TAT 2021

RUS Copernicus Cloud-Based Service

Trans-Atlantic Training 2021 (Thessaloniki, Greece)

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RUS Copernicus | 3 June 2021

RUS Service

- **R**esearch and **U**ser **S**upport for Sentinel core products

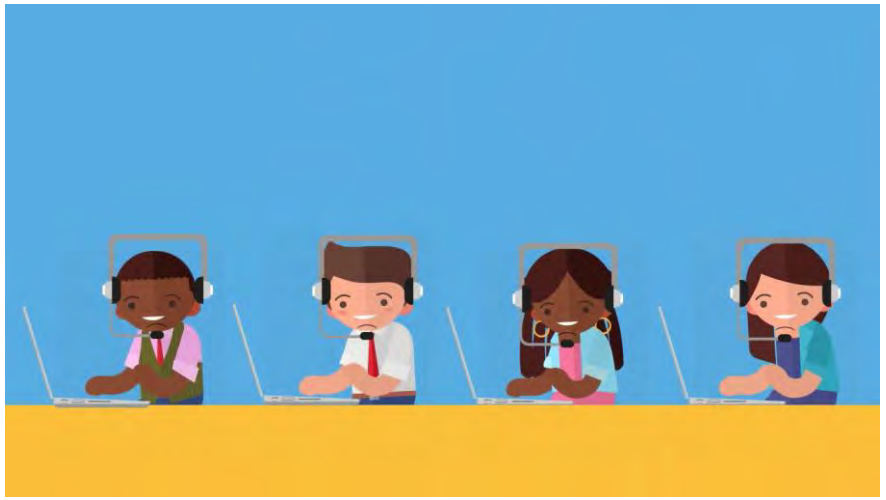
- Started in 2017
- Ending in December 2021
- Promote the uptake of Copernicus Sentinel data
- Support Research & Development activities

Consortium lead by CS-France
+ SERCO + Noveltis + Along-Track + CS-Romania

RUS Service

- **R**esearch and **U**ser **S**upport for Sentinel core products

- Free and open scalable platform
- Powerful computing environment – Virtual Machines
- Open source toolboxes pre-installed
- Specialized Remote Sensing helpdesk
- Training Activities



RUS Service

- Training Activities:
  - Webinars (monthly)
  - F2F Training & Remote Classrooms events (monthly)
  - Scientific and Technical Support to webinars replay
  - Support to external trainings, organization and operation
- Individual Users / R&D Projects (Support)
- Outreach Activities

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Training Activities

Webinars – 39 Topics, monthly since October 2017

LAND MONITORING (LAND-)
Crop mapping with Sentinel-2
Land monitoring with Sentinel-3
Urban Classification with Sentinel-1
Deforestation Monitoring with Sentinel-1
Deforestation Monitoring with Sentinel-2
Urban Heat Island with Sentinel-3
Rice Mapping with Sentinel-1 using SNAP GPT
Vegetation Monitoring for Agriculture with Sentinel-2

OCEAN – COASTAL MONITORING (OCEA-/COAS-)
Ship detection with Sentinel-1
Oil Spill Mapping with Sentinel-1
Ocean colour with Sentinel-3 OLCI
Coral reef monitoring with Sen2Coral
Altimetry using Sentinel-3 and the BRAT toolbox
Oceanography using Sentinel-3 and the BRAT toolbox
Nearshore Bathymetry Derivation with Sentinel-2

HYDROLOGY (HYDR-)
Water bodies mapping from space with Sentinel-1 and Sentinel-2
Freshwater Quality Monitoring using Sentinel-2

RISK MONITORING (HAZA-)
Flood mapping with Sentinel-1
Burned area mapping with Sentinel-2
Land Subsidence with Sentinel-1
Active Fire Detection with Sentinel-3 SLSTR
Earthquake Deformation using InSAR with Sentinel-1
Watching a Typhoon using Sentinel-1
Rapid Landslide Detection with Sentinel-1
Damage Assessment with Sentinel-1 and Sentinel-2
Data preparation for StaMPS PSI processing with SNAP
Volcano Monitoring with Sentinel-1
Volcano Monitoring with Sentinel-2

GEOLOGY – CRYOLOGY (GEOL-/CRYO-)
Lithological Classification with Sentinel-1 and Sentinel-2
Glacier velocity with Sentinel-1
Snow cover mapping with Sentinel-2
Sea Ice Classification with Sentinel-1

ATMOSPHERE (ATMO-)
Air quality monitoring with Sentinel-5P
Monitoring Pollution with Sentinel-5P
Volcano Emissions with Sentinel-5P

Python – R (PY-/R-)
Sentinel-1 Processing using Snappy
Sentinel-2 Data Processing using R

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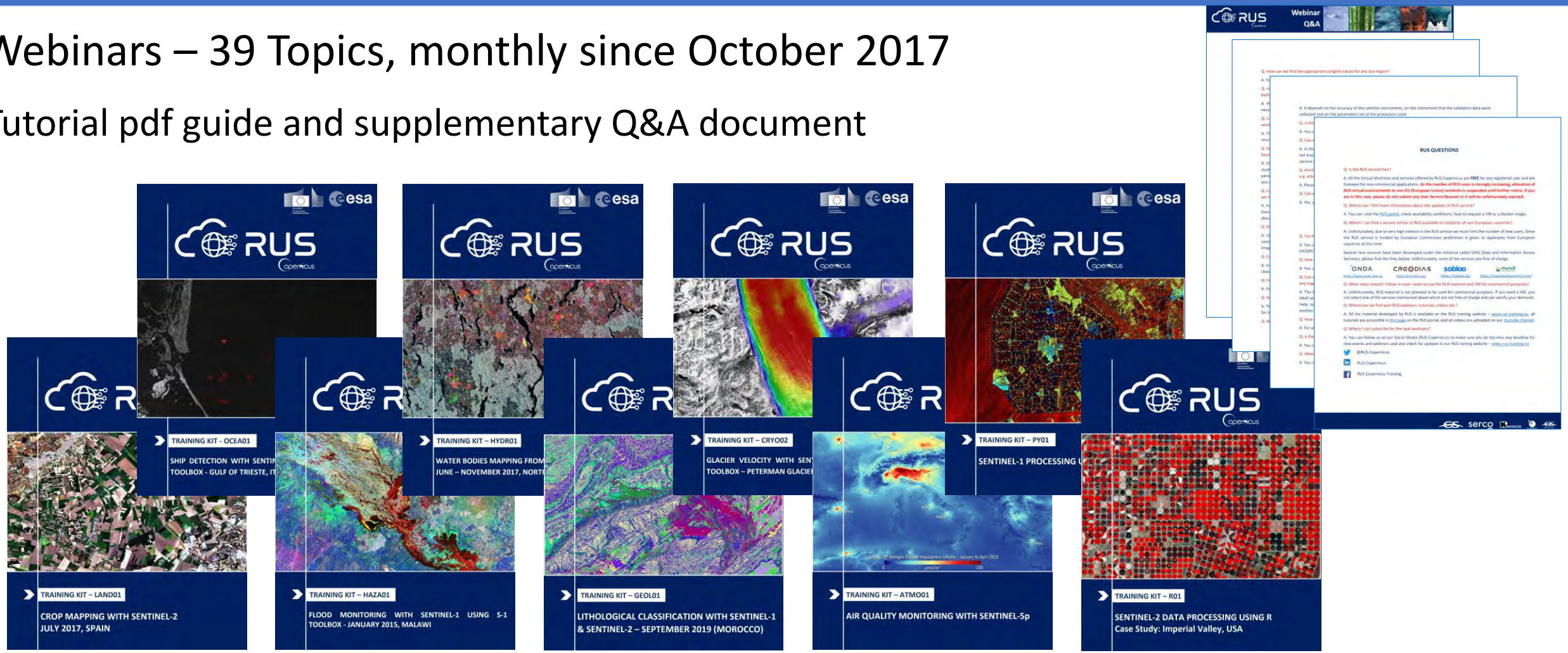
Training Activities

Webinars – 39 Topics, monthly since October 2017

Tutorial pdf guide and supplementary Q&A document



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RUS Service

- Training Activities: – (VMs available)

  - Webinars (monthly)
  - **F2F Training & Remote Classrooms events (monthly)**
  - Scientific and Technical Support to webinars replay
  - Support to external trainings, organization and operation

✓ VMs of 4 or 8 cores based on the training category
✓ ICT support provided during and after the session (if extended)
✓ VM extension for 1 month max

Training Activities

F2F Training & Remote Classrooms **~55** – (24 up to 02/2020)

- ✓InSAR application to Earthquakes
- ✓Flood monitoring with Sentinel-1 data
- ✓Ship detection with Sentinel-1 data
- ✓Sentinel data use for Land Cover and Forest Fires monitoring
- ✓Sentinel-1 InSAR for Subsidence monitoring
- ✓Sentinel data use for Forestry and Crop Mapping
- ✓Exploiting Copernicus satellite data for GIS and cartographic applications
- ✓Mapping Arctic lakes from space
- ✓SAR and optical data fusion
- ✓Radar Altimetry Tutorial: Concrete Marine and Inland Water Applications using Sentinels data
- ✓Sentinel data use for urban mapping and monitoring
- ✓Cloud computing with Sentinels
- ✓Introduction to SAR data and Application
- ✓Sentinel data processing and applications
- ✓Land Applications with Copernicus Data
- ✓Sentinel data and applications at Living Planet Symposium 2019
- ✓RUS at Living Planet Symposium 2019
- ✓Optical and SAR data fusion for Agriculture
- ✓Agricultural monitoring with Sentinel-1 and Sentinel-2 data
- ✓IV ESA EARSEL CNR School: Remote Sensing for Forest Fir
- ✓Mapping waterbodies from space with Sentinel-1 and Sentinel-2
- ✓RUS Copernicus training for the International Committee of the Red Cross (ICRC)
- ✓Use of EO for Geology & Land Subsidence with Sentinel-1: an InSAR demo with Open Tools using RUS service
- ✓Optical and SAR Copernicus data for Land applications

Training Activities

Around Europe – over 20 countries

Italy
Greece
Austria
Germany
Portugal
(Azores)
Croatia
Ireland
Spain
Cyprus
Belgium
Czech Republic
Poland
Malta
Switzerland
France
Estonia
Denmark
Finland
Bulgaria
Romania

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Training Activities

F2F Training & **Remote Classrooms** – (over 15 up to 5/2021)

- ✓Atmospheric applications using Sentinel-5P Data
- ✓Deforestation monitoring using Sentinel-1 data
- ✓Land Subsidence mapping using Sentinel-1
- ✓Copernicus on support of the SDGs: a practical example
- ✓Exploiting Sentinel-5P data to monitor air quality
- ✓RUS Copernicus at the APM - Remote Sensing of environment Workshop - POSTPONED
- ✓Comparison of Urban Mapping Methods using SAR
- ✓RUS Remote Training: Copernicus for Geological and Geomorphological applications
- ✓Comparison of Urban Mapping Methods using SAR - Second Edition
- ✓Exploiting Sentinel-5P data to monitor air quality using the Atmospheric toolbox
- ✓Ocean & land monitoring with Sentinel-3 data using the SNAP software
- ✓RUS Copernicus at the APM - Remote Sensing of environment Workshop
- ✓RUS Remote Training: Ship detection with Sentinel-1 using SNAP S-1 toolbox
- ✓RUS Copernicus at the 11th ESA Training Course in Earth Observation
- ✓RUS Remote Training: Land Subsidence with Sentinel-1 using SNAP

RUS Service

- Training Activities: – (VMs available)

  - Webinars (monthly)
  - F2F Training & Remote Classrooms events (monthly)
  - **Scientific and Technical Support to webinars replay**
  - Support to external trainings, organization and operation

✓ Monthly basis - pdf tutorial available for everyone
✓ Limited VMs for webinar replay / month, duration (2 weeks max)

RUS Service

- Training Activities: – (VMs available)

  - Webinars (monthly)
  - F2F Training & Remote Classrooms events (monthly)
  - Scientific and Technical Support to webinars replay
  - **Support to external trainings, organization and operation**

✓ Provide VMs to support the event (30 max)
✓ Provide remote ICT Support

RUS Service

- Training Activities:

  - Webinars (monthly)
  - F2F Training & Remote Classrooms events (monthly)
  - Scientific and Technical Support to webinars replay
  - Support to external trainings, organization and operation

https://www.docker.com/

- <u>Individual Users / R&D Projects (Support) – (VMs NOT available)</u>

✓ Access to **Docker container image** (containing the RUS virtual environment)
✓ Support for installing the selected RUS Tools on user's infrastructure

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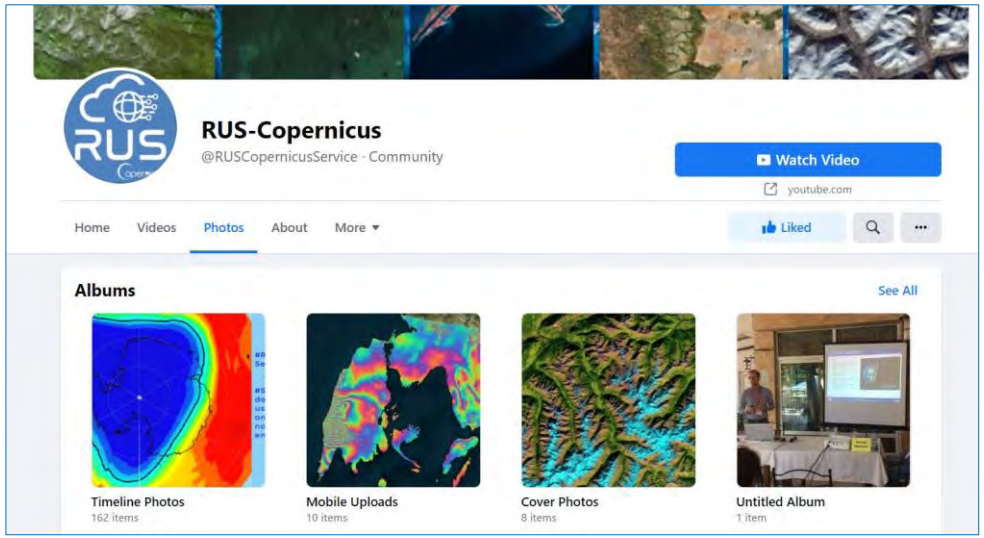
- Individual Users / R&D Projects (Support)

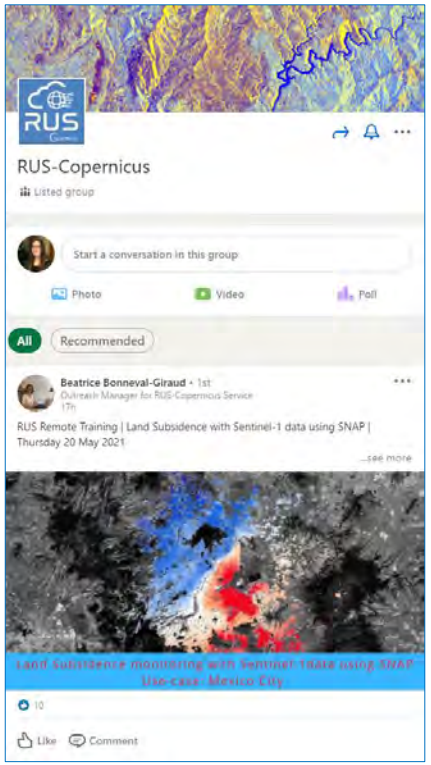
- Outreach Activities

Social media - Outreach Activities

Follow us on Facebook / LinkedIn / Twitter



@RUSCopernicusService
~ 1.000 followers
~ 200 posts



~ 600 members
~ 100 posts

~ 4.300 followers
~ 650 tweets

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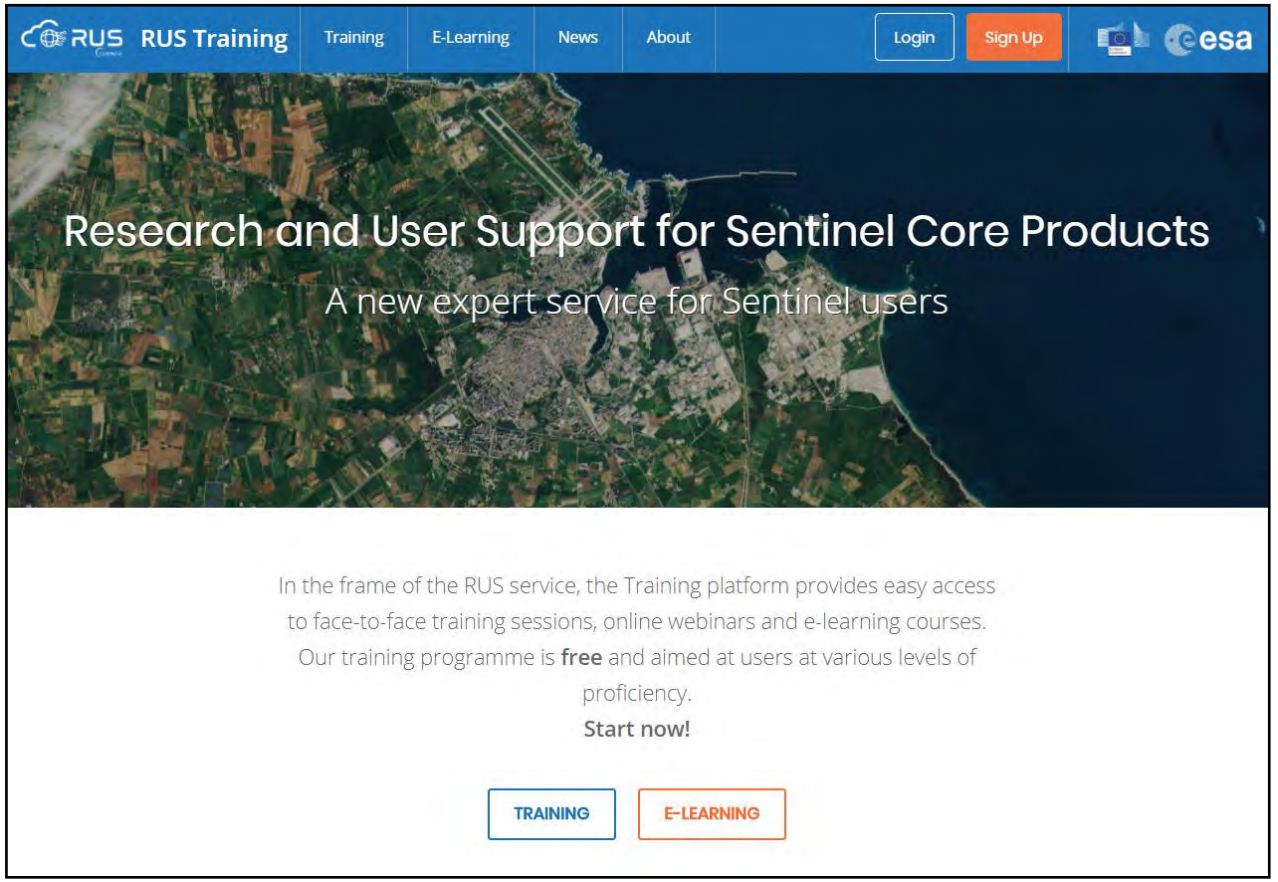
RUS achievements

Variety of participants of different background

- Webinars – over 4.650 Participants
- F2F events, events in conferences and Remote Classrooms – over 1.450 Participants
- **Total participants trained by RUS – Over 6.100**

- Universities, Research Institutes, Private Companies
- Students, Researchers, Professors, Trainers, Decision-makers

RUS Service – Portal & Training webpages



http://rus-copernicus.eu

https://rus-training.eu

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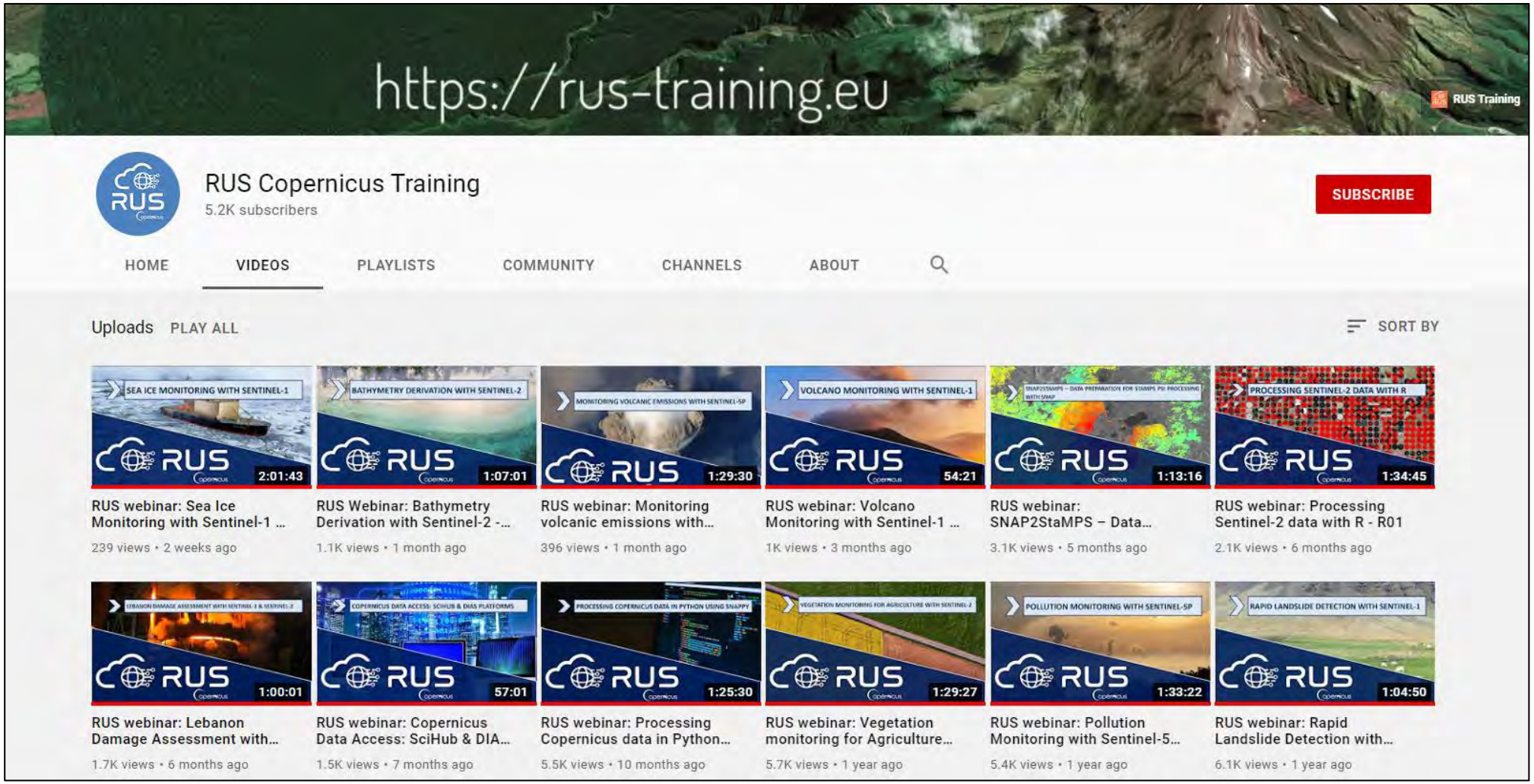
RUS Service – Youtube Channel



RUS Copernicus Training

~ 5.200 Subscribers

250.000 views

44 videos

4 RUS intro videos

39 webinars

1 demo session

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Contact us

Thank you for attending!

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