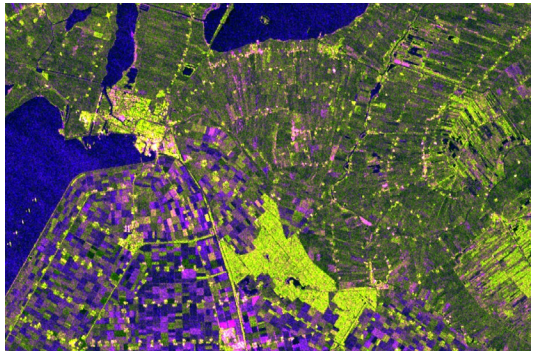


S-2A & -2B (July-Sept 2018)

Large dataset of markers from S1 & S2 for a national coverage

Sen4CAP system to process in near-real time full time series locally or on the cloud





Metrics / markers stored for each LPIS/GSAA parcel

- Crop type mapping
- Growing vegetation indicators
- Grassland mowing detection
- Agricultural practices monitoring

Sen4CAP system : simple parametrization and subsidy application upload

Before the monitoring period | Monitoring period

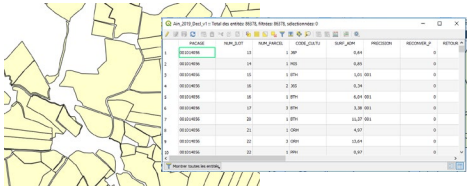
System initialization

Start of the season → End of the season...

Sen4CAP system : main parameters settings

Area of Interest	Shapefile to be uploaded
Monitoring period	Start and end dates to be defined
S1+S2 / S1+S2+L8	L8 to be selected

Subsidy application

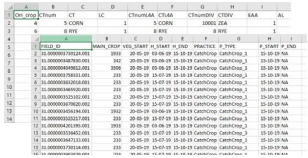


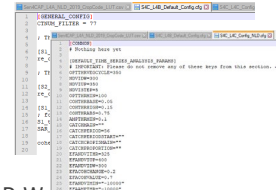
Upload data

Sen4CAP system : data from PA

Subsidy application (shp)	Subsidy application layer (shapefile)
Tables and config files (csv)	L4A crop code LUT L4B config file L4C config file + agri practices tables

Tables and config files





Sen4CAP is free and open source
Based on open source existing software

Under GNU-GPL License

Based on **Orfeo ToolBox** framework

Cluster-ready architecture for distributed processing

Integration of **SNAP** tools and processing chains

Operational system required : **CentOS7** (GNU/LINUX)

PostgreSQL and **PostGIS** implementation

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- **System evolution – Version 1.1**
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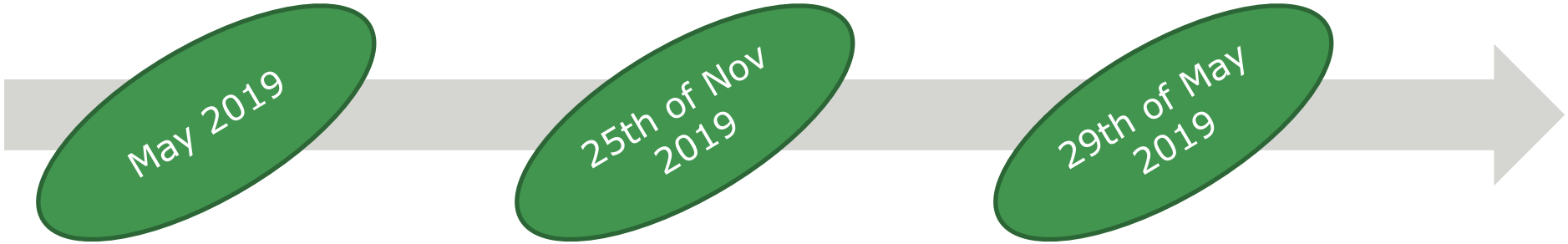
Version 1.1 released on the 29th of May 2020



BETA version

Only available for the PAs

Version 1.0 release candidate

Open-source

Possibility for the PAs to access a test machine with the system

Version 1.1

⇒ New features
⇒ Changes
⇒ Corrections

Listed in the change log file

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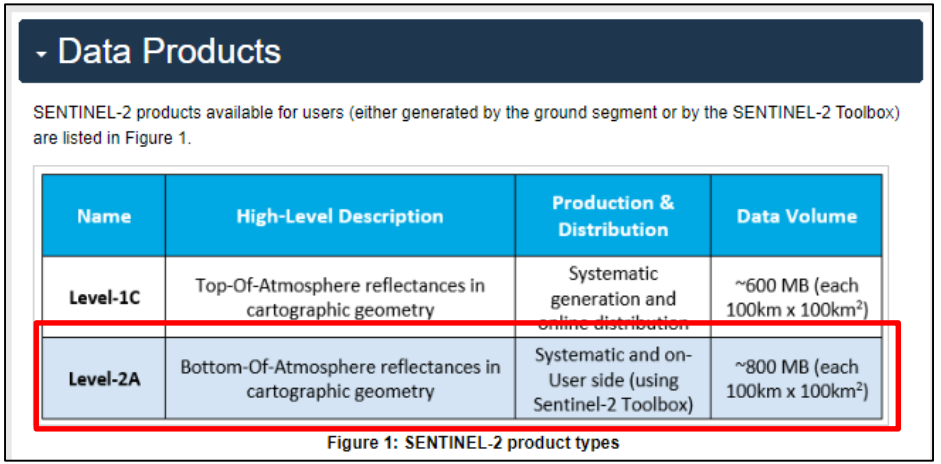
What are the **new features** in version 1.1?

1. **Support for using download and usage of Sen2Cor L2A products (configurable via database)**

Objective: to directly use the S2 L2A preprocessed with Sen2Cor available on SciHub (18 months archive) or on a local archive, to avoid MAJA preprocessing step

By default: S2 L1C download from SciHub and MAJA preprocessing

To do: activate the ingestion of Sen2Cor L2A products in the config table



Data Products

SENTINEL-2 products available for users (either generated by the ground segment or by the SENTINEL-2 Toolbox) are listed in Figure 1.

Name	High-Level Description	Production & Distribution	Data Volume
Level-1C	Top-Of-Atmosphere reflectances in cartographic geometry	Systematic generation and online distribution	~600 MB (each 100km x 100km²)
Level-2A	Bottom-Of-Atmosphere reflectances in cartographic geometry	Systematic and on-User side (using Sentinel-2 Toolbox)	~800 MB (each 100km x 100km²)

Figure 1: SENTINEL-2 product types

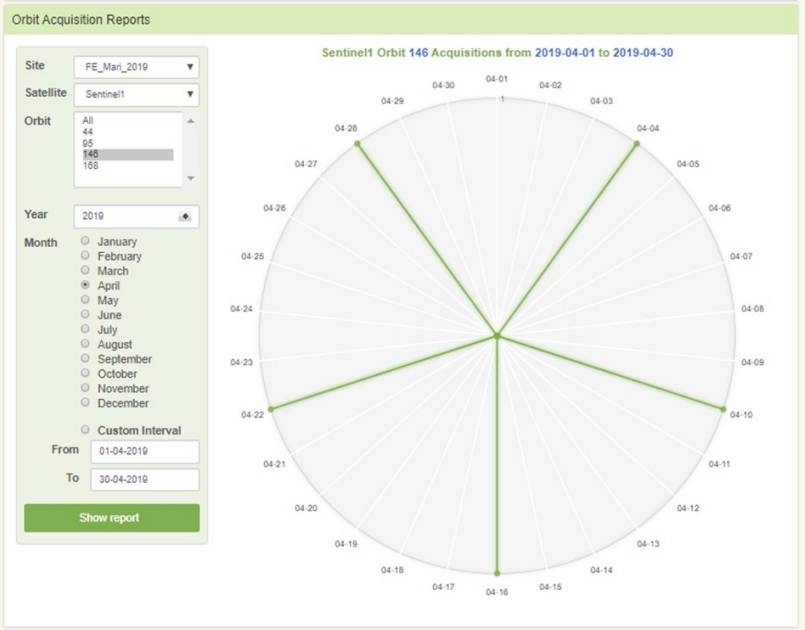
https://sentinels.copernicus.eu/web/sentinel/missions/sentinel-2/data-products

```
sudo -u postgres psql sen4cap -c "update config set value=true where key ='downloader.use.esa.l2a'";
```

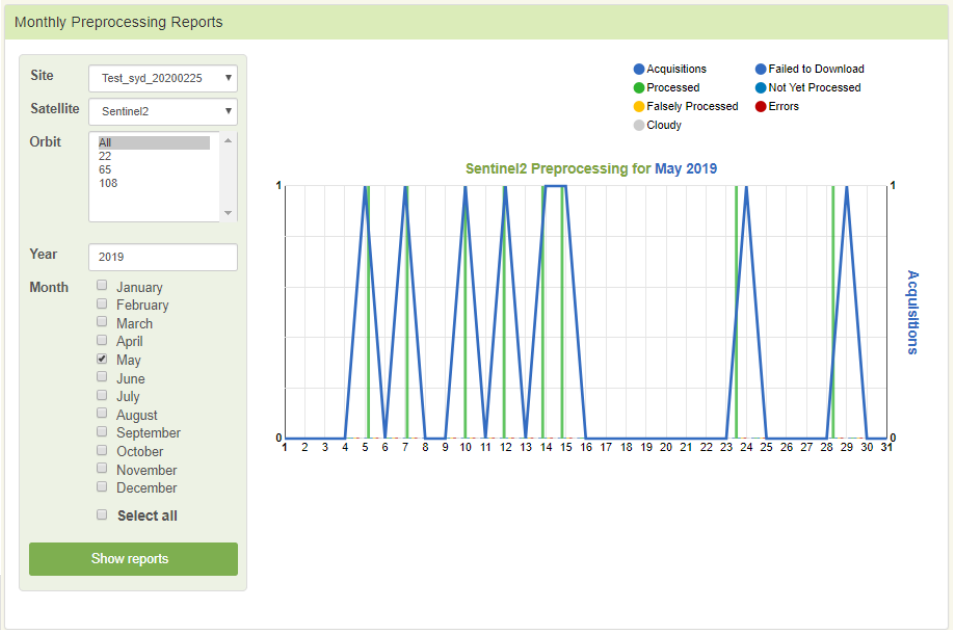
What are the **new features** in version 1.1?

2. Reports and statistics visualization for the downloaded and pre-processed products

Orbit Acquisitions Reports
-> number and date of data acquisitions



Monthly Preprocessing Reports
-> preprocessing status

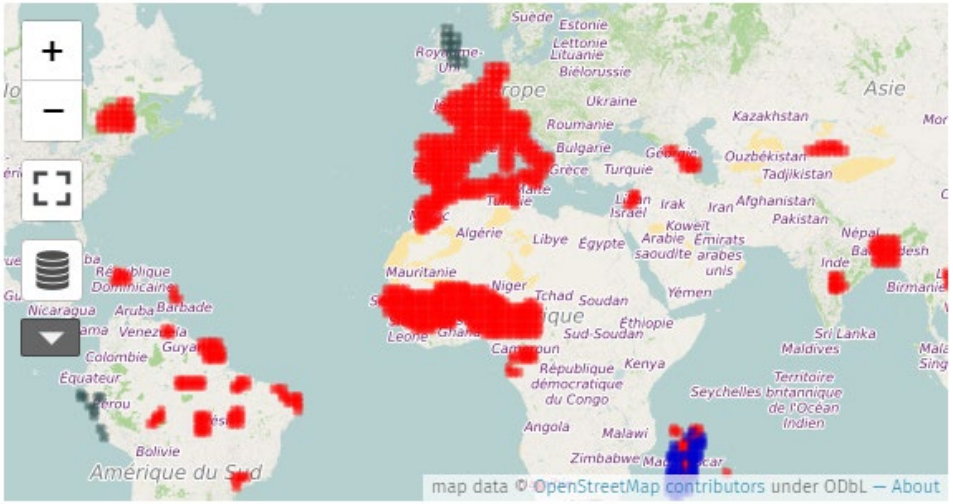


What are the **new features** in version 1.1?

3. Script for importing THEIA products

THEIA:

- French institution which provides various satellite data: https://www.theia-land.fr/donnees-satellitaires/
- S2 L2A archive:
  - NRT, not worldwide, archive?
  - Preprocessed with MAJA (by the MUSCATE processing center)

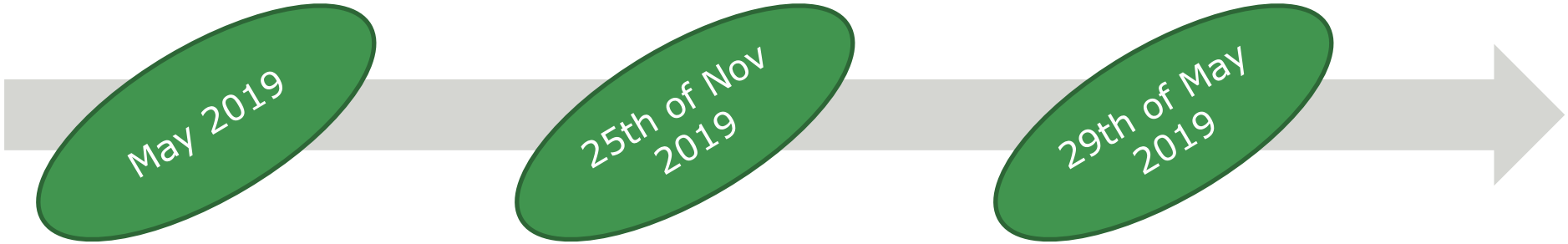


https://www.theia-land.fr/product/reflectance-sentinelle-2/

To import S2 L2A from THEIA (MUSCATE format):

- *import_theia.sh* script
- available in /usr/bin/

Version 1.1 released on the 29th of May 2020



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What have been **changed** in version 1.1?

1. **PostgreSQL server running now in a Docker container**

⇒ **Objective**: to avoid dependency conflicts between the system and the database

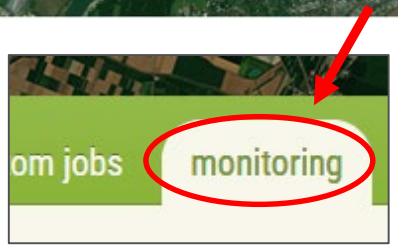
⇒ **New way to access the database**: psql -U admin sen4cap

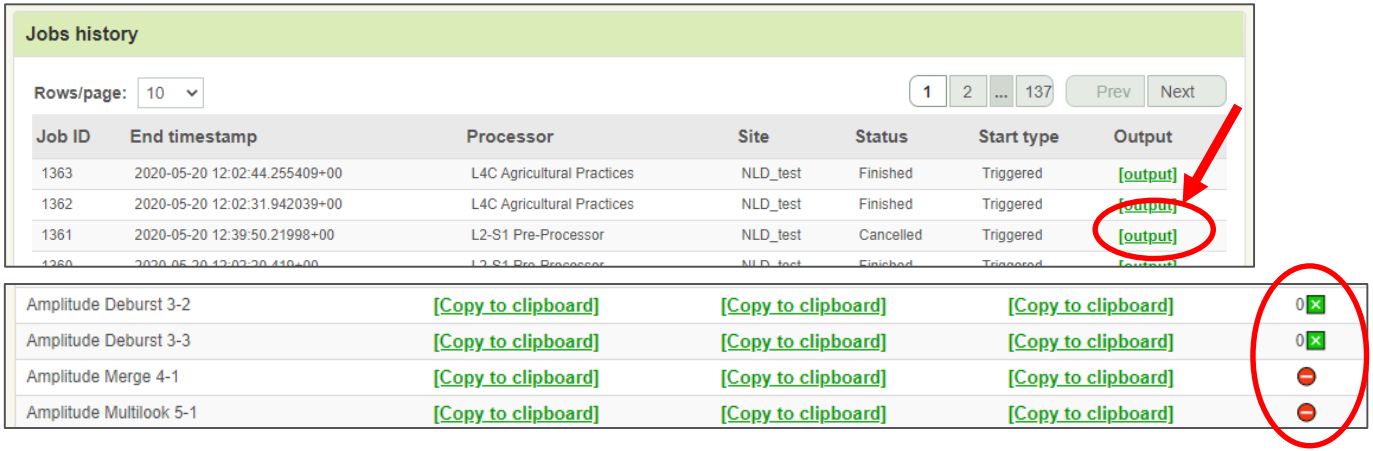
What have been **changed** in version 1.1?

1. PostgreSQL server running now in a Docker container
2. **Icons in the output of the jobs from the "monitoring" tab updated to reflect more step states**

⇒ **Objective**: to give more details concerning the different steps status

⇒ **New icons**: submitted, running, finished, cancelled, etc.





-> Submitted/Pending start
-> Needs input
-> Running
-> Paused
-> Finished with error
-> Finished with success
-> Cancelled
-> Other Error
-> Unknown status

What have been **changed** in version 1.1?

1. PostgreSQL server running now in a Docker container
2. Icons in the output of the jobs from the "monitoring" tab updated to reflect more step states
3. **MAJA training interval changed from 3 months to 2 months**

⇒ **Objective**: to avoid processing not required data

⇒ Because we observed that a 2 months archive is sufficient for MAJA to perform well in Europe

Version 1.1 released on the 29th of May 2020

May 2019

BETA version

Only available for the PAs

25th of Nov 2019

Version 1.0 release candidate

Open-source

Possibility for the PAs to access a test machine with the system

29th of May 2019

Version 1.1

⇒ New features
⇒ Changes
⇒ Corrections

Listed in the change log file

What have been **fixed** in version 1.1?

- Updates for the **new changes in USGS API**
- Corrections for avoiding skipping one product per page in **SciHub**
- Various corrections in **parcels declaration import** module and **L4A**, **L4B** and **L4C processors**
- Corrections in the **installation** and **upgrade scripts**
- Correction of the **S1 preview** in the web interface
- Corrections in the **web interface** for some issues in MS Edge browser
- **Datasource configuration changes** do not require any more to restart the services
- Various **ABI versioning fixed issues** that prevented the system from working after installing some system updates and/or lead to crashes in the L4C processor

Version 1.1 – How to install / update my system?

1. It is my first installation of the system

- ✓ Download the Sen4CAP distribution, SRTM and SWBD datasets and GIPP files, from the Sen4CAP website
- ✓ Follow the installation procedure described in the System User Manual (section 3) or in the « System installation » presentation:
  - Create user accounts on the data provider platforms
  - System download
  - MAJA download and installation
  - System installation
  - Configure data provider accounts
  - Configure data sources

2. I have already installed my system

- ✓ Download only the Sen4CAP distribution, from the Sen4CAP website
- ✓ Follow the steps described in the System User Manual (section 3.3.2):
  - Copy the Sen4CAP distribution on the machine where the system is installed
  - Run the « update.sh » script

NOTE: you can update your system even if you have already processed or are still processing data for a site and season:

- Data download and S1/S2/L8 preprocessing will be stopped during the update but triggered again when it is finished – everything is automatic
- L3B and L4x processors will be stopped during the update but not triggered again when it is finished. **You will have to relaunch them** manually after the update

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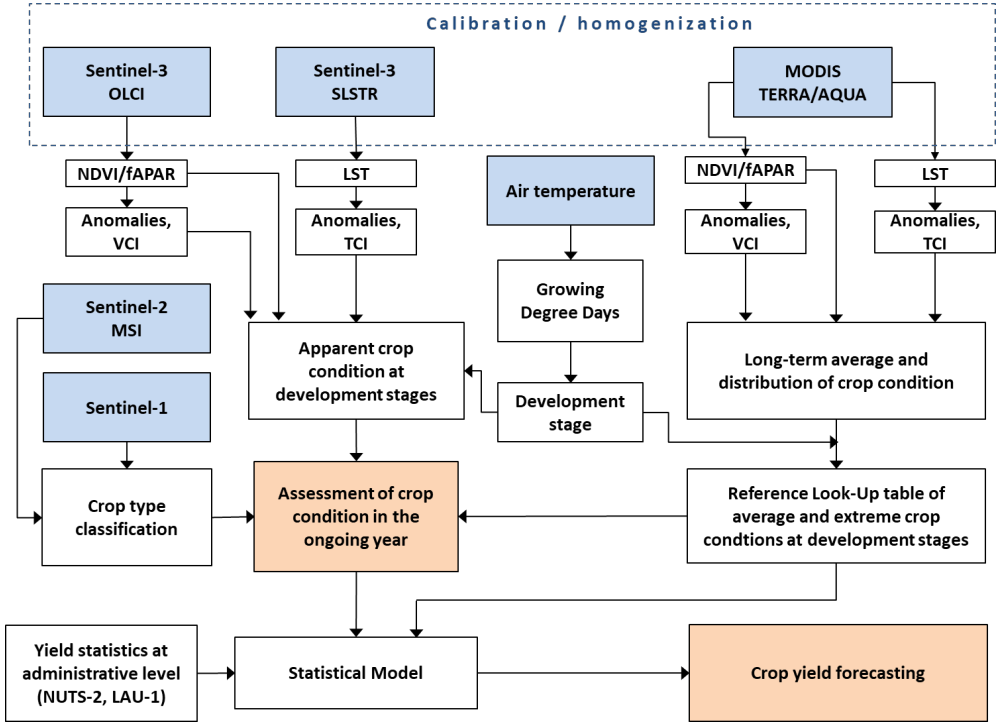
Testing Sen4CAP on CREODIAS

Jan Musiał
Jędrzej Bojanowski

Institute of Geodesy and Cartography
Modzelewskiego 27
Warsaw, Poland
jan.musial@igik.edu.pl

ESA EOStat project (2018-2020)
Satmirol project (2019-2021)



Statistics Poland

Agricultural statistics:

- Crop type classification using Sen2Agri and further Sen4CAP
- Monitoring of crop growth conditions on low-resolution satellite data
- Crop yield forecasting and feasibility at a parcel level

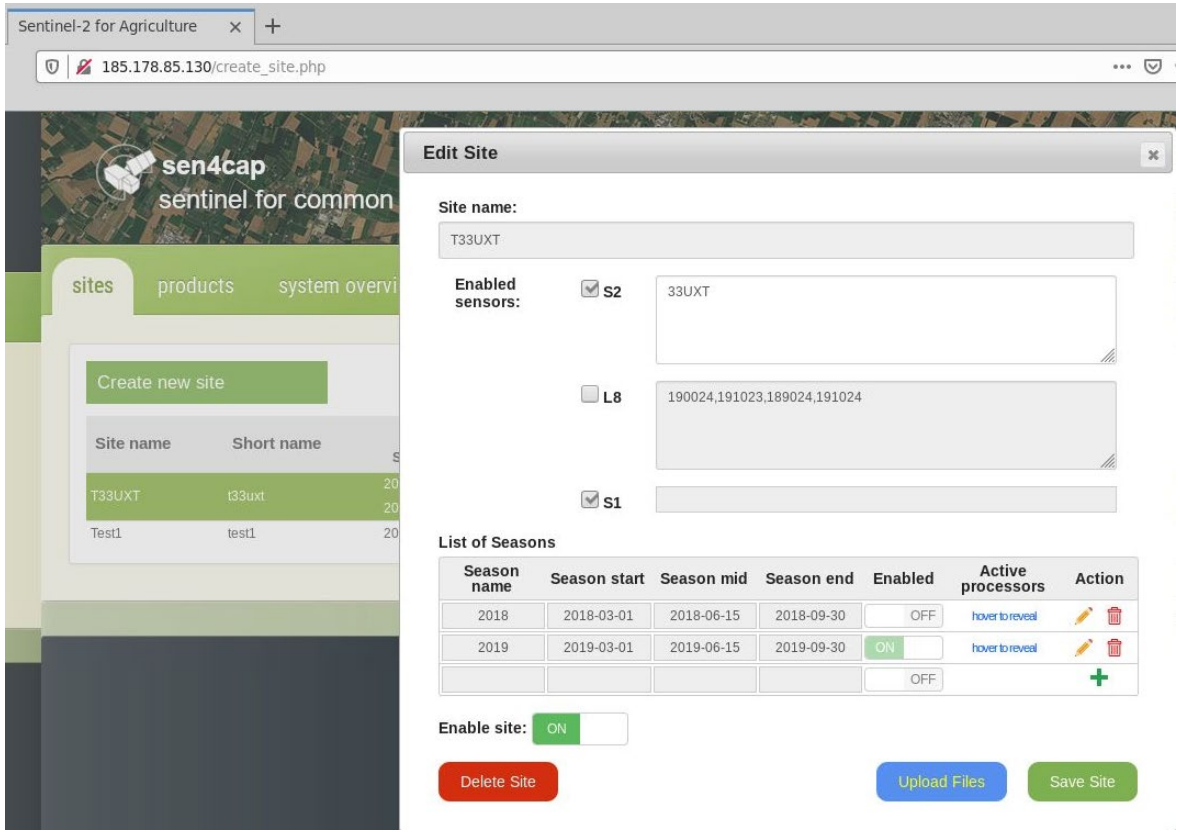
ARiMR

esa European Space Agency

Common Agriculture Policy:

- Verification of agricultural activities
- Catch crop detection
- Verification of maintenance of vegetation against erosion

Sen4CAP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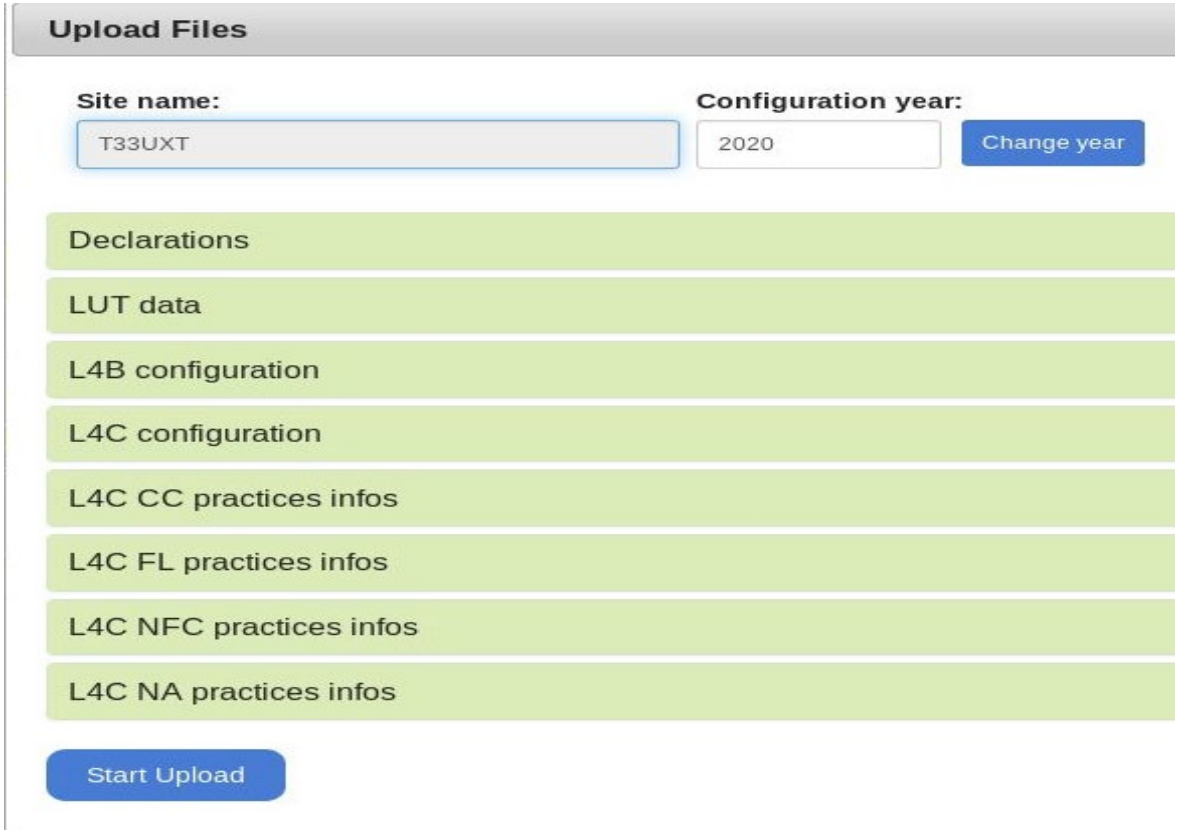
Sen4CAP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Site name:
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Configuration year:
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Change year
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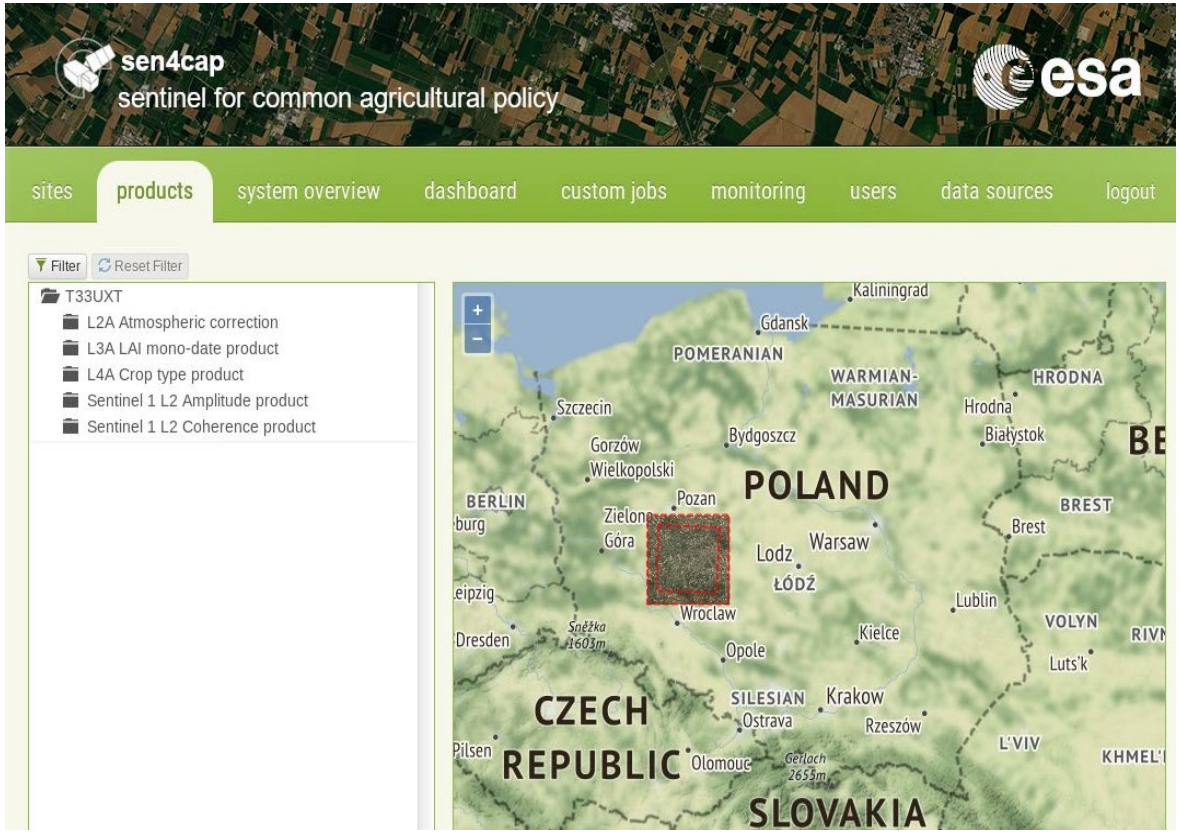
L4B configuration
L4C configuration
L4C CC practices infos
L4C FL practices infos
L4C NFC practices infos
L4C NA practices infos
Start Upload

Sen4CAP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L3A LAI mono-date product
L4A Crop type product
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Sentinel 1 L2 Coherence product
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Hrodna
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Wielkopolski
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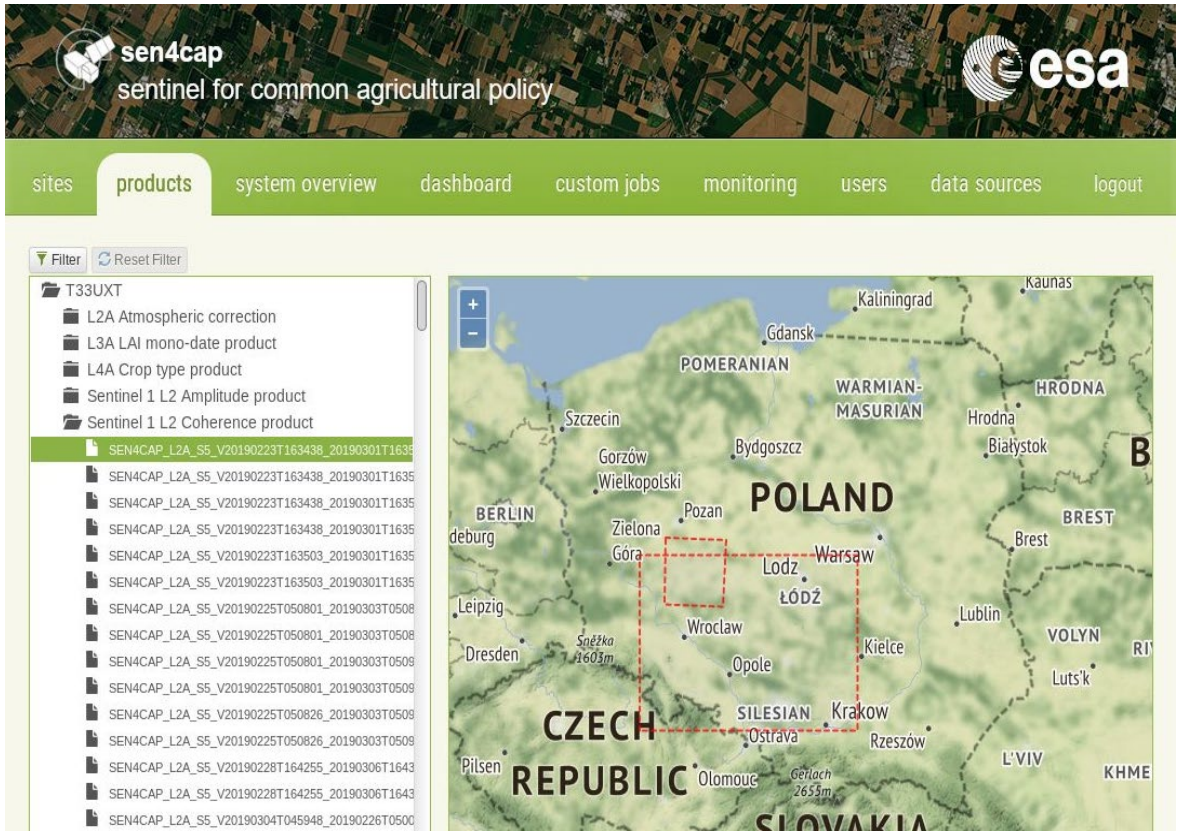
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Hrodna
Bydgoszcz
Białystok
Gorzów Wielkopolski
POLAND
BERLIN
Pozan
Zielona Góra
Warsaw
Lodz
ŁÓDŹ
BREST
Brest
Leipzig
Wroclaw
Lublin
Dresden
Kielce
VOLYN
Opole
Luts'k
SILESIAN
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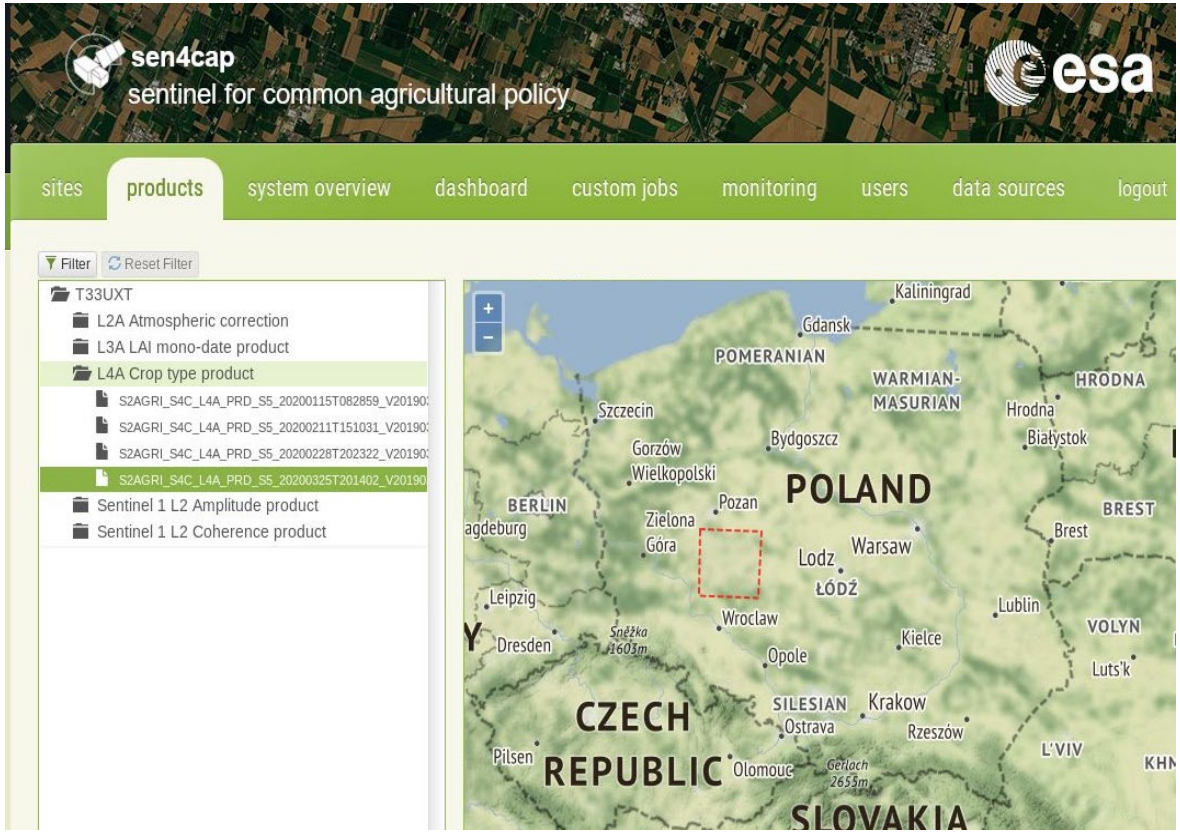
Ostrava
Rzeszów
Pilsen
Olomouc
L'VIV
KHME

Sen4CAP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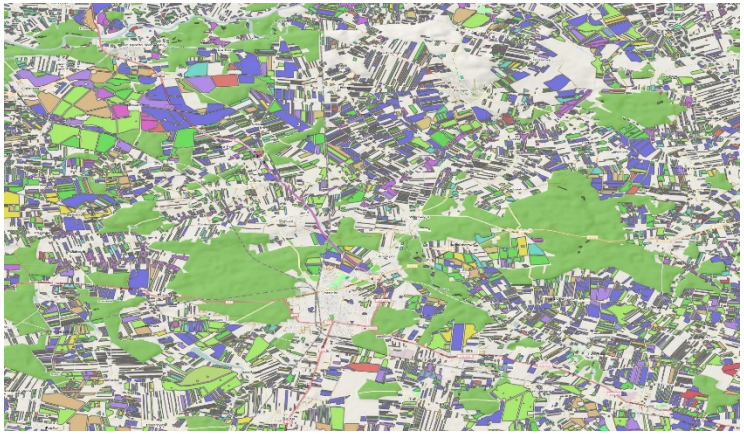
S2AGRI_S4C_L4A_PRD_S5_20200211T151031_V201903
S2AGRI_S4C_L4A_PRD_S5_20200228T202322_V201903
S2AGRI_S4C_L4A_PRD_S5_20200325T201402_V201903
Sentinel 1 L2 Amplitude product
Sentinel 1 L2 Coherence product
Kaliningrad
Gdansk
POMERANIAN
WARMIAN-
MASURIAN
HRODNA
Szczecin
Hrodna
Bydgoszcz
Białystok
Gorzów
Wielkopolski
POLAND
BERLIN
Pozan
Zielona
Góra
Warsaw
Brest
BREST
Lodz
ŁÓDŹ
Leipzig
Lublin
Wroclaw
VOLYN
Dresden
Kielce
Opole
Luts'k
SILESIAN
Krakow
CZECH
Ostrava
Rzeszów
REPUBLIC
Pilsen
Olomouc
L'VIV
SLOVAKIA

Sen4CAP crop classification (Level-4A product)

	roslina	nr_produce	dzrol	crop	ori_id	ori_hold	ori_crop	CT_pred_1	CT_conf_1	CT_pred_2	CT_conf_2
277	pszenica ozima	42742404.00...	36621.00000...	18	36621	42742404	18	18	0.847000000...	20	0.074000000...
278	zyto ozime	27592645.00...	36624.00000...	34	36624	27592645	34	19	0.162000000...	20	0.107000000...
279	zyto ozime	72572152.00...	3663.000000...	34	3663	72572152	34	34	0.578000000...	20	0.197000000...
280	kukurydza	27602825.00...	36632.00000...	11	36632	27602825	11	11	0.930000000...	26	0.014000000...
281	zyto ozime	32812012.00...	36633.00000...	34	36633	32812012	34	34	0.707000000...	20	0.146000000...
282	tuz	27907501.00...	3015.000000...	30	3015	27907501	30	30	0.138000000...	11	0.121000000...



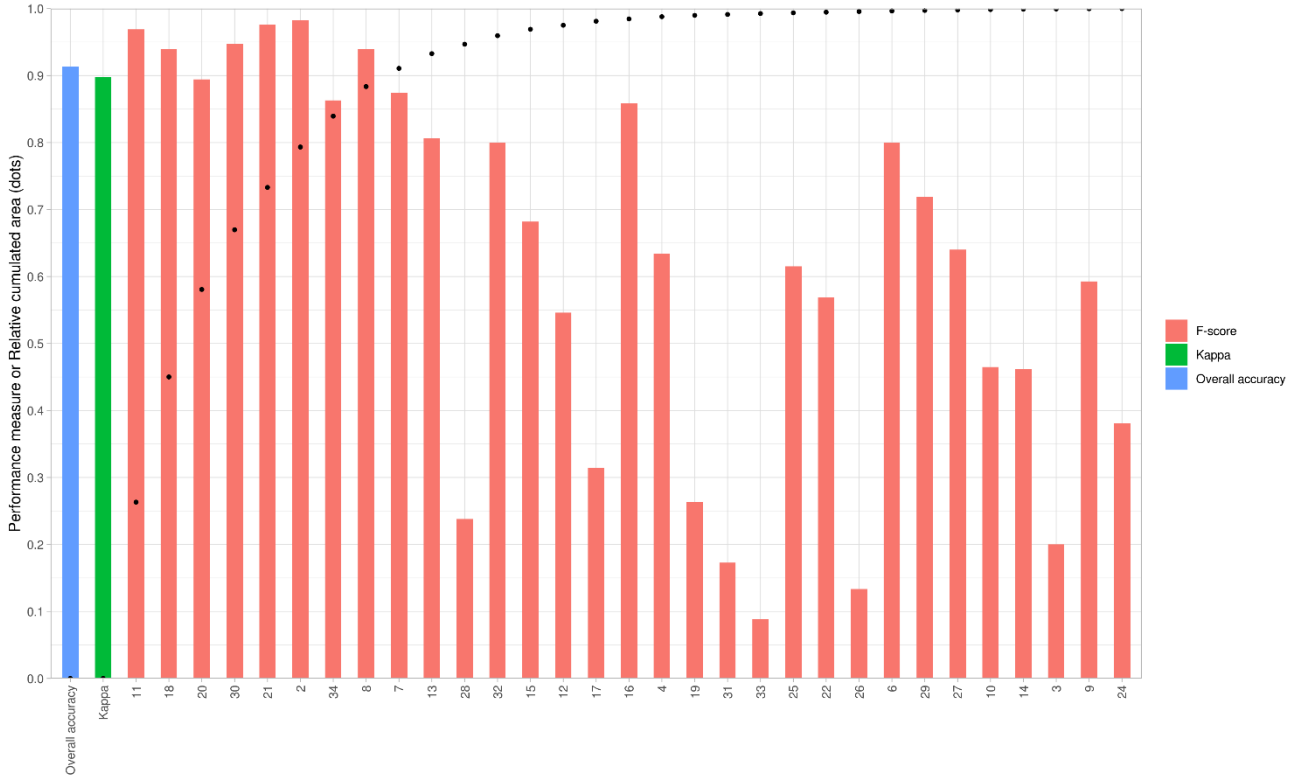
Overall classification accuracy is: 0.91
Overall classification kappa is: 0.90

Crop classification was performed for 2019 for 34 different crop types.

Sen4CAP crop classification algorithm is based on the fusion of the optical and radar data (Sentinel-1 & 2)

Sen4CAP classification gives two most probable crop types with the associated uncertainties estimates.

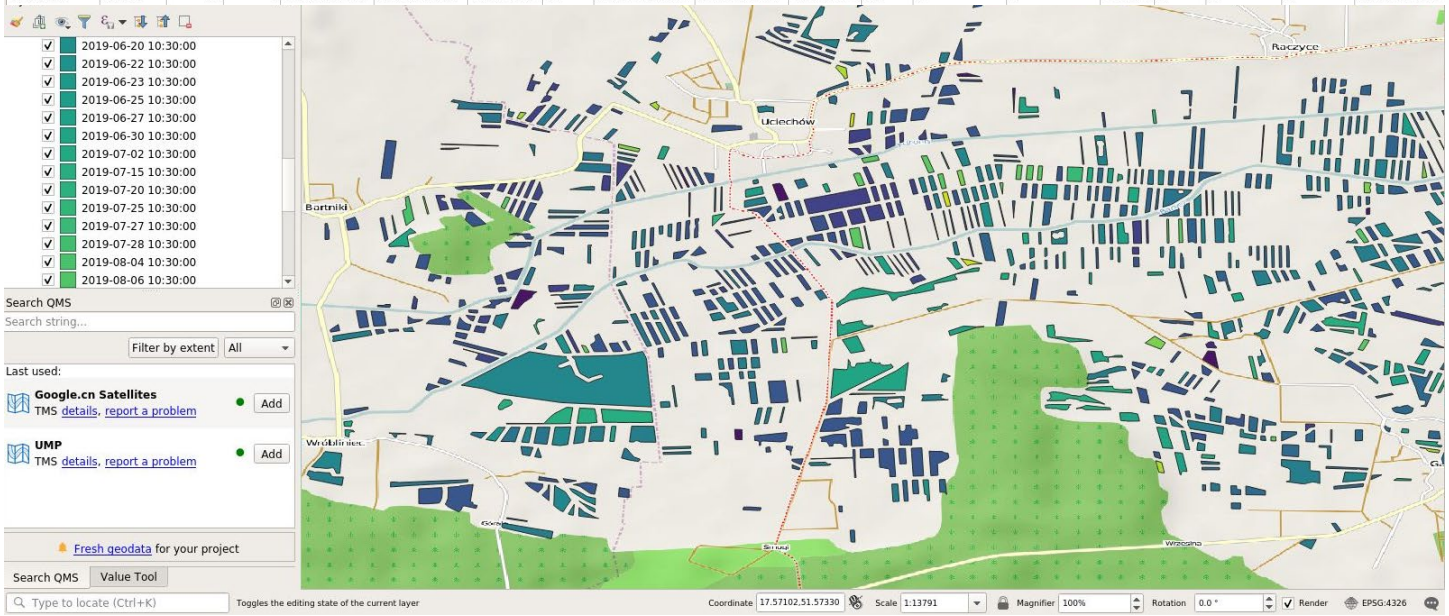
Sen4CAP


Performance measure or Relative cumulated area (dots)
1.0
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.0
Overall accuracy
Kappa
11
18
20
30
21
2
34
8
7
13
28
32
15
12
17
16
4
19
31
33
25
22
26
6
29
27
10
14
3
9
24
F-score
Kappa
Overall accuracy

	burak cukrowy	cebula zwyczajna	gorczyca	gorczyca biała	groch siewny	jęczmień jary	jęczmień ozimy	kapusta	koniczyna czerwona	kukurydza	lubin	lucerna	marchew	owies	plantacje drzew owocowych	pomidor	pszenica jara	pszenica ozima	pszenżyto jare	pszenżyto ozime	rzepak ozimy	sad	seler	soja	straczkowe	TiUZ_MD	trawy_na_go	truskawka	tuz	ugor	warzywa	ziemiaki	ziemniak	żyto jare	żyto ozime
burak cukrowy	253	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
cebula zwyczajna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28	0	0	0
gorczyca	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
gorczyca biała	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
groch siewny	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0
jęczmień jary	0	0	0	0	0	66	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
jęczmień ozimy	0	0	0	0	0	0	241	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
kapusta	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
koniczyna czerwona	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
kukurydza	0	0	0	0	0	0	0	0	0	918	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
lubin	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0
lucerna	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	58	0	0	0	0	0	0	0	0
marchew	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
owies	0	0	0	0	0	0	0	0	0	0	0	0	0	0	25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
plantacje drzew owocowych	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pomidor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42	0	0	0
pszenica jara	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pszenica ozima	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pszenżyto jare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
pszenżyto ozime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
rzepak ozimy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
sad	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
seler	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0
soja	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
straczkowe	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TiUZ_MD	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
trawy_na_go	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	45	0	0	0	0	0	0	0	0
truskawka	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0
tuz	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	196	0	0	0	0	0	0	0	0
ugor	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0
warzywa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ziemiaki	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ziemniak	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	62	0	0
żyto jare	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0
żyto ozime	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	104

Sen4CAP grass mowing (Level-4B product)

Ori_hold	Ori_id	Ori_crop	mow_n	m1_dstart	m1_dend	m1_conf	m1_mis	m2_dstart	m2_dend	m2_conf	m2_mis	m3_dstart	m3_dend	m3_conf	m3_mis	m4_dstart	m4_dend	m4_conf
37182145	24082	28	0	0	0	0.000000...	0	0	0	0.000000...	0	0	0	0.000...	0	0	0	0.000000000...
40672486	2409	30	1	2019-06-10 ...	2019-06-20 ...	0.768000...	S2	0	0	0.000000...	0	0	0	0.000...	0	0	0	0.000000000...
75090634	2983	30	2	2019-06-22 ...	2019-06-30 ...	0.665000...	S2	2019-09-05 10...	2019-09-15 ...	0.557000...	S2	0	0	0.000...	0	0	0	0.000000000...
29894652	2984	30	1	2019-05-18 ...	2019-06-17 ...	0.524000...	S2	0	0	0.000000...	0	0	0	0.000...	0	0	0	0.000000000...
27597402	2411	30	1	2019-06-02 ...	2019-06-10 ...	0.680000...	S2	0	0	0.000000...	0	0	0	0.00	0.000000000000000		0	0.000000000...
63215395	24111	28	1	2019-08-24 ...	2019-08-26 ...	0.510000...	S2	0	0	0.000000...	0	0	0	0.000...	0	0	0	0.000000000...
36987575	24132	28	2	2019-06-02 ...	2019-06-12 ...	0.620000...	S2	2019-09-05 10...	2019-09-18 ...	0.901000...	S2	0	0	0.000...	0	0	0	0.000000000...



Sen4CAP agricultural activities (Level-4C product)

The generation of the Level-4C product requires in-situ input training data. Our approach is first to derive this parameters using IGiK toolbox and then fetch the result to Sen4CAP for the sake of inter-comparison.

Appendix F.14 Agricultural input tables file

The agricultural input table files need to be provided for each configured practice for a site.

These files provide information about the main crop code and vegetation and practices dates. An example for the Catch Crop input table file to be uploaded in the system can be found below. Please note that these files are ingested by the system and preprocessed by the system, generating derived files that are used after that by the Agricultural Practices processor (the idea is that these files are not used directly by the processor itself).

```
FIELD_ID,MAIN_CROP,VEG_START,H_START,H_END,PRACTICE,P_TYPE,P_START,P_END
31.0000003730124.001,1933,2019-05-20,2019-06-03,2019-10-15,CatchCrop,CatchCrop_1,2019-10-15,NA
31.0000003487830.001,242,2019-05-20,2019-06-03,2019-10-15,CatchCrop,CatchCrop_1,2019-10-15,NA
31.0000004049812.001,3506,2019-05-20,2019-06-03,2019-10-15,CatchCrop,CatchCrop_1,2019-10-15,NA
```

Thank you for you attention!

Webinar outline

- Sen4CAP overview
- System evolution – Version 1.1
- User experience: Institute of Geodesy and Cartography, Poland
- **RACE initiative**
- Next events // Questions & Answers

RACE initiative from EC and ESA

Rapid Action Coronavirus Earth observation dashboard platform

https://race.esa.int/

https://www.copernicus.eu/en/events/events/european-commission-esa-press-conference-race-initiative

- Using EO satellite data to measure the impact of the coronavirus lockdown and monitor post-lockdown recovery
- First demonstration of EO data ingestion supporting decision-making
- Public information – transparency

How space can help in times of crisis

- Europe severely impacted by COVID-19
- Space and Earth Observation are a powerful support tool
- Europe has excellent EO capabilities
- ESA and EU set up: **Rapid Action on COVID-19 and EO**

Copernicus

RACE

Rapid Action on COVID-19 and EO

RACE Objectives

- Provide public EO info on the state of European society and economy
- Using European EO: Copernicus Sentinels and Third Party Missions

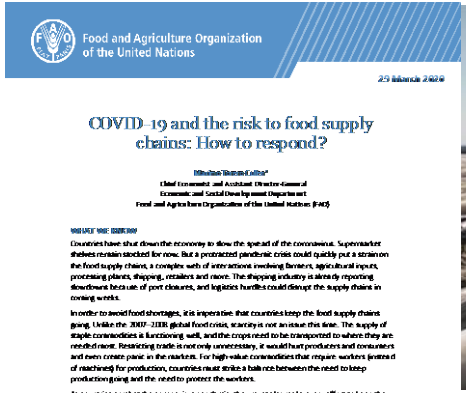
RACE focus areas

- **Climate:** greenhouse gas concentrations
- **Environment**: air and water quality evolution
- **Economic** indicators: industry, shipping, construction, trade, traffic
- **Agriculture**: asparagus, wheat, etc.

COVID19 impact on agricultural production in Europe

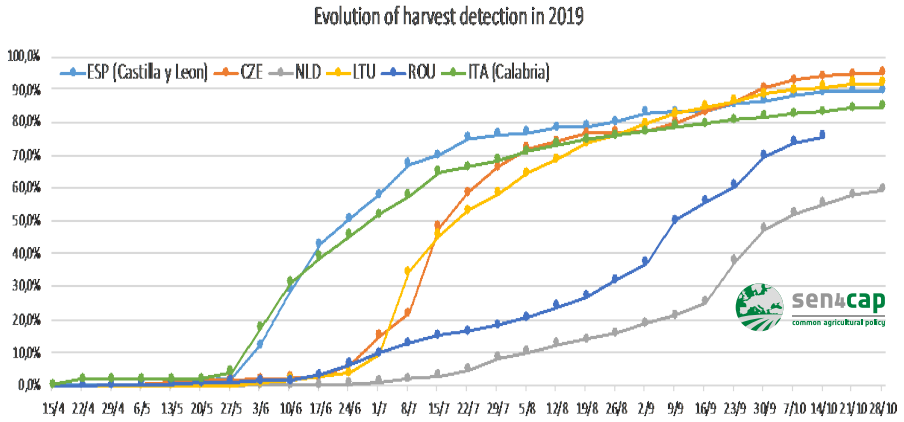
1. Impact on labour intensive harvesting of **vegetables & fruits**
   a) Asparagus harvest in Germany, Brandenburg
   b) Strawberry harvest in Spain, Huelva province
2. Verification of delay or disruption of **winter crop** harvesting in Spain
   - Timely national statistics on winter wheat area and harvest progress

•Goal: Monitoring the impact of lock-down, border closures & transport restriction on food production and supply chains


Food and Agriculture Organization of the United Nations

25 March 2020

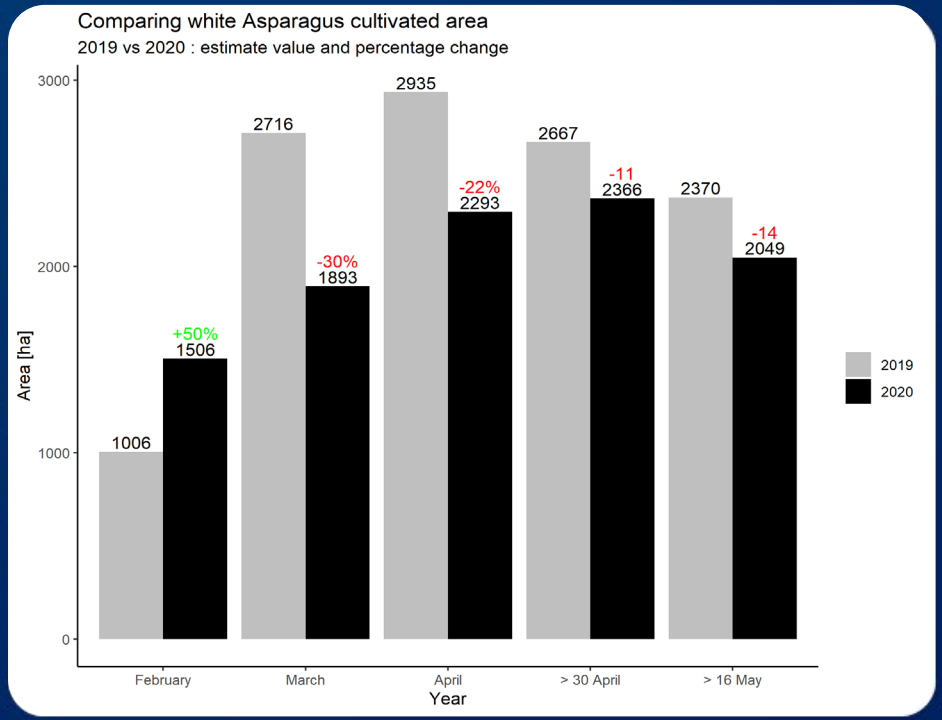
COVID-19 and the risk to food supply chains: How to respond?



Agriculture – productivity is impacted

22 to 30% reduction of labour-intensive asparagus production in Brandenburg, Germany, due to border closure impact on the labour market

Asparagus field covered in white plastic
Copernicus Sentinel-2



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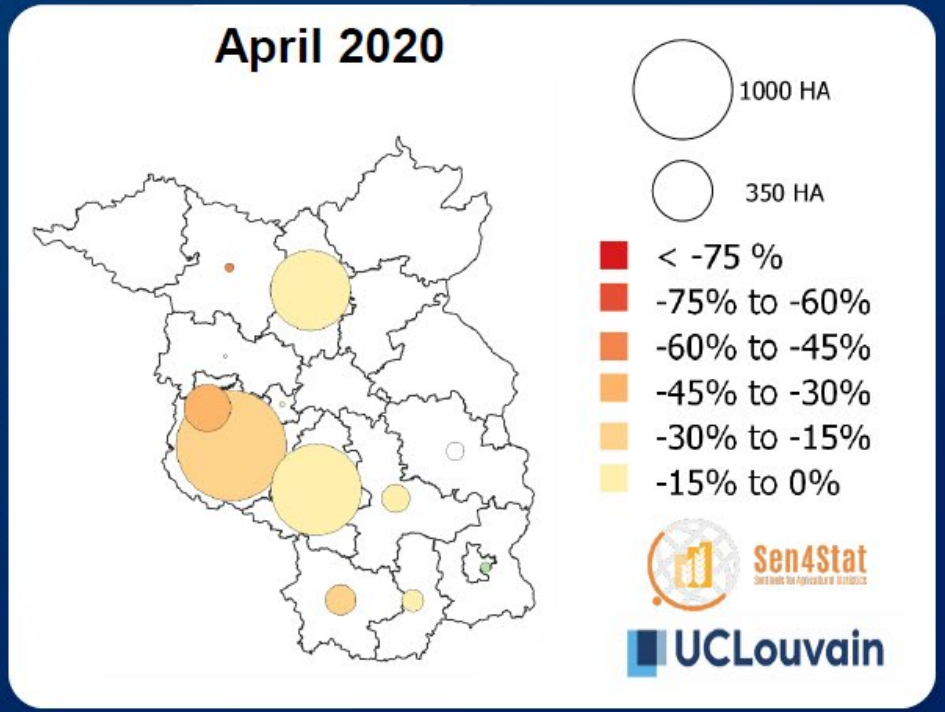


https://race.esa.int/

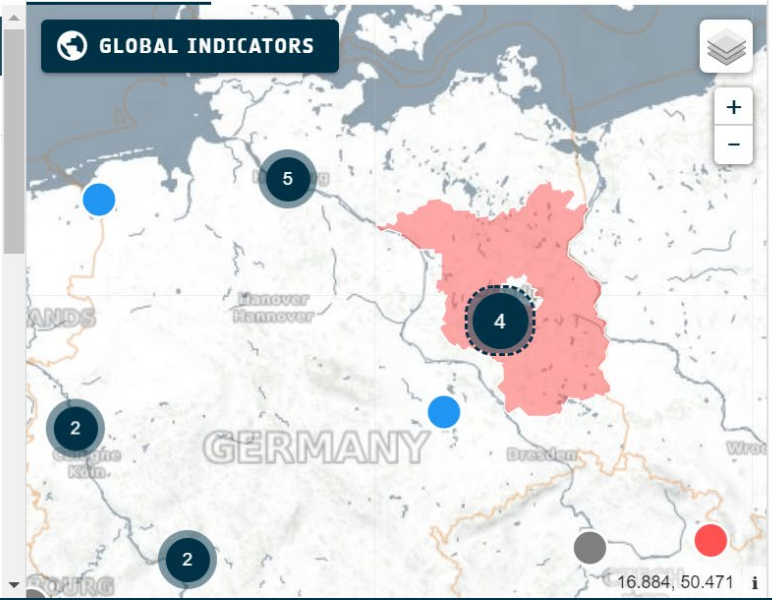
RAPID ACTION ON CORONAVIRUS AND EO

WELCOME ABOUT

COUNTRIES INDICATORS MAP TABLE

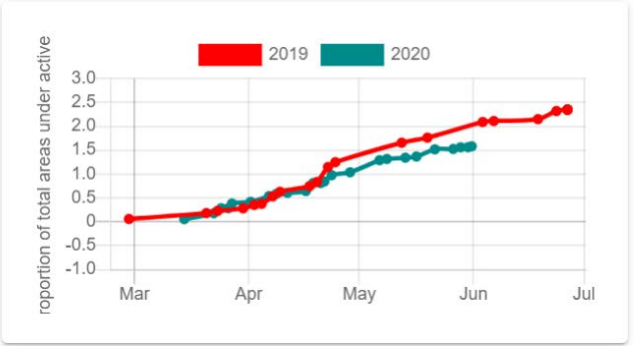
All countries
Regional
Austria
Belgium
Bulgaria
Croatia
Czechia
Finland
France
Germany

GLOBAL INDICATORS



Brandenburg Region, Activity Indicator

White asparagus field - Cumulative proportion of total area



This data is updated: Weekly

COVID-19 impact on agricultural production in Europe

Organizations like FAO and WFP expressed their concerns

EDC service for ESA | Legal | Privacy

eodash v1.0 by EOX FEEDBACK

Webinar outline

- Sen4CAP overview
- System evolution – Version 1.1
- User experience: Institute of Geodesy and Cartography, Poland
- RACE initiative
- **Next events // Questions & Answers**

Next events

- Next webinars will be in September and November
  - September 1
  - November 3

- In June and July: online Q&A session on GoToMeeting (1 hour)
  - 23 June
  - 7 July
  - Possibly 14 July, depending on the needs

- **Your questions ???**


Thank you for your attention
and your contribution
sen4cap
common agricultural policy