



Training course endorsed by the  
European Federation of Geologists

The course is endorsed by European Federation of Geologists



# RawMatCop Academy

Advanced Course on Remote Sensing for the  
RawMaterials Sector

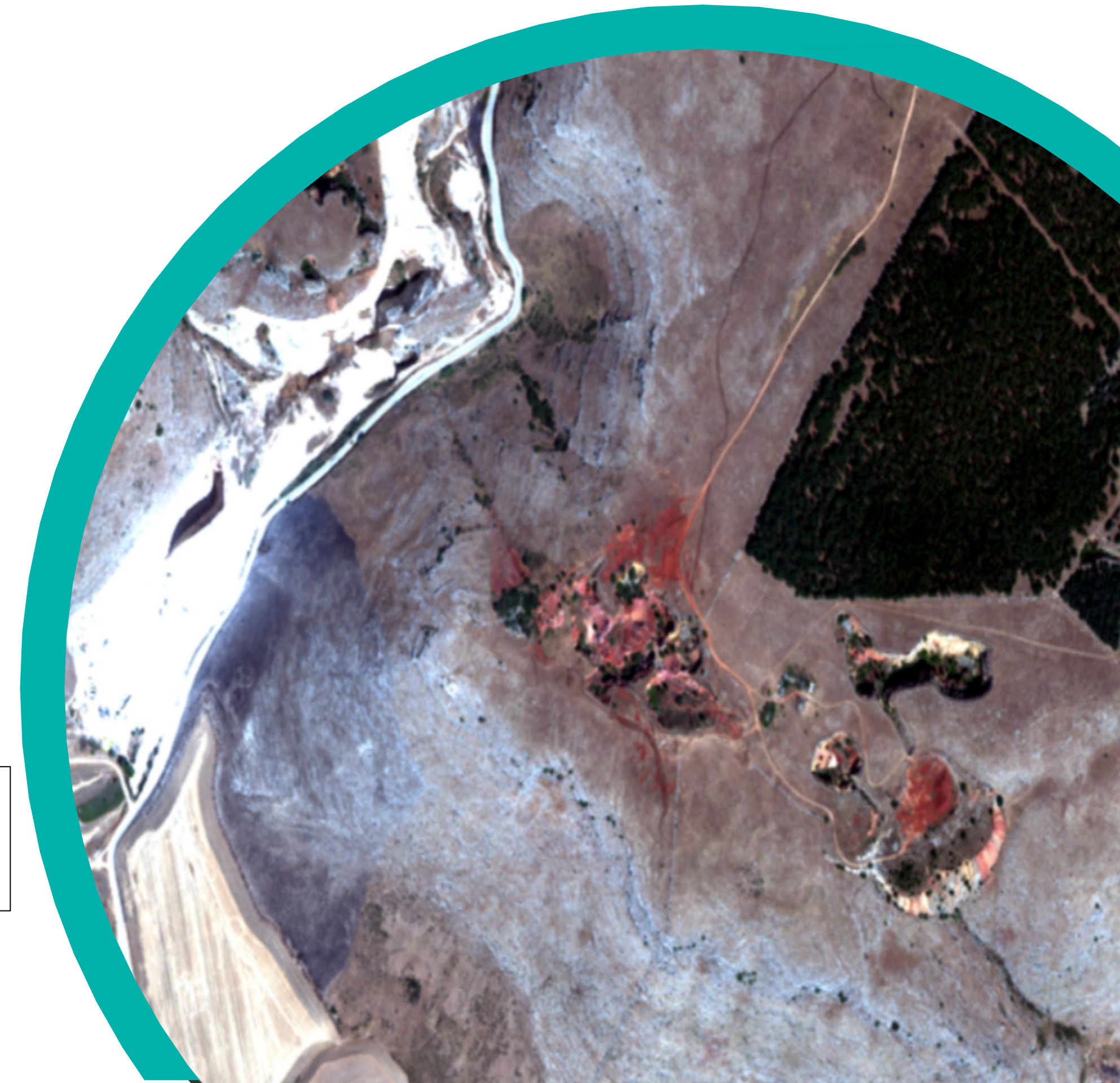
(9-11 September 2024, Liège-Belgium)

<https://rawmatcop.eitrawmaterials.eu/courses.html#advanced-course-2024>

This course is at the same venue of the conference Geologica Belgica from 11 to 13 September 2024. [www.geologicabelgica2024.uliege.be](http://www.geologicabelgica2024.uliege.be)  
Don't miss the opportunity to engage in both!



Co-funded by the  
European Union





# Course Details

Earth observation technologies provide great innovation potential in the raw materials sector. RawMatCop Alliance offers an advanced course with hands-on learning to demonstrate how Copernicus can provide cost-effective and safe solutions while complying with environmental regulations. Advanced approaches highlighting scalability, accuracy assessment, and time-series of imagery are offered in the course and provide valuable support to informed decision-making.

## Advanced Course Topics

- . Efficient handling of time-series and large datasets
- . Scalable analysis of satellite data for raw materials
- . Best practices of data integration
- . Leveraging Copernicus data and open tools to revolutionize the sector

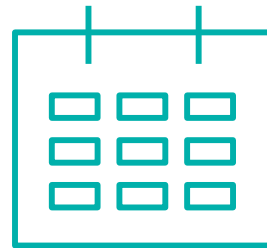
## Case Studies & Exercises

- . Mineral exploration - opportunities & challenges
- . Acid mine drainage - temporal analysis
- . Open pit mining - monitoring activities/materials
- . Ground deformation - mapping using InSAR temporal series

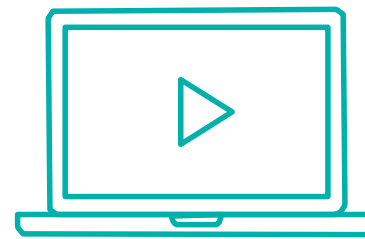


# Course Details

Entrepreneurs and industry professionals from the exploration, mining and processing sectors who are looking for innovative techniques to monitor and manage raw materials in their organization will benefit from the course. We also welcome geoscientists, development and environmental experts, researchers, master and doctoral students working in the raw materials sector as well as remote sensing practitioners interested in learning raw materials applications.



**3-DAY COURSE**



**IN-PERSON**



## EXPECTED BACKGROUND

- BASIC CODING EXPERIENCE
- BASICS OF REMOTE SENSING



# DAY 1

## Reviewing remote sensing concepts

### Course introduction

- Working with codes and notebooks
- Image visualization
- Introducing data integration

### Acid mine drainage

- Creating a spectral library
- Detecting acid-mine drainage
- Time-series analysis of acid-mine drainage

# DAY 2

## Mineral exploration

- Classification using self-organizing maps
- Geological feature extraction
- Mineral prospective mapping and targeting

## Mine Monitoring:

- SAR imaging
- Omnibus Change Detection with Sentinel 1 GRD
- Communication of Results by Interactive Maps
- Time-series analysis and Ground Deformation mapping using EGMS

# DAY 3

## Keynote Speaker

### Project Initiation

- Project implementation
- Project presentation

### Course finalization





# Meet our Experts



## Prof. Thorkild M. Rasmussen

Exploration Geophysics at Luleå University of Technology,  
Expert in Mineral Exploration, Airborne Geophysical  
and Satellite Data



## Dr. Sara Kasmaee

Mining Engineer and Researcher of Georesource  
at University of Bologna



## Dr. Louis Andreani

Independent Consultant in Remote Sensing



## Dr. Christian Köhler

Lecturer and researcher at Institute of Mine  
Surveying and Geodesy at TU Bergakademie  
Freiberg



## Dr. Elsy Ibrahim

RawMatCop Researcher at University of Liège  
and Independent Consultant in the Earth Observation sector  
(NOVOJY SPRL)



## Dr. Ignacio Marzán

Researcher at IGME-CSIC (Spanish National  
Research Council)







NOVOJY



Training course endorsed by the  
European Federation of Geologists



Co-funded by the  
European Union





**There is a universe of untapped data that can transform your raw materials career, organization, and help build a greener, more resilient Europe!**

**Enroll Here**

For more information, please contact [rawmatcop@eitrawmaterials.eu](mailto:rawmatcop@eitrawmaterials.eu)

Stay updated with technical details here: <https://site.unibo.it/rawmatcop-alliance/en>