



sen4cap
common agricultural policy

Welcome to the 2nd 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*



Members of the consortium available to answer your questions:

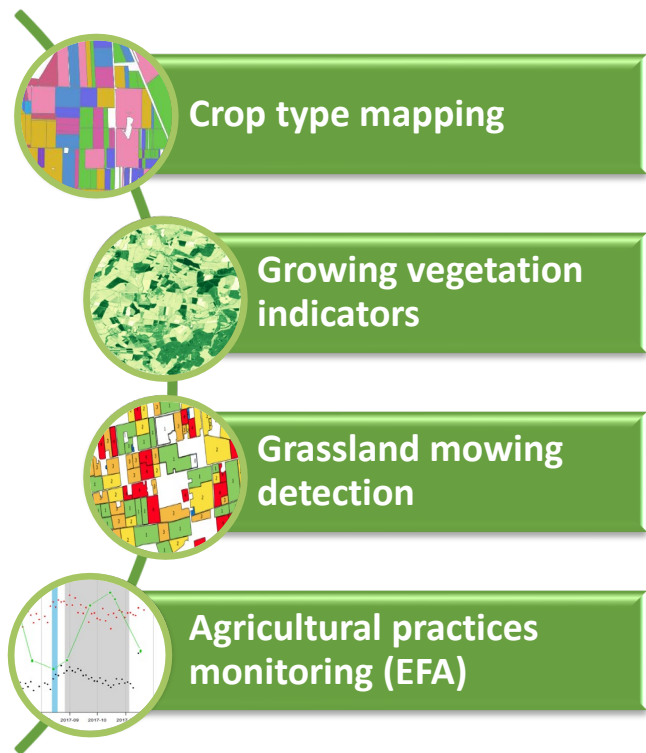
Lubos Kucera from *GISAT*; Katja Bajec from *Sinergise*; Cosmin Udroi, and
Laurentiu Nicola from *CS Romania*



- Sen4CAP overview
- System evolution – new version 1.1 coming soon
- User perspective – Sen4CAP on CREODIAS
- 2 successful online trainings
- Next events // Questions & Answers

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Use Cases: Sentinels to support payment decisions



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

Demonstration and validation
*2018 & 2019 agri seasons –
national NRT*

Use cases selection

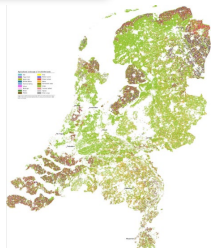
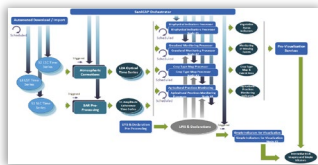
Products Specifications

Benchmarked Methods

Algo & System design

Prototype products

Validation



Use cases demonstration

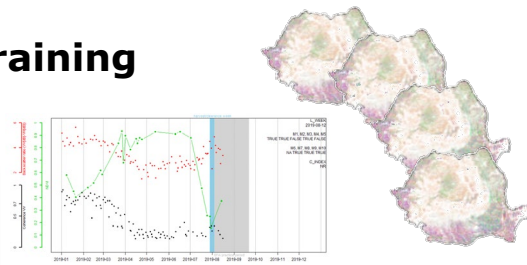
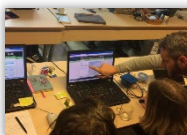
National scale

Continuous monitoring

Validation & Fitness-to-use assessment

Capacity building and training

System qualification



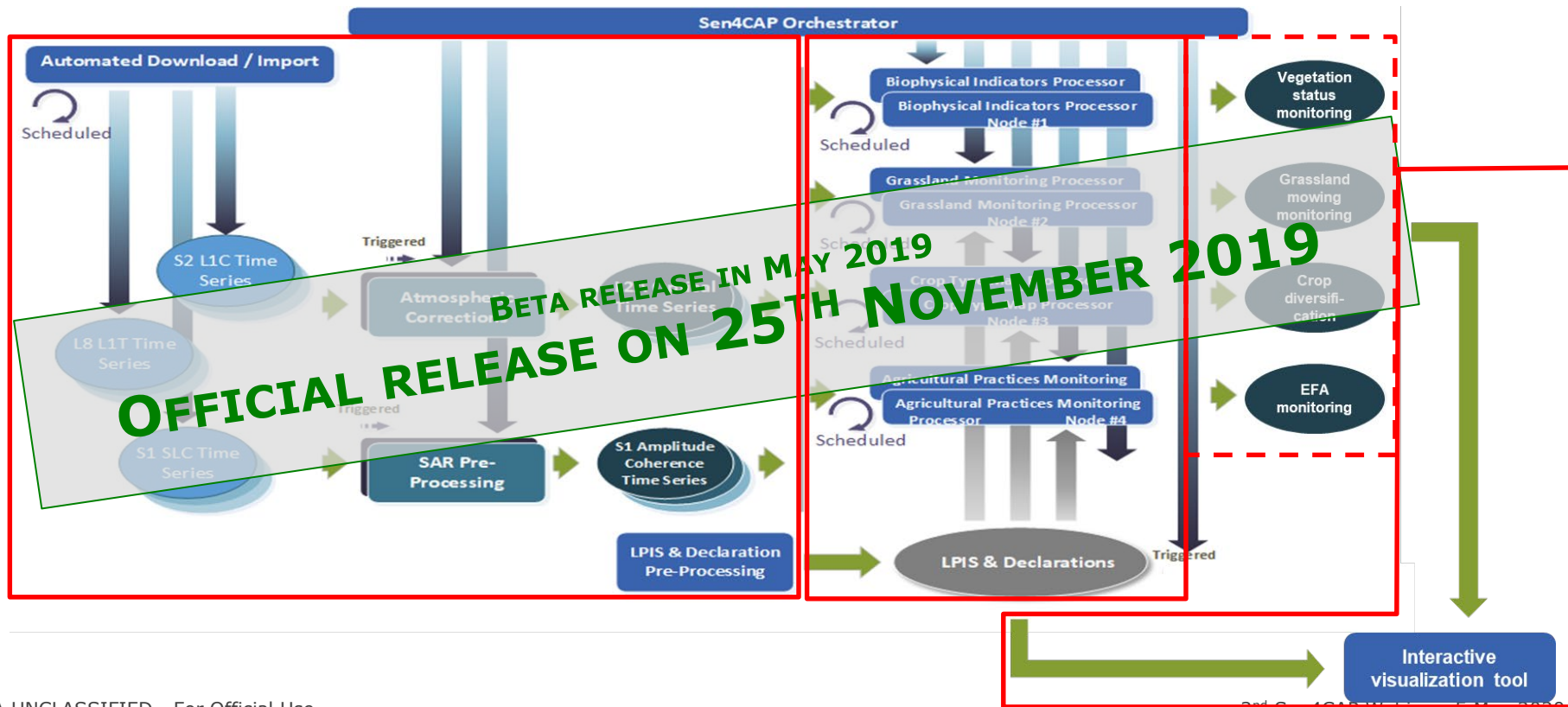
ESA UNCLASSIFIED - For Official Use

2nd Sen4CAP Webinar, 5 May 2020



European Space Agency

Sen4CAP system (v1.0)



ESA UNCLASSIFIED - For Official Use

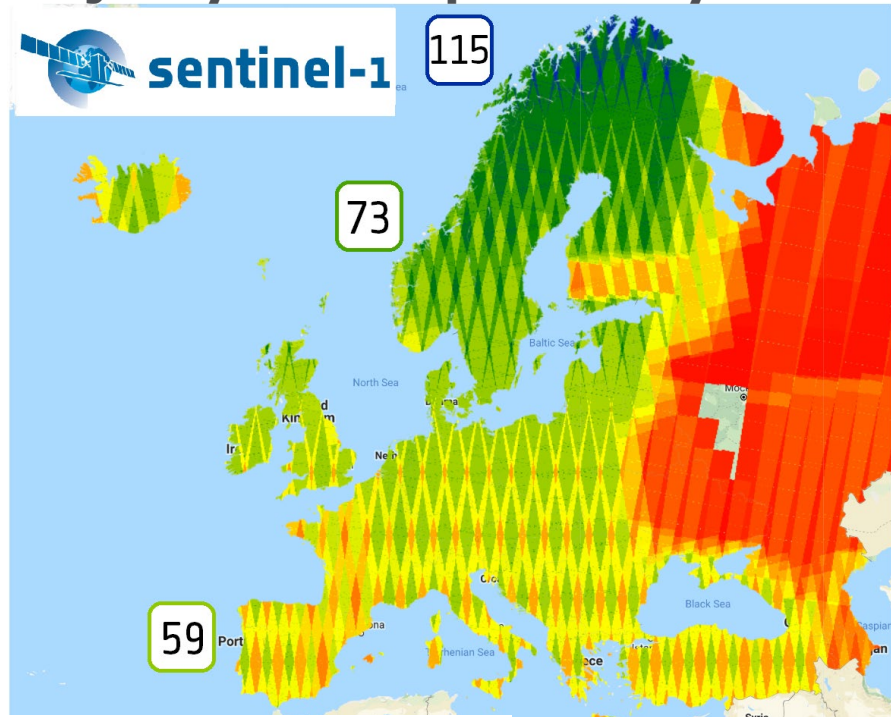
2nd Sen4CAP Webinar, 5 May 2020



European Space Agency

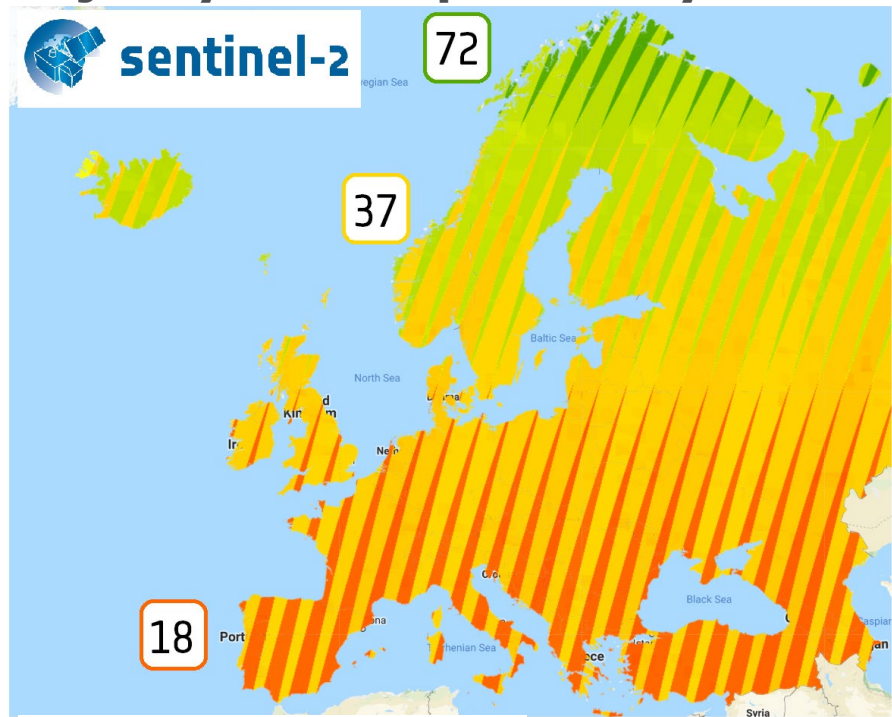
Input EO time series

Majority of Europe >2 day revisit



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

Majority of Europe >3 day revisit



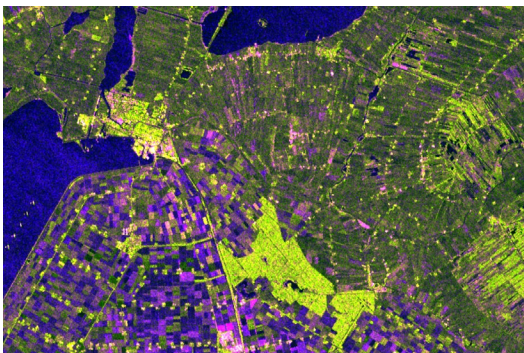
S-2A & -2B (July-Sept 2018)

2nd Sen4CAP Webinar, 5 May 2020

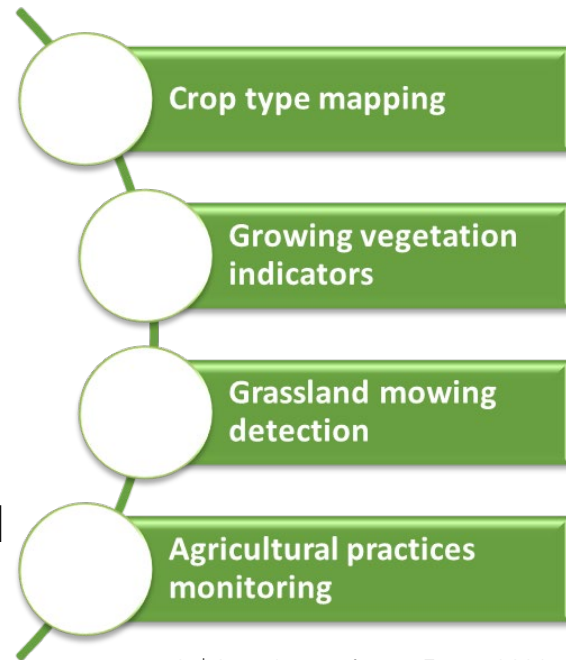
Large dataset of markers from S1 & S2 for a national coverage



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



Metrics / markers stored for each LPIS/GSAA parcel



Sen4CAP system : simple parametrization and subsidy application upload



Before the monitoring period

Monitoring period

System initialization



Start of the season

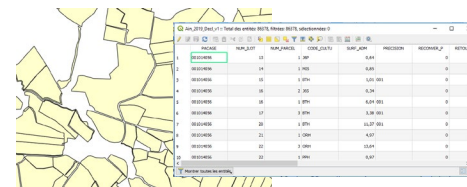
End of the season...



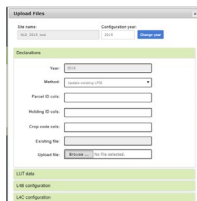
Sen4CAP system : main parameters settings

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



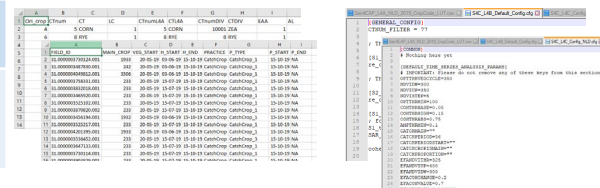
Upload data



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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Version 1.1: corrections and new features



- Corrections in the sen4cap services for downloading and S1 preprocessing
 - Handling S1 pre-processing steps in monitoring tab
 - Corrections in generating the quicklook of S1 products
 - Handling the load datasource configuration in the database (each time)
 - Query corrections for S1 pre-processing
 - ...
- Corrections in the advanced processors (L4A, L4B and L4C)
 - Following feedbacks from users in specific configurations
 - Improvements in the outputs generation and parametrization (L4A)

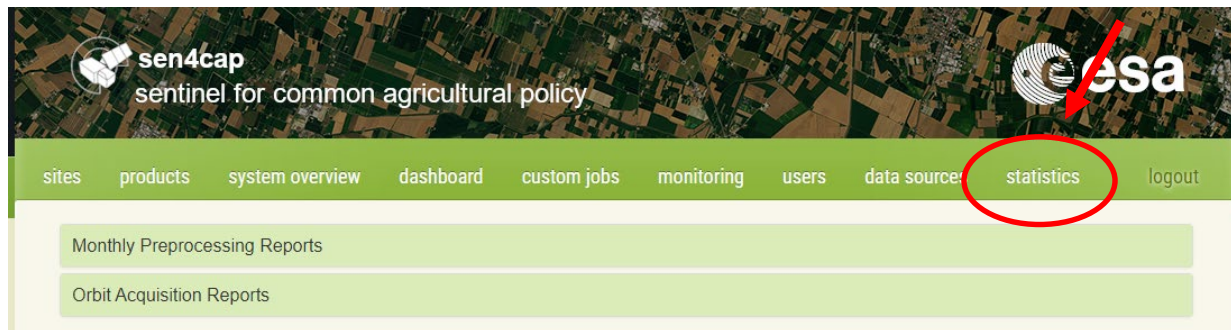
Version 1.1: corrections and new features



- Corrections in the automatic scheduling

Processor	1st launch	Repeat
L3B biophysical indicators	Start season	Every day
L4A crop type mapping	Mid-season date	Every month
L4B grassland mowing detection	Start season + 31 days	Every month
L4C agricultural practices monitoring	Start season + 7 days	Every week

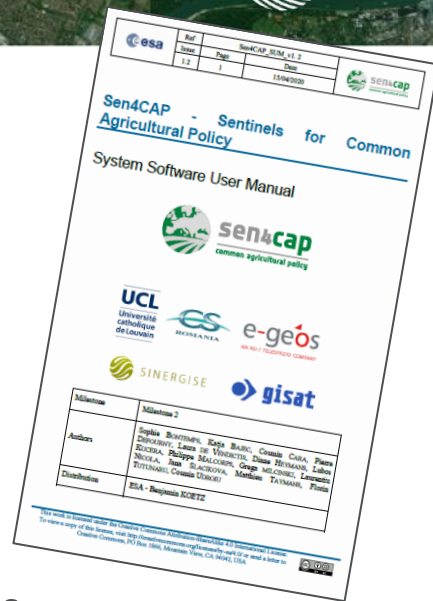
- Improved User Interface: statistics tab



Version 1.1: 2 options



- **Installation from scratch:** explained in the SUM (point 3.3) and in the online training material
 - Create user accounts on the data provider platforms
 - System download
 - MAJA download and installation
 - System installation
 - Configure data provider accounts
 - Configure data sources
- **Update script:** explained in the SUM (point 3.3.2)
 - Download the new package (no need to download again the GIPP files, SRTM and SWBD datasets)
 - Copy the package on the machine and unzip
 - Go in */Sen4CAPDistribution/install_script/
 - Run the script: `sudo ./update.sh`



Other features we are working on (and that will be included in the next version)



- Integration of the EU-DEM for the Northern countries
- Docker solution
 - Containing the whole system
 - Compatible with Windows and Mac
 - More reliable and easier integration of the tools updates

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Sen4CAP on CREODIAS

Sybrand van Beijma

EO Data Scientist

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Product & Business Development Manager

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READY-TO-USE

Sen4CAP environment as an image

- ▶ Required components already included (MAJA Software, PostgreSQL, Apache, etc),
- ▶ CentOS with GUI (Graphic User Interface),
- ▶ Sen4CAP software connected to local EO DATA Repository, (Sentinel-1, Sentinel-2, Landsat-8),
- ▶ SRTM (DEM) and SWBD included,
- ▶ X2Go Client (VNC) ready.

5 STEPS FOR READY-TO-USE SYSTEM

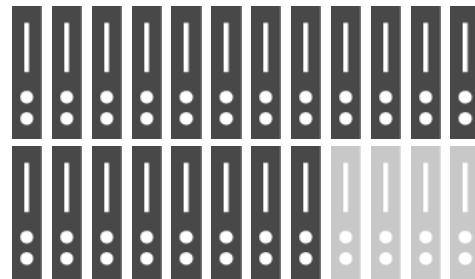
- ▶ Register on CREODIAS.eu,
- ▶ Login to Cloud Dashboard,
- ▶ Create Virtual Machine using Sen4CAP image,
- ▶ Configure the access rights,
- ▶ Login from your internet, browser or through X2Go (VNC Client)

The screenshot shows the CREODIAS login interface. At the top, there's a navigation bar with links for 'FAQ', 'Order now', 'Contact us', 'Register', and 'Log in'. Below this is a dark header with the 'CREODIAS powered by CloudFerro' logo and a menu with 'Offer', 'Tools', 'Resources', 'Data Offer', 'Third Party Services', 'News', 'Knowledgebase', and a search bar. The main content area is titled 'LOGIN' and features a login form with fields for 'Email address' and 'Password', a 'Remember me' checkbox, and buttons for 'Login' and 'Forgot Password?'. Below the login form is a 'Federated Identity Provider' section with a dropdown menu and an 'Authenticate' button. To the right of the login form, there are sections for 'CREODIAS USERS' (with a 'Log in' button), 'NEW USERS' (with a 'REGISTER' button), and 'FEDERATED USERS' (with a description of federated identity providers). The footer contains logos for CloudFerro, ESA, GEOMATYS, SINERGISE, and a Privacy Policy link.

WHAT WE OFFER

- ▶ Always the latest version of Sen4CAP,
- ▶ Flexible billing model for Sen4CAP users,
- ▶ EO Data Expert and Sales Support,
- ▶ Copernicus data always up to date,
- ▶ Customized contract.

WHAT DO YOU GAIN?



TIME



FULL ACCESS
TO VM



REQUIRED
EO DATA



**Sen4CAP VM
for the price of a
standard VM**

WHAT'S NEXT?

- ▶ Adapting software to VHR images,
- ▶ Dedicated Sen4CAP tech support,



Thank you for your attention

Sybrand van Beijma – svbeijma@cloudferro.com

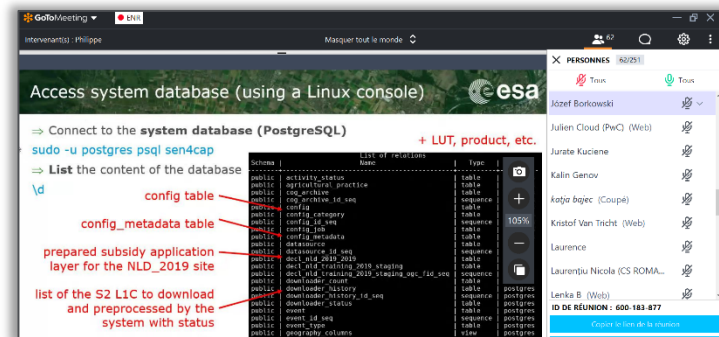
Marcin Bialecki – mbialecki@cloudferro.com

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Online trainings from 21st and 28th April



- Agenda focusing on **system operation**: overview, first steps, installation and IT requirements
- Quite successful: 2 events full within 5 days
- Material is online:
 - Presentations and chat logs
<http://esa-sen4cap.org/content/presentations>
 - Audio is coming soon
- Other trainings?
 - Methodology behind each processor?
 - More advanced training on system operation?



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- Webinars going on
 - June 9
 - July 7
- Online session on the forum in May (dates to come)
- New trainings can be planned
- New version released on **18 May 2020**
- **Your questions ???**

**Thank you for your attention
and your contribution**



sen4cap

common agricultural policy