

Educational Initiatives in Earth Observation

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The 59th Virtual UNISEC-Global Meeting Timetable,

16 August 2025

Theme: New Space Industry and Academia activities in Bulgaria

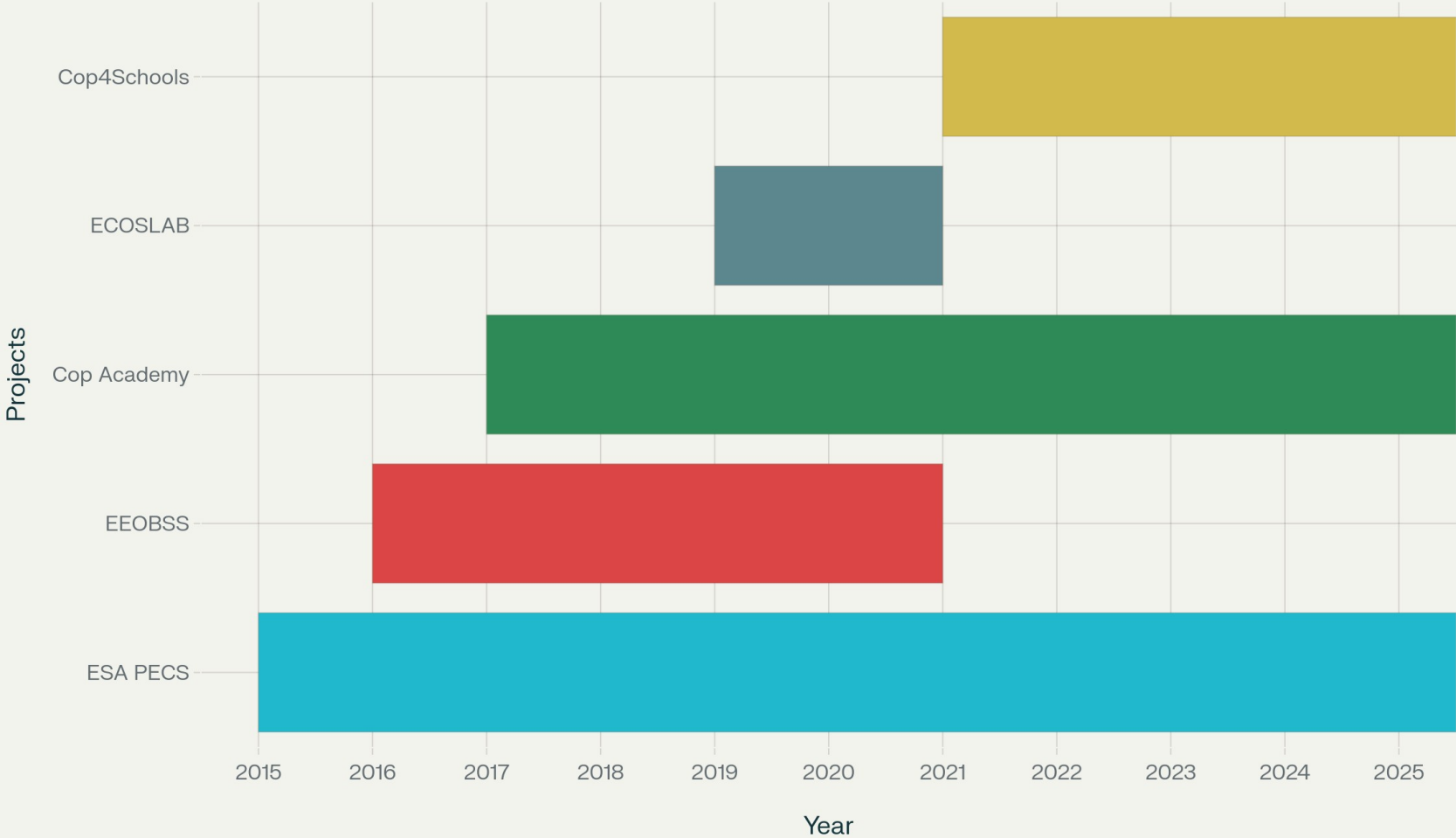


Major Educational Initiatives Covered:

1. EEOBSS Project (2016-2020) - The pioneer ESA-PECS initiative that developed comprehensive Earth observation curriculum for Bulgarian secondary schools, training over 150 students across 5 summer schools and engaging 30+ teachers.
2. ECOSLAB Project (2019-2020) - A national initiative under the program “Education with Science” of Ministry of Education and Science of Bulgaria. It focuses on natural disasters and ecological catastrophes, targeting students aged 13-18 with hands-on remote sensing education.
3. Copernicus Academy & Relays (2017-ongoing) - Bulgaria's participation in European networks, with SRTI-BAS as a key Copernicus Academy member alongside Sofia University.
4. Copernicus4Schools (2021-2025) - The latest international collaboration involving 11 European countries, targeting 4,000+ students aged 12-16 with disaster management education.

SRTI-BAS Education Timeline

■ ESA PECS ■ EEOBSS ■ Cop Academy ■ ECOSLAB ■ Cop4Schools



EEOBSS Highlights

- Timeline: 2016–2020
- Summer schools across Bulgaria
- MOODLE-based digital resources

This is the Moodle of EEOBSS project. (English only)

EEOBSS Moodle

NAVIGATION

- Dashboard
- Site home
- Site pages
- My courses
- Module 1. Дистанционни изследвания
 - Участие
 - Задания
 - Курсове
 - Какви представят дистанционните изследвания?
 - Глава 1. Основни понятия
 - Глава 2. Слънце
 - Глава 3. Развиваема способност
 - Глава 4. Безплатна интерпретация на изображенията
 - Глава 5. Обработка на изображения
 - Глава 6. Класификация на изображения
 - Тема 1
 - Тема 2
 - Тема 3
 - Тема 4

ADMINISTRATION

- Front page settings
- Turn editing on
- Site settings
- Users
- Files
- Reports

Available courses

Модул 1. Въведение в Дистанционните изследвания

Учител: Светлана Галева
Учител: Радко Милев

Дистанционните изследвания се извършват, за да се получи информация за обектите. Данните се събират с помощта на прибор, след което се анализират. Приборът не е винаги в пряк контакт с обекта. Използването на прибори е различно: "на разстояние" от повърхността на Земята (спътници, космически апарати и т.н.) или на твърдите тела (например, космически апарати и спътници). На тях се извършват различни изследвания и изследване от космоса на Земята, земната повърхност, океаните, атмосферата и космическото пространство (ESA Education).

Този учебен модул не започва с основните елементи на дистанционните изследвания:

- Основни понятия: електромагнитен спектър, електромагнитно излъчване и свойства на електромагнитното излъчване
- Слънчевите системи с различни данни и орбити, изследване от протекло до настояща ситуация за наблюдение на Земята
- Географски, спътников, радиометричен и космически данни
- Безплатна интерпретация на спътниковите изображения
- Методи за обработка и подобряване на качеството на изображенията
- Методи за анализ, интерпретация, класификация и интерпретация на изображенията

ABOUT EVENTS DOCUMENTS MOODLE CONTACTS EEOBSS

ABOUT

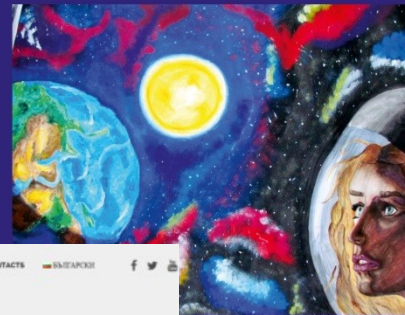
23 Aug 2016 About

EEOBSS is an educational project under the ESA-PECS program for Bulgaria. The views expressed on this website do not in any way reflect the official position of the European Space Agency.

EEOBSS : Education in Earth Observation for Bulgarian Secondary Schools
Образование по наблюдение на Земята за българските средни училища

НАБЛЮДЕНИЕ НА ЗЕМЯТА ОТ КОСМОСА

Учебно помагало за самостоятелна подготовка
в извънкласни дейности по природни науки



АКАДЕМИЯ НА НАУКИТЕ

ФИЗИЧЕСКИ ИЗСЛЕДВАНИЯ И ТЕХНОЛОГИИ



ESA AO/1-8268/15/NL/NDa
ESA PECS contract No. 4000117592/16/NL/NDa: EEOBSS:
Education in Earth observation for Bulgarian secondary schools

Deliverable TN1

Literature review and compliance check

Earth Observation Education for the secondary schools in Bulgaria and abroad.
Compliance of EO education with national education standards and legislation

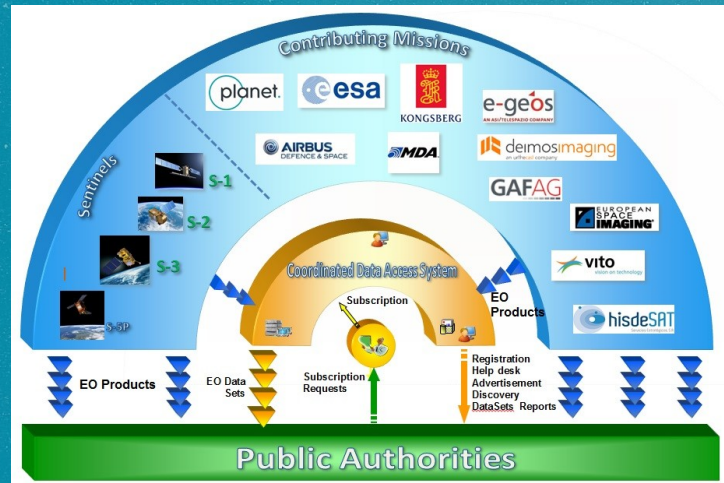
Annotation: This document provides an overview of worldwide web and e-Learning resources for Earth Observation education for secondary schools. The main EO education initiatives supported by international, EU and national organizations, outreach activities, citizen scientists projects and free and open source software tools are briefly described. The last part of the document develops on the EO education in Bulgarian secondary schools as well as on the Bulgarian legislative basis which supports it.

April 2017

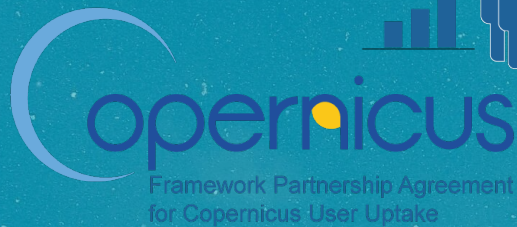


E#COSLAB Highlights

- Wildfire monitoring with Sentinel-2A
- Satellite component diagrams
- NASA-style educator training



Satellite image showing a large wildfire and smoke plumes in a forested area near Batemans Bay on December 31, 2019, captured by Sentinel-2A.



Copernicus4schools Training course:
<https://copernicus4schools.readthedocs.io/en/latest/>

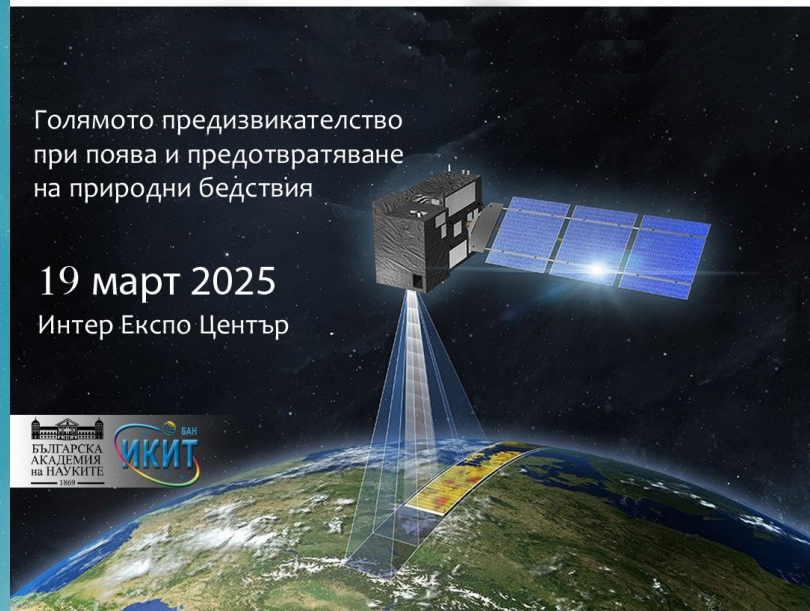
Challenge – 19.03.2025



FPCUP Action:
Copernicus4Schools
#The great Disaster Challenge

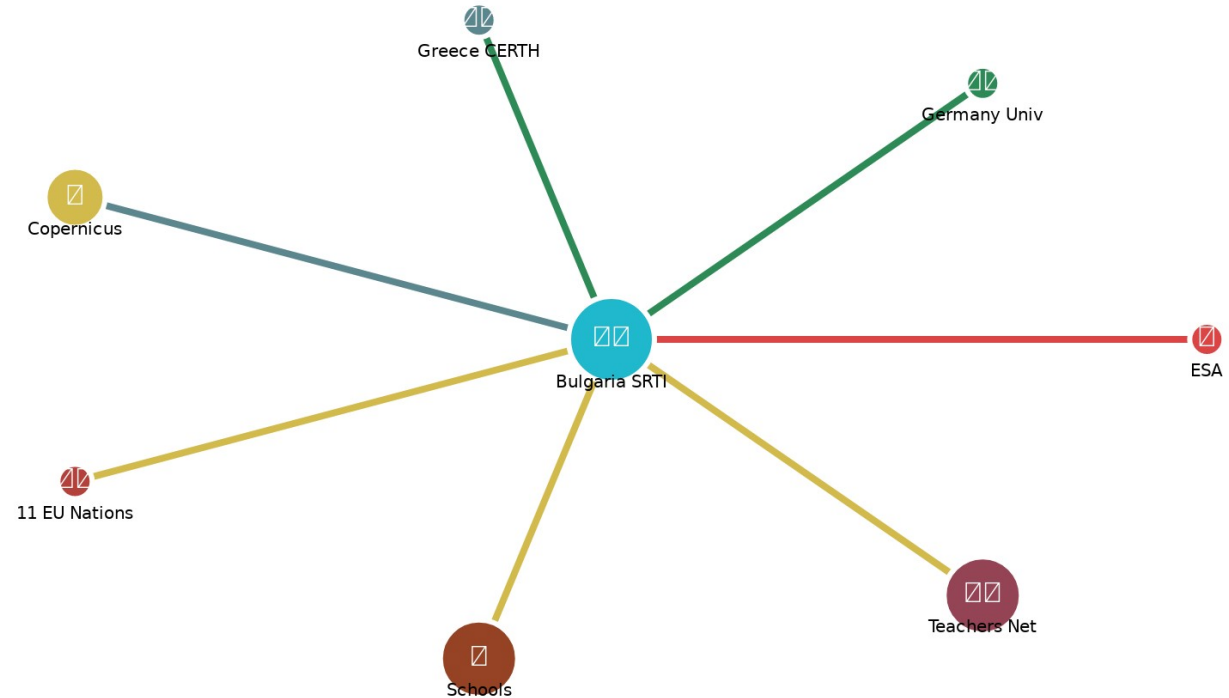
Голямото предизвикателство
при поява и предотвратяване
на природни бедствия

19 март 2025
Интер Експо Център



International Collaboration

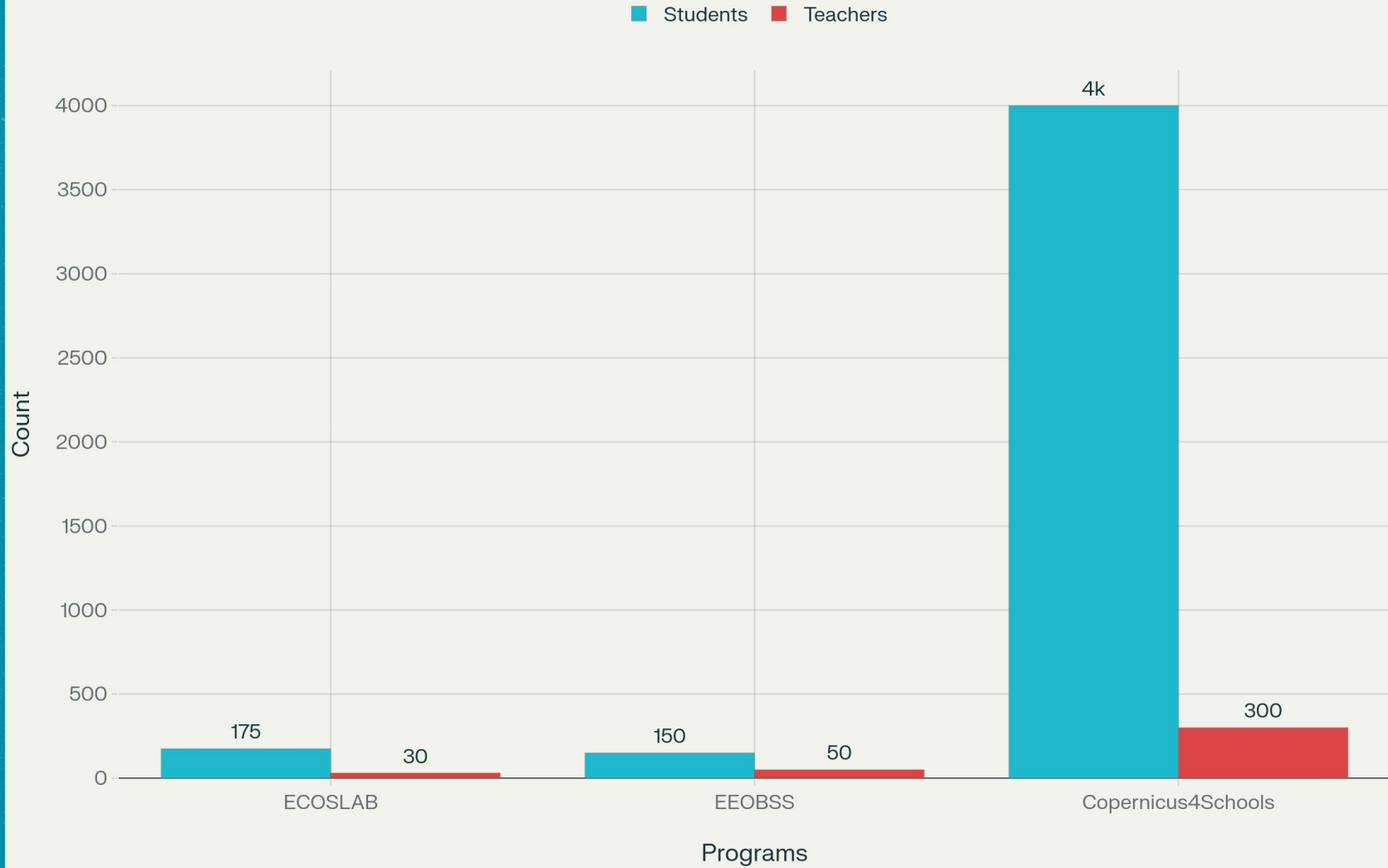
— Funding — Research — EU Program — Education



• ESA, Copernicus, European universities

• Joint curriculum and shared platforms

Bulgarian Space Ed Programs Overview



Educational Methodology

- Structured progression:
- basic → applied → real-world
- Inquiry-based, project-driven
- Multimedia and data integration



Design Principles and Technical Recommendations

- One concept per slide
- Progressive disclosure
- Interactive elements
- Consistent Bulgarian space branding
- High-res satellite imagery
- Live demos with QGIS & LEOWorks
- Static backups
- Layered technical explanations

Closing & Call to Action



- **Message:** Bulgaria is actively shaping the future of EO training for schools in EU.
- **Call to Action:** Let's collaborate to expand Earth observation science through training and education activities for the new generation of scientists!
- Contact: lachezarhf@space.bas.bg