

➤ **TAT 2021**

RUS Copernicus Cloud-Based Service

Trans-Atlantic Training 2021 (Thessaloniki, Greece)

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RUS Copernicus | 3 June 2021



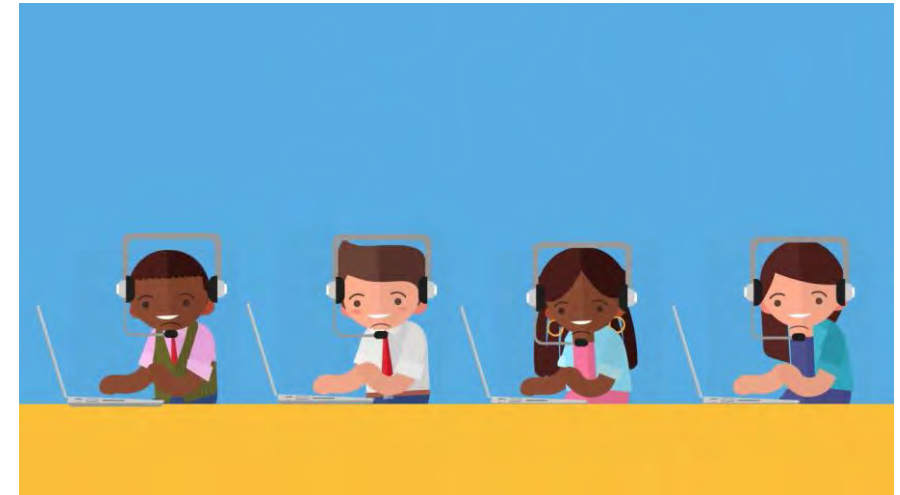
- **R**esearch and **U**ser **S**upport for Sentinel core products



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

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

- **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



- 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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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

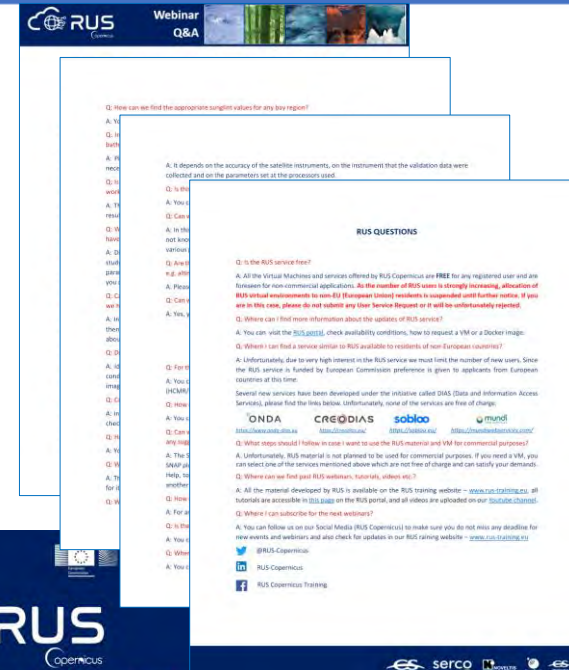
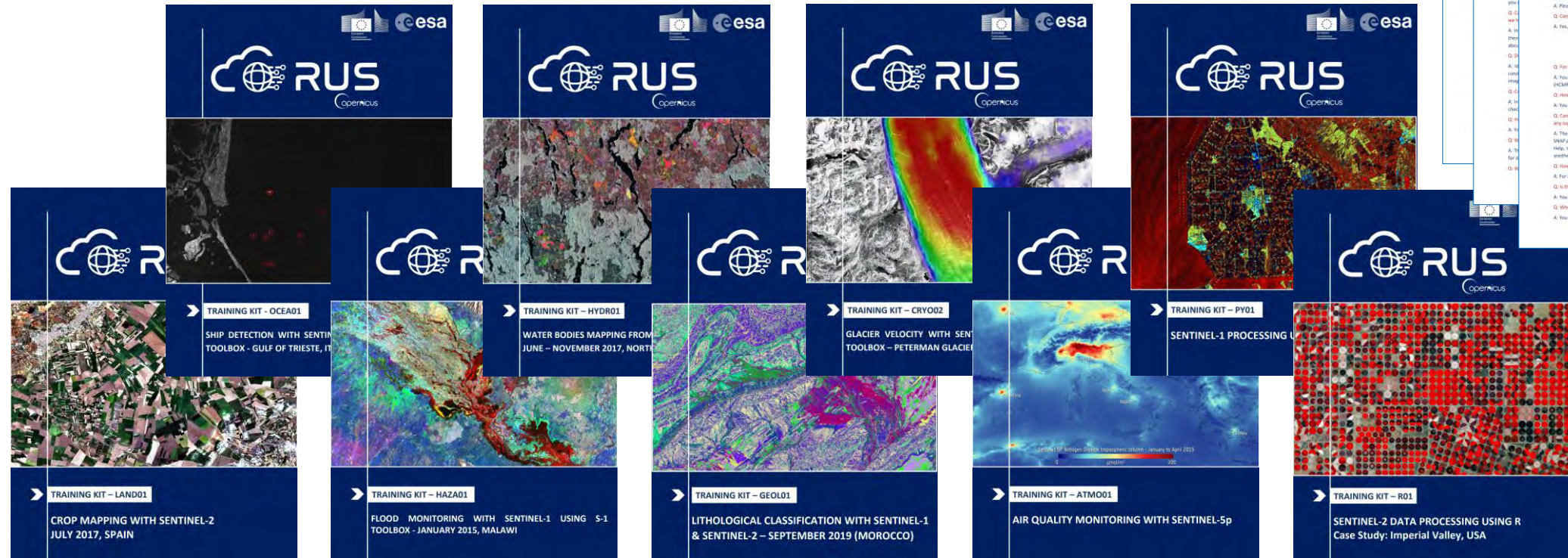
Python – R (PY-/R-)

- Sentinel-1 Processing using Snappy
- Sentinel-2 Data Processing using R

RUS Training Activities

Webinars – 39 Topics, monthly since October 2017

Tutorial pdf guide and supplementary Q&A document



- 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

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 Fire
- ✓ 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

Around Europe – over 20 countries

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



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

- 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)

- 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

- 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/>

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

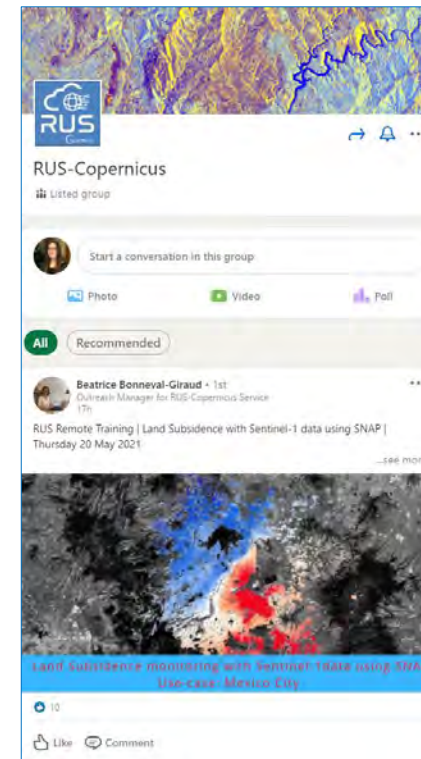
- ✓ Access to **Docker container image** (containing the RUS virtual environment)
- ✓ Support for installing the selected RUS Tools on user's infrastructure

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Follow us on Facebook / LinkedIn / Twitter



@RUSCopernicusService
~ 1.000 followers
~ 200 posts



~ 600 members
~ 100 posts



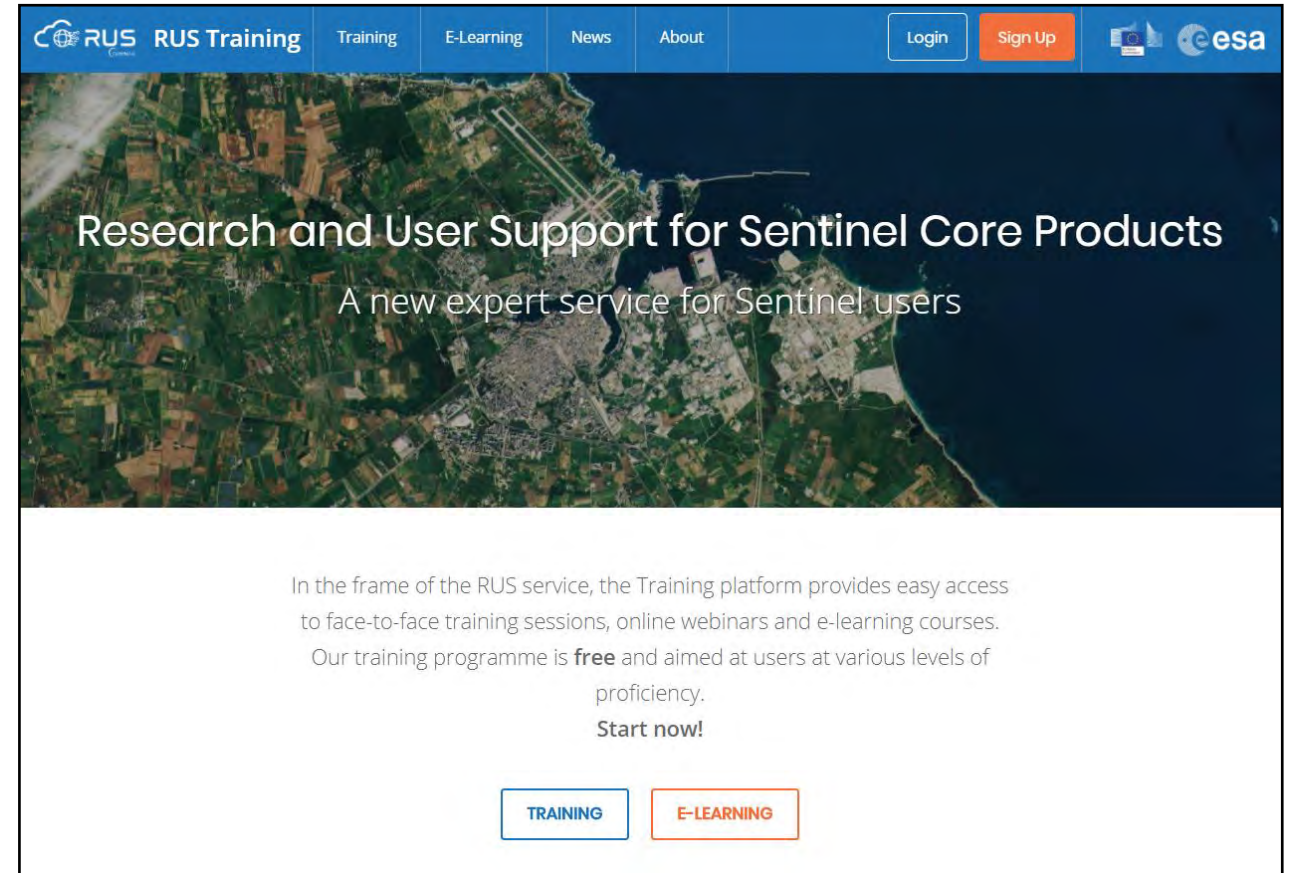
~ 4.300 followers
~ 650 tweets

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



The screenshot shows the RUS Service Portal. The header includes the RUS logo, 'Research and User Support', and navigation links like 'The RUS Service', 'The RUS Offer', 'The RUS Library', and 'The RUS Community'. A large satellite image is featured on the left. The right sidebar contains a search bar, 'News from RUS' with a list of recent events (e.g., 'RUS Training Session (online) - 5 Nov. 2020'), and 'The RUS agenda' with links to 'Conferences & Workshops' and 'Training sessions'. A welcome message states: 'Welcome to the Copernicus Research and User Support (RUS) Service portal! After a few weeks interruption, the RUS Service is fully operational again. Within this new phase, it will focus on training activities addressing multiple audiences through the free allocation of Virtual Machines including open source processing tools for a limited duration. It will however still offer support to individual projects by delivering -also for free- the RUS working environment as a Docker image a researcher can install on the infrastructure of his choice with the support of our experts.'



The screenshot shows the RUS Training Platform. The header includes the RUS logo, 'RUS Training', and navigation links like 'Training', 'E-Learning', 'News', and 'About'. There are 'Login' and 'Sign Up' buttons. The main content area features a large satellite image with the text: 'Research and User Support for Sentinel Core Products' and 'A new expert service for Sentinel users'. Below this, a paragraph states: 'In the frame of the RUS service, the Training platform provides easy access to face-to-face training sessions, online webinars and e-learning courses. Our training programme is **free** and aimed at users at various levels of proficiency. **Start now!**'. At the bottom, there are two buttons: 'TRAINING' and 'E-LEARNING'.

 <http://rus-copernicus.eu>

 <https://rus-training.eu>

RUS RUS Service — Youtube Channel

RUS Copernicus Training

~ 5.200 Subscribers

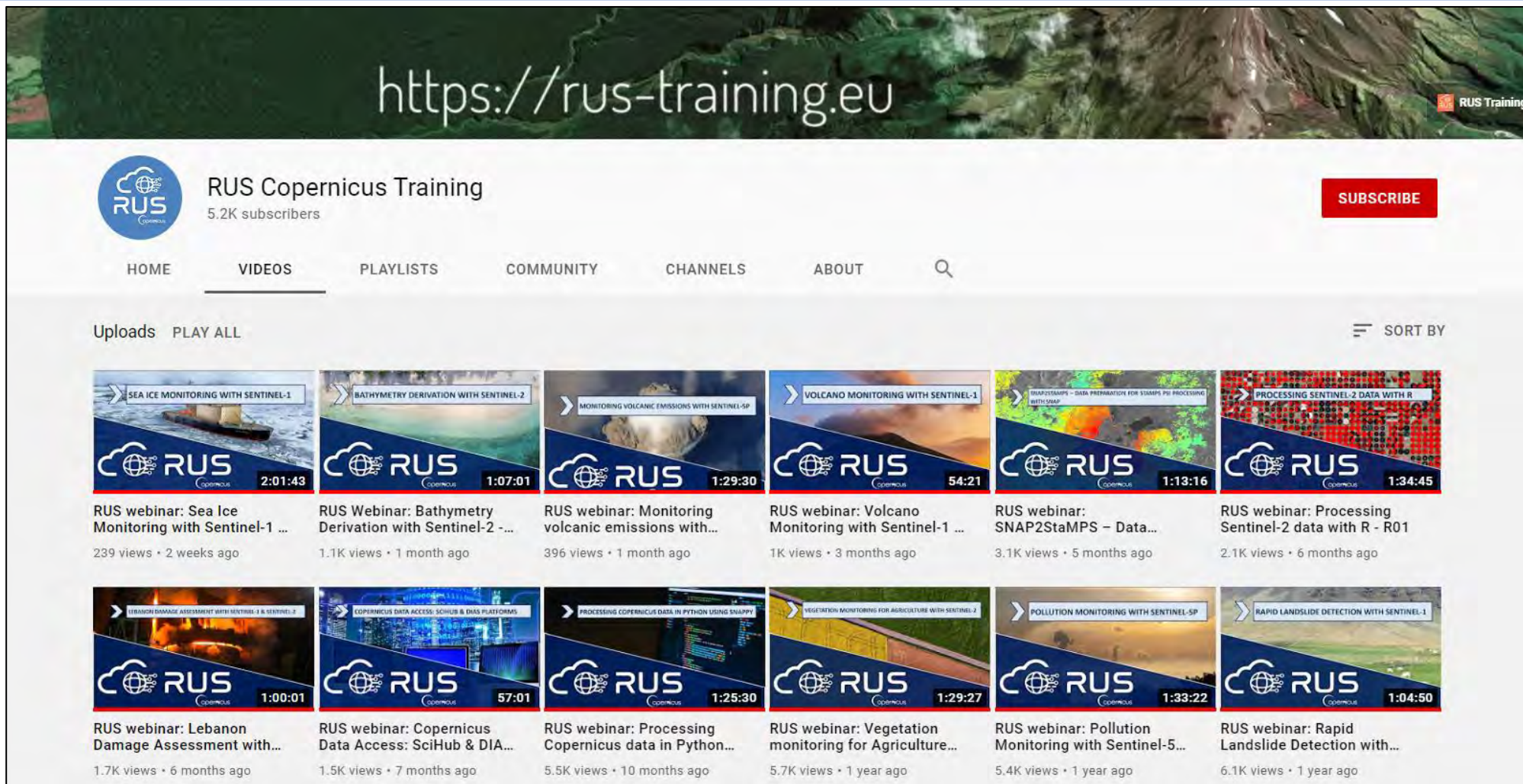
250.000 views

44 videos

4 RUS intro videos

39 webinars

1 demo session



The screenshot shows the YouTube channel page for 'RUS Copernicus Training'. The channel has 5.2K subscribers and a 'SUBSCRIBE' button. The video grid displays 12 videos, each with a thumbnail, title, and view count. The videos are organized into two rows of six. The first row includes videos on Sea Ice Monitoring, Bathymetry Derivation, Volcanic Emissions, Volcano Monitoring, SNAP2StaMPS data preparation, and Processing Sentinel-2 data with R. The second row includes Lebanon Damage Assessment, Copernicus Data Access, Processing Copernicus data in Python, Vegetation monitoring for Agriculture, Pollution Monitoring with Sentinel-5, and Rapid Landslide Detection with Sentinel-1.

Video Title	Views	Time Ago
RUS webinar: Sea Ice Monitoring with Sentinel-1 ...	239 views	2 weeks ago
RUS Webinar: Bathymetry Derivation with Sentinel-2 -...	1.1K views	1 month ago
RUS webinar: Monitoring volcanic emissions with...	396 views	1 month ago
RUS webinar: Volcano Monitoring with Sentinel-1 ...	1K views	3 months ago
RUS webinar: SNAP2StaMPS – Data...	3.1K views	5 months ago
RUS webinar: Processing Sentinel-2 data with R - R01	2.1K views	6 months ago
RUS webinar: Lebanon Damage Assessment with...	1.7K views	6 months ago
RUS webinar: Copernicus Data Access: SciHub & DIA...	1.5K views	7 months ago
RUS webinar: Processing Copernicus data in Python...	5.5K views	10 months ago
RUS webinar: Vegetation monitoring for Agriculture...	5.7K views	1 year ago
RUS webinar: Pollution Monitoring with Sentinel-5...	5.4K views	1 year ago
RUS webinar: Rapid Landslide Detection with...	6.1K views	1 year ago

Thank you for attending!

 rus-training.eu

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