



CASSINI

Hackathons & Mentoring

Participant Playbook

Space for the Financial World
4-6 November 2022



Implemented by

VERHAERT

MASTERS IN
INNOVATION



space-tec
PARTNERS



The participant playbook is intended to guide you through the
most important information about the
4th CASSINI Hackathon & Mentoring.

Inside you will find information about the **tools, platforms, and communication channels** you need to make the most of the weekend.

We can't wait to see how you use EU space technologies
to shape the finances of tomorrow!



What you will find in this playbook



1. Core information

- Overview of the 4th CASSINI Hackathon
- The theme and challenges
- EU Space programme
- Tools & resources
- Accessing help & support

2. The Hackathon

- How to get involved
- The 10 local organisers
- Accessing the data cube with Sobloo
- The Big Ideas Campaign
- The hackathon agenda & rules
- Overview of the hackathon platforms
- The demo day & awards ceremony

3. Mentoring programme

- Introduction to the programme
- How it will work
- How to make the most of it





4th CASSINI HACKATHON

SPACE FOR THE FINANCIAL WORLD



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The 4th CASSINI Hackathon & Mentoring | 4-6 November

1 Hackathon

10 Locations around Europe

EU Space

Hybrid

Local

European

Global Themes

► Space for the financial world

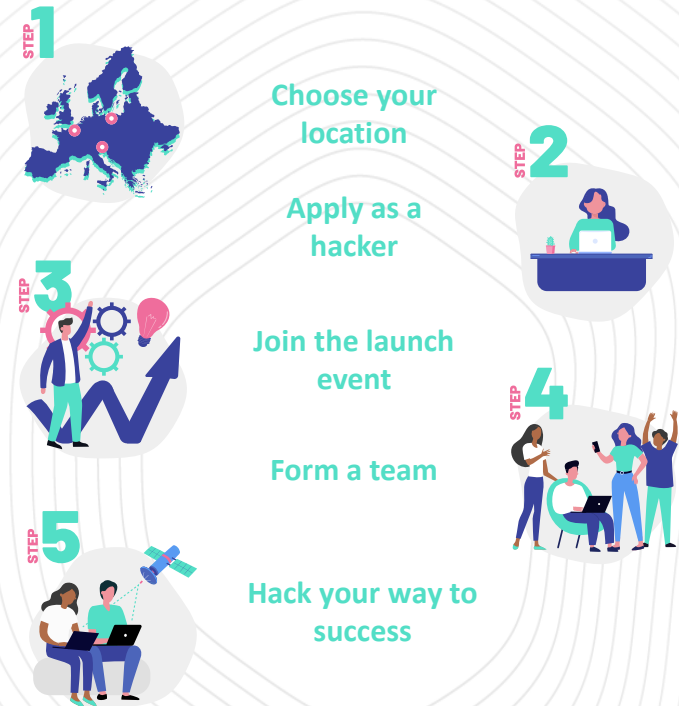
You?

The acceleration in digitisation and digital engagement in the financial sector is driving a hunger for modern data and analytics tools together with new technologies such as artificial intelligence and blockchain. The 4th CASSINI Hackathon will focus on **how European space technologies feature in the future of finance, insurance and investments**. We're looking for innovative minds to develop sustainable solutions that advance Europe's finance sector.

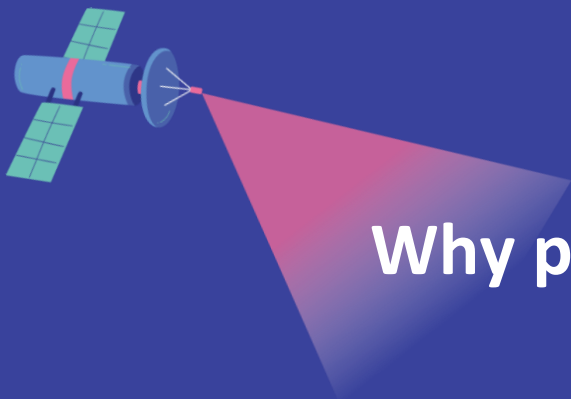
The hackathon is open to anyone enthusiastic about entrepreneurship, finance and EU space technologies. Embark on the challenge of your choice using one or a combination of the following tools:

- 1) geospatial information from Copernicus Earth observation data and its services
- 2) positioning technologies from Galileo & EGNOS
- 3) Emerging technologies (e.g. machine learning, virtual reality, blockchain)

Applying is easy!



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Why participate in the hackathon?

{ Code the future }

Draw on your unique skills to create solutions that solve critical problems which are affecting our future.

{ Put your skills to the test }

Roll up your sleeves and compete against fellow coders, creatives and business experts for your chance to win!

{ Expand your network }

Develop your understanding of Copernicus, Galileo & EGNOS with our tailor-made training and support, and learn to design for the future.

{ Discover EU Space }

Meet fellow hackers and experts from inside and outside the European space ecosystem. Gain experience networking and grow your connections.

{ Access expert knowledge }

Engage with our technical and business experts who will be on-hand throughout the event to help, advise and support you in reaching your goals.

{ Take home the prize }

Don't miss your chance to win prizes on a local and European level. Cash and mentoring opportunities are just two of the many prizes up for grabs!



Challenge #1: Enabling green and sustainable investment

In today's world, investors increasingly apply an ESG framework (environmental, social, and governance criteria) to identify material risks and growth opportunities. By filtering their results using an SRI approach (socially responsible investing), investors can further narrow down their options to those companies engaged in ethically sound practices. Companies also have the opportunity to work toward carbon neutrality and offsetting their carbon footprint. In relation to our natural world, this could translate to protecting and investing in Earth's carbon sinks (oceans, forests and soils) and carbon emissions trading.

This challenge calls on tomorrow's innovators to **develop products, devices, or services** to enable green, sustainable and impactful investments. **Be sure to leverage European space data, information and signals** from Copernicus and Galileo to bring your concept to life. We encourage participants to explore the areas of:

- Social or environmental impact investing
- ESG and SRI focused portfolio development
- Sustainable business operations
- Carbon offset trading



Challenge #2: Innovating financial tools and technologies

As the threat of natural disasters rise, many companies are finding their competitive advantage through improved data tools. Satellite-based EO data and GNSS timing and positioning information are valuable to this sector. Satellite imagery, for instance – used in **parametric (or index-based) insurance solutions** – can help protect vulnerable populations and natural ecosystems against natural disasters. In addition, clients and insurers can benefit from refined risk modelling and new index products. Lastly, financial institutions can rely on secure digital tools that leverage timing and synchronisation enabled by GNSS technologies.

This challenge calls on tomorrow's innovators to **develop products, devices, or services** that create new or improved forms of insurance and financial tools for businesses and consumers. **Be sure to leverage European space data, information and signals** from Copernicus and Galileo to bring your concept to life. We encourage participants to explore the areas of:

- Traceability for banking and financial institutions
- Claims and damage assessment
- Risk modelling and risk assessment
- Novel and innovative insurance products
- Index production
- Financial software or mobile applications

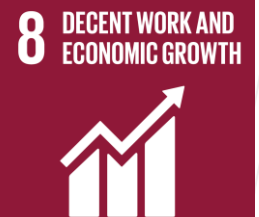
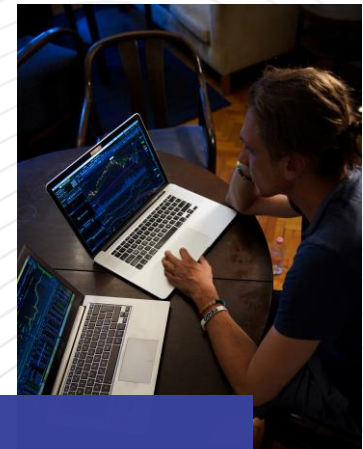


Challenge #3: Advancing global financial intelligence

Many factors contribute to the volatility of stock markets and the financial risk of individual companies. Those that are commodity-based and heavily influenced by mother nature, supply and demand, and availability of storage and transportation are most susceptible. Luckily, we can monitor and predict economic performance of consumer-based industries by analysing the physical changes of assets on the ground. By harnessing the power of **EU space technologies, investors, insurers, consumers, and governments can make data-driven decisions that reduce risk and exposure** to uncertainties and enable the development of sound financial strategies.

This challenge calls on tomorrow's innovators to **develop products, devices, or services** to advance global market intelligence. **Be sure to leverage European space data, information and signals** from Copernicus and Galileo to advance the global financial and market intelligence. We encourage participants to explore the areas of:

- Commodities trading
- Stock market intelligence
- Financial risk reduction



Connecting you with the EU Space programme

The EU Space programme consists of several flagship programmes including Europe's Earth observation, satellite navigation, secure communications and space situational awareness programmes. The 4th CASSINI Hackathon challenges participants to use data and signals from Copernicus, Galileo & EGNOS.



Copernicus is the European Union's Earth observation programme, looking at our planet and its environment to benefit all European citizens. It offers information services that draw from satellite Earth Observation and in-situ (non-space) data.

copernicus.eu



Galileo is Europe's Global Navigation Satellite System (GNSS), providing improved positioning and timing information with significant positive implications for many European services and users.

euspa.europa.eu/european-space/galileo/What-Galileo



The European Geostationary Navigation Overlay Service (EGNOS) is Europe's regional satellite-based augmentation system (SBAS) that is used to improve the performance of global navigation satellite systems (GNSSs).

euspa.europa.eu/european-space/egn/what-egn



The EU Space programme continued

The CASSINI Hackathons & Mentoring will look to engage participants with secure communications and space situational awareness in future editions.

GOVSATCOM

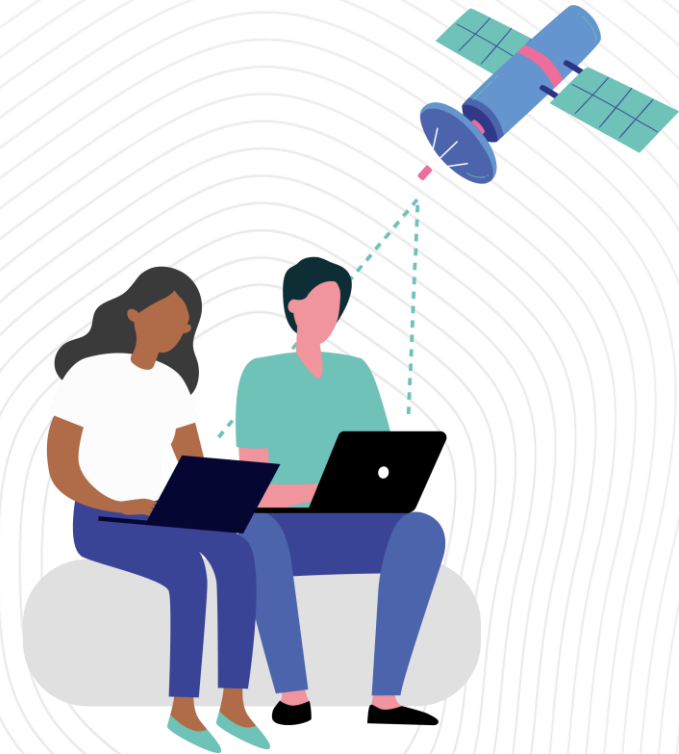
The European Union Governmental Satellite Communications (GOVSATCOM) programme provides secure and cost-efficient communications capabilities to security and safety critical missions.

euspa.europa.eu/european-space/govsatcom



The Space Situational Awareness initiative will provide Europe and its citizens with complete and accurate information on objects orbiting Earth, on the space environment and on threats coming from space.

eusst.eu



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Spotlight on Copernicus data & information

Never worked with Copernicus Earth observation data & information? No problem!

We have put together some important resources to get you started:

- [What is the Copernicus programme?](#)
- [Overview of the programme](#)
- [Introducing the Copernicus Sentinel missions](#)
- [The Copernicus services](#)



Spotlight on Galileo & EGNOS

Just getting started using satellite positioning technologies? We have collected some important resources for you to get started:

- [What is Galileo?](#)
- [EGNOS and Galileo: Programme Reference Documents](#)
- [GNSS raw measurements white paper](#)
- [Database of GNSS raw measurements](#)
- [Glossary for GPS test](#)
- [GNSS market report](#)
- [Galileo-enabled devices](#)



Spotlight on Sobloo

Haven't used Sobloo yet to access Copernicus data? Take a tour of the platform and get familiar with it before the hackathon weekend!

Platform tour:

- [Introduction to the Sobloo platform](#)

Here you can access additional information about Sobloo:

- [Sobloo Documentation](#)
- [ExtenSO API Search Engine](#)



All the tools you need to succeed!

As participants you have access to invaluable tools, training, and support to help you with your hacking. We provide everything you need, so you can give everything you got!



Data access

We want to minimise the time you need to spend processing data! That's why we're creating a dedicated data cube for each hackathon. The data cube contains pre-processed Copernicus data & information for a specific geographical region and time period with a focus on the hackathon theme at hand. Find the data cube on the Sobloo platform supporting that edition.

[Go to Sobloo](#)

Cloud infrastructure

Access virtual storage and computational resources for the duration of the hackathon. The Sobloo platform supporting each hackathon will enable you to discover and manipulate Copernicus data and information. You will also have all the processing power and storage you need to hack your way to success.



Some of our other tools...



Code repository

Still missing crucial data? We've got you! You will have access to our code repository for space-data sources. Hackers are invited to share their code with the CASSINI Hackathon community as open source on Github.

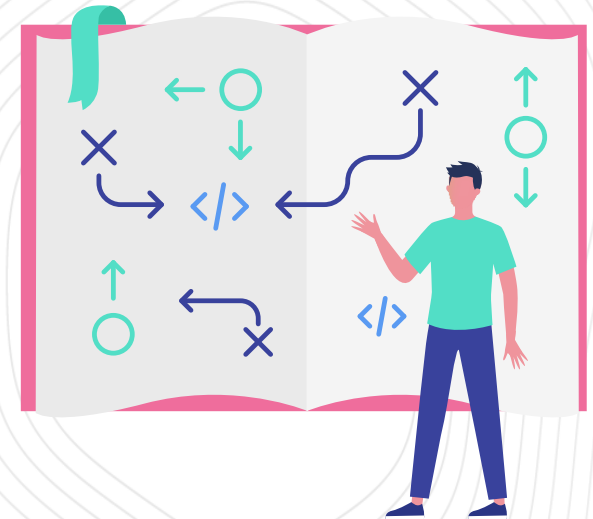
github.com

Playbook

New to hackathons? No problem. We've prepared two playbooks that will allow you to make the most of your first hackathon experience. Access helpful tips on how to face challenges, where to go if you need support, and what tools you'll be required to use throughout the event in the Participant Playbook. The Business Design Playbook guides you to discover, build and tap into business opportunities with your ideas.

[Business Design Playbook](#)

[Participant Playbook](#)



Looking for additional resources?

Here are a collection of publicly available trainings:



► **The Copernicus MOOC** addresses 3 key topics:

- **Chapter 1** - Understanding Copernicus data and services—what they are, and how they can be accessed and used
- **Chapter 2** - Learning from success stories – understanding how existing Copernicus-enabled services and applications have been developed and deployed
- **Chapter 3** - Doing it yourself – acquiring the key skills and knowledge to develop and deploy Copernicus-enabled products and services and to navigate the Copernicus ecosystem.

[Copernicus MOOC](#)



► **Attend Point.MOOC's 14 on-demand training sessions that will steer the technical and business development of your Galileo-enabled IoT product.**

In the first part of our Point.MOOC, you'll **learn all about the basics of creating an IoT business** by journeying through the customer problem, product concept design, business model creation and launching your product.

Not sure where to start with Galileo integration? The second part of Point.MOOC examines positioning in our connected world, and dives deep into Global Navigation Satellite Systems and the European system, Galileo.

[Point.MOOC](#)



Looking for additional resources?

Here are a collection of publicly available trainings:



► Access 18 webinars about entrepreneurship in the space industry by **Astropreneurs Training**.

From the potential for space data and funding sources, through to pitching and business plans, a wealth of knowledge and expertise awaits.

Astropreneurs is a **three-month acceleration programme** that includes **business and technical mentorship**, support to fund your business idea and access to our "SPACE Economy "Astropreneurs" network".

Astropreneurs



Space Academy



► The **EUSPA Space Academy** offers entrepreneurs a free and customisable online development programme. What's in it for you?

- Tailor your learning path with 7 topics & 18 modules spanning **business and technical** Copernicus & Galileo know-how
- Access **Q&A and workshop sessions with seasoned trainers** ready to guide you in the space entrepreneurship world
- **Book online mentoring sessions with +25 experts** from diverse backgrounds open to help you start or scale up your business.

EUSPA Space Academy

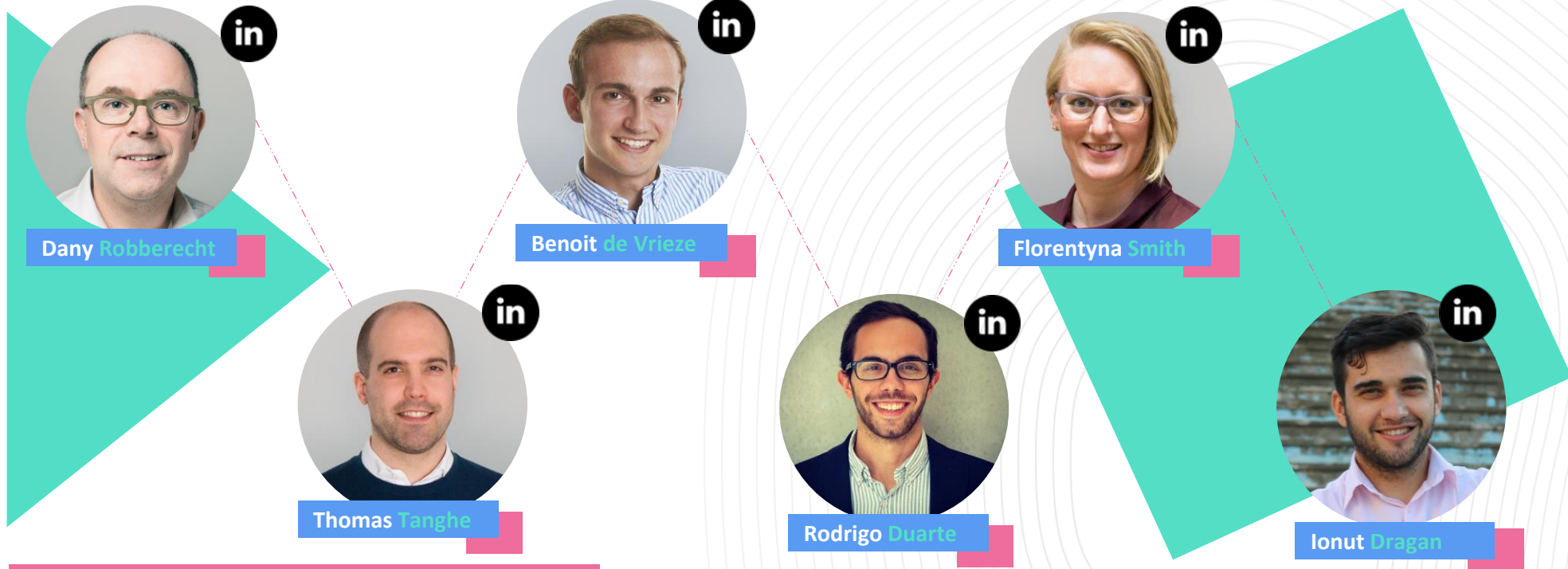


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Meet the core team behind the hackathons & mentoring

Got questions? One of us will get back to you with the answer.



Reach us at: hello@hackathons.cassini.eu



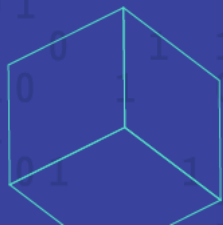
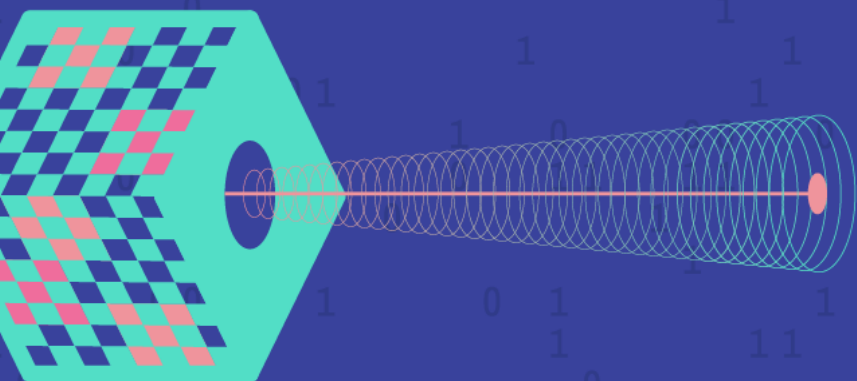
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The Hackathon

In this section, you will find all the information you need to participate in the hackathon.

The CASSINI Hackathon event

Hackathon activities are split across three main events:



1. Big ideas campaign

17th – 20th October



2. THE HACKATHON

4th – 6th November



3. Demo day + Awards

9th November

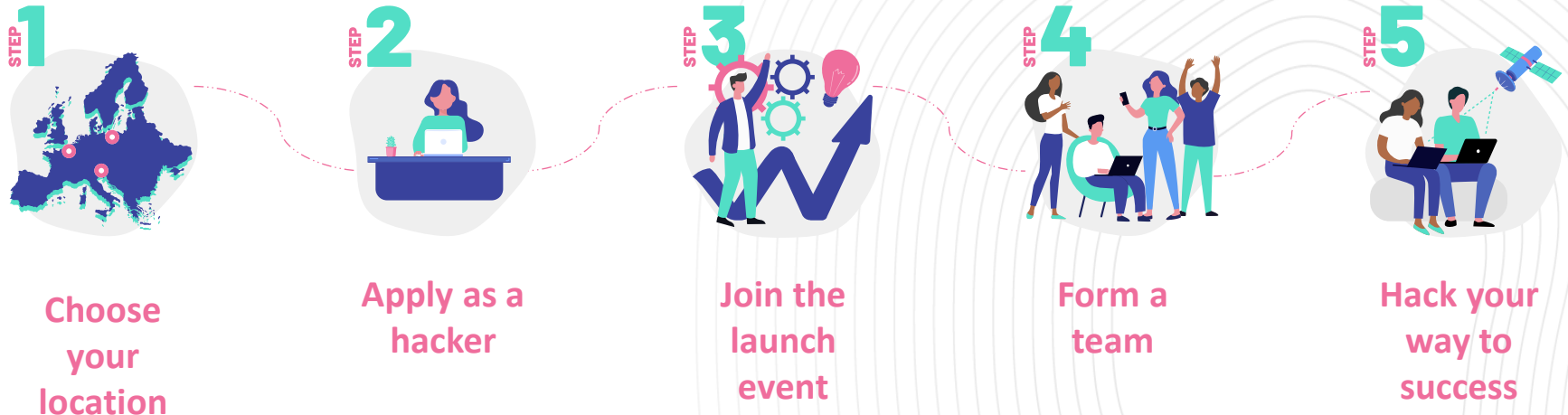


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Hackathons & Mentoring

Get involved as a participant

Ready to apply your skills and knowledge to solve global challenges & make a positive impact?

We are looking for determined hackers with a passion for developing sustainable solutions. **No previous space experience is required.** Just choose a challenge that interests you, and leverage EU space technologies to uplift the financial industry! Follow this simple process to get involved:



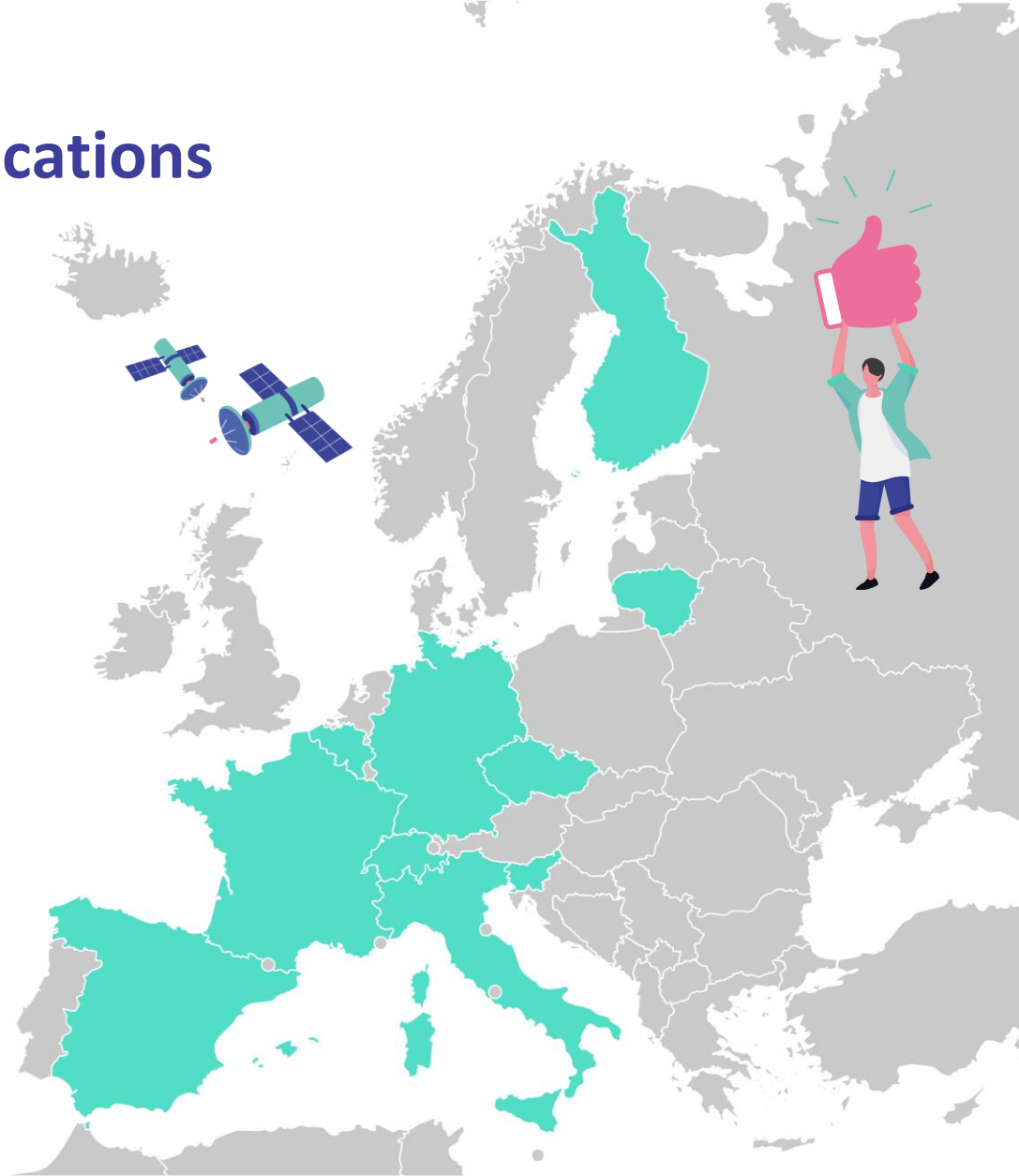
Discover the 10 hackathon locations

The 4th CASSINI Hackathon takes place simultaneously in 10 different locations around Europe.

As a virtual participant, you can take part in any of the locations – it is up to you! You can choose from:

- [Belgium](#)
- [Czechia](#)
- [Finland](#)
- [France](#)
- [Germany](#)
- [Italy](#)
- [Lithuania](#)
- [Slovenia](#)
- [Spain](#)
- [Switzerland](#)

Each location will look to contribute to the future of finance, insurance, and investments with a focus on green and sustainable investments, new risk and damage assessment products, and helping reduce risk and exposure. Each location has their own expert mentors and prizes!





The Hackathon

This edition, the hackathon in Belgium will be organised by EY wavespace™ Antwerp.

EY wavespace™ Antwerp is focused on open innovation and collaboration between corporates and start-ups. It facilitates projects in all innovation phases: from ideation, concept, prototype and co-creation to showcasing a project. With previous experience in running hackathons and a strong team they are ready to bring innovators together to reinvent the way we do finance!

The Prizes

Prizes

- **First place:** €3.000 business support voucher from EY
- **Second place:** €2.000 business support voucher from EY
- **Third place:** €1.000 business support voucher from EY

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/belgium





The Hackathon

This edition, the hackathon in Czechia will be organised by CEE HACKS.

CEE HACKS will be organising the Hackathon in Czechia! CEE HACKS powered by Insane Business Ideas s.r.o. is a consulting and information technology company. With previous experience with organising hackathons and working as an incubator, they are aiming to bring innovative ideas to the forefront and help in making them a reality.

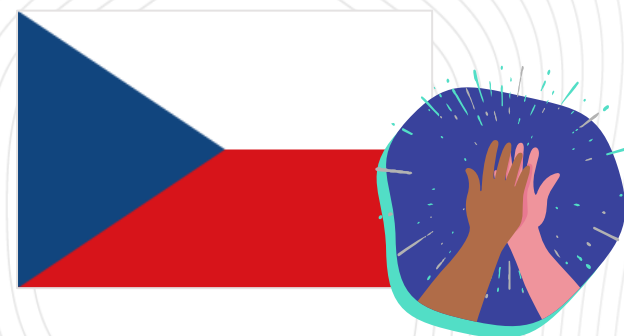
The Prizes

Prizes

- **First place:** €1.000 cash fund
- **Second place:** €1.000 cash fund
- **Third place:** €1.000 cash fund

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/czech-republic





The Hackathon

This edition, the hackathon in Finland will be organised by Ultrahack.

Ultrahack will be organising the Hackathon in Finland! Ultrahack offers IT services and consulting with the aim of driving growth, innovation, and digitalization across multiple industries by connecting public and private corporations with individuals, start-ups, and corporate developers. With plenty of experience in organising hackathons and a strong network of collaborators they are aiming to give participants a space where they can re-imagine the European financial industry.

The Prizes

Prizes

The top three places will be eligible for:

- A €5.000 prize pool.

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/finland



CASSINI Hackathon *France* *Bonjour!*



The Hackathon

This edition, the hackathon in France will be organised by the International Space University.

The International Space University will be organising the Hackathon in France! The International Space University is dedicated to the discovery, research, and development of outer space and its applications for peaceful purposes, through international and multidisciplinary education and research programs. With a strong set of expertise on the theme and a vast network they are hoping to provide a space where space technology and finance meet and thrive.

The Prizes

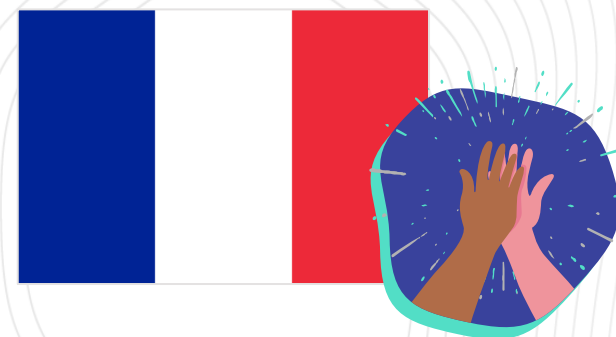
Prizes

The top teams will win:

- Partial scholarships for ISU programs
- Free registrations for IAC 2023 in Baku
- Access to ISU pre-incubation services in the ISU Incubator
- Tour around the SES Headquarters in Luxembourg (inclusive of a technical tour) and Lunch with Senior Managers from ESG and Technology
- Mentorship with senior managers at SES
- Future mentoring with senior managers at SES and ISU plus coaching

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/france



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Hackathons & Mentoring



The Hackathon

This year, the hackathon in Germany will be organised by N3XTCODER.

N3XTCODER will be organising the Hackathon in Germany! Nextcoder Softwareentwicklungs GmbH focuses on IT consulting and services with the objective of aiding in the development of digital products, with a focus on breakthrough technologies that can tackle social problems globally. Having previously participated in the 1st CASSINI Hackathon and with solid experience in organising hackathons and acceleration programmes, they are keen to find new entrepreneurial talent in the financial industry.

The Prizes

Prizes

- **First place:** €1,500 cash, €3,000 in-kind product
- **Second place:** €1,000 cash, €2,000 in-kind product
- **Third place:** €500 cash, €1,000 in-kind product

The top 3 teams will also win:

- UX/UI support from N3XTCODER.

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/germany





The Hackathon

This edition, the hackathon in Italy will be organised by **Fondazione E. Amaldi**.

Fondazione E. Amaldi will be organising the Hackathon in Italy! Fondazione E. Amaldi was established by the Italian Space Agency (ASI) and the Hypatia Research Consortium, as a project that aims to propose a new way of interpreting applied research and technology transfer in support of the national scientific heritage. Their aim is to promote and support scientific research aimed at technology transfer, starting from the space sector, as a fundamental tool for the country's economic development and as a source of innovation. Seeking to keep pushing innovation forward they will be welcoming the participants of the 4th CASSINI Hackathon.

The Prizes

Prizes

- **First place:** €2,500 cash prize + tickets to the New Space Economy Expoforum 2022 + €10,000 of co-funding to launch your startup
- **Second place:** €1,500 cash prize
- **Third place:** €1,000 cash prize

The top 3 teams will also win prizes from our partners:

- A feature in the FeBAF newsletter
- A sponsorship package from Reale Mutua
- Mentoring packages from the ESA Business Incubation Centre and the Hypatia Research Consortium.
- Sponsorship in the development of a Proof of Concept from Reale Mutua

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/italy





The Hackathon

This edition, the hackathon in Lithuania will be organised by Startup Division.

Startup Division will be organising the Hackathon in Lithuania! Startup Division is a leading start-up support organisation, building bridges between start-up ecosystems globally. Through a variety of pan-European and global projects, they collaborate with numerous renowned accelerators, incubators, investors, business angels & venture capitals. Having worked with over 1.000 start-ups and an extensive list of collaborators through their different programmes they aim to continue to encourage the entrepreneurial spirit of the European financial industry.

The Prizes

Prizes

The top two places will receive:

- Cash prizes (totalling €1,000) which they can use to develop their ventures.

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/lithuania





The Hackathon

This edition, the hackathon in Slovenia will be organised Venture Factory.

Venture Factory will be organising the Hackathon in Slovenia! Venture Factory is a purpose-driven business & ecosystem building organisation that helps companies build their businesses. Their focus is on strategy development, business design and ecosystem collaboration. Having been actively involved in the start-up and innovation ecosystem by running a business incubator and with the support of a strong network of collaborators they are looking for the next batch of visionaries ready to turn their ideas into actions at the 4th CASSINI Hackathon.

The Prizes

Prizes

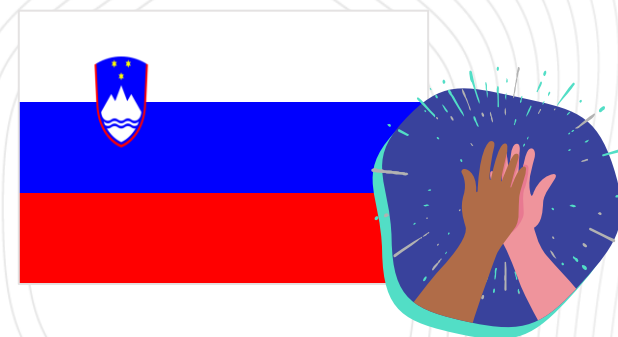
- **First place:** A unique business development package for the winner

The top 3 teams will also win:

- €3.000 cash prize
- Start-up tickets for PODIM 2023

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/slovenia





The Hackathon

This edition, the hackathon in Spain will be organised by Fundació Privada Knowledge Innovation Market, Chamber of Commerce of Barcelona & the Institute of Space Studies of Catalonia

KIM BCN, the Chamber of Commerce of Barcelona, and the IEEC will be organising the Hackathon in Spain! KIM BCN promotes the development of space technology, scouting the most forward-thinking solutions. The Chamber of Commerce of Barcelona has recently established a Commission for Space and Aeronautics to promote and connect space entrepreneurs. Finally, the IEEC fosters space research, innovation and the sector's competitiveness, particularly as the promoter of the New Space strategy of Catalonia.

The Prizes

Prizes

The top three places will receive:

- A cash prize fund of €1,500
- Technical, business and legal mentoring
- Support to reach the international market

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/spain





The Hackathon

This edition, the hackathon in Switzerland will be organised by Space4Impact.

[Space4Impact](#) will be organising the Hackathon in Switzerland! Space4Impact promotes the adoption of space technologies that have a positive impact on Earth. With their Space2Earth Accelerator, they aim to help space start-ups to bring the power of satellite data to new markets. With a strong link to the thematic and having already participated in the 1st CASSINI Hackathon they are now aiming to bring entrepreneurs and coders together to shake up the current European financial industry.

The Prizes

Prizes

The top three places will receive:

- CHF 5.000 in AWS credits
- One training day with AWS

Mentoring

The top 3 teams across all hackathons will be awarded with an additional 100 hours of expert mentoring.



cassini.eu/hackathons/switzerland



Sobloo – The DIAS platform



Earth Observation data is key to help monitor our environment, manage global security aspects and create new solutions. Sobloo was established to support the Copernicus programme by making data freely available to all users and non-discriminatory, through a cloud computing architecture.

AIRBUS



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The role of Sobloo in the 4th CASSINI Hackathon

- **Access to hackathon data cube:** Each participating team will have access to the data cube, prepared for the chosen thematic, through the Copernicus DIAS
- **Access to computing resources:** During the hackathon weekend, and afterwards for winning team, participating teams can work on their solution on the DIAS
- **Access to additional datasets:** Other datasets, including location data, challenge-specific non-space data, sponsored datasets, can be included in the data cube
- **A repository for datasets from participants:** Participants may add to the data cube with their own data to fully support their solution.



Getting started with Sobloo DIAS



sobloo

The 4th CASSINI Hackathon is supported by Sobloo, offering free and open access to a wealth of datasets from different sources, from the Copernicus Sentinels family, to other Earth Observation satellite missions..

For data processing, the teams will have access to a Virtual Machine (VM):

- VM type: Remote Desktop Environment Ubuntu based; Machines s3.2xlarge. Orange Business Cloud, 8 vCPU, 16 GB RAM
 - Storage: 1TB disk with a selected sample of products; 100 GB disk per individual machine.
 - Preinstalled tool kit: Jupyter Notebook, QGIS; Postman including Sobloo and ExtenSO APIs collection, SNAP
 - **Instructions on how to test the VMs and then access the VM will be provided on the following days.** But, to get started with Sobloo, we encourage you to check the following webinar:
- [Sobloo platform](#)

sobloo.eu/



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The data cube - Geographic regions

1. Enabling green and sustainable investments - **Northern Italy**
2. Innovative financial tools and technologies - **Czech Republic**
3. Advancing global financial intelligence - **AMS, ROT, ANTW ports**



The data cube - Sentinel imagery

The data cube has been created for challenge relevant regions across Europe, however the local organisers can also provide additional in-situ data sets.

Enabling green and sustainable investments

- **Sentinel-2 imagery:** 2019 – 2022 (Northern Italy)
- **Sentinel-5P imagery:** spring 2019, 2020, 2022 (Northern Italy)

Application areas for these data:

- Determine levels of air pollution, biodiversity loss, deforestation or water stress
- Space technologies can fill some of the data gaps, namely in the fields of ESG, nature-based solutions and climate related risks.
- Determine the land use, land use change and forestry (LULUCF), to understand the carbon sequestration capacity

Innovating financial tools and technologies

- **Sentinel-1 imagery:** 2020 – 2021 (Czech Republic)
- **Sentinel-2 imagery:** 2020 – 2021 (Czech Republic)

Application areas for these data:

- Sentinel-1 and 2 data can be used in agriculture for determining crop loss or crop yields.
- Use satellite data to predict extreme weather events (floods, droughts, fire, landslide etc).

Advancing global financial intelligence

- **Sentinel 1 imagery:** 2019 – 2020 – 2021 (Amsterdam/Rotterdam/Antwerp ports)
- **Sentinel-2 imagery:** 2019 – 2020 – 2021 (Amsterdam/Rotterdam/Antwerp ports)
- **Sentinel-5P imagery:** 2019 – 2020 – 2021 (Amsterdam/Rotterdam/Antwerp ports)

Application areas for these data:

- Monitor the activity of some of the largest power stations and smelting factories
- Determine the accessibility of power stations in comparison to where are the major urban agglomerations.
- Find correlation between NO2 levels and boat traffic
- Sentinel-1, Sentinel-2 to derive the status of crude oil storage utilisation in ports



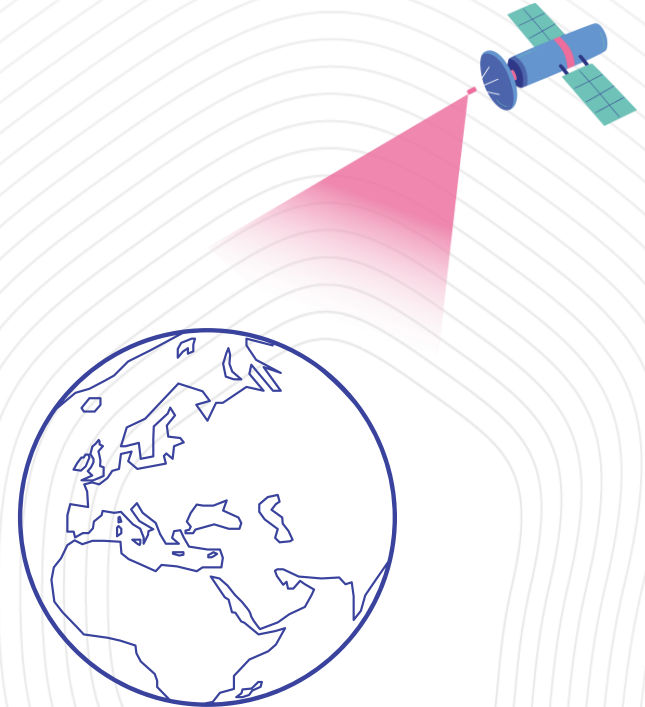
Instructions on how to access the data

- Sobloo tour:
<https://vimeo.com/757491693/a6b6dfb6c3>
- Sobloo Documentation:
<https://gitlab.com/pub-sobloo/support/-/wikis/home>
- ExtenSO API Search Engine:
<https://extenso.space/documentation>



The data cube – Other data

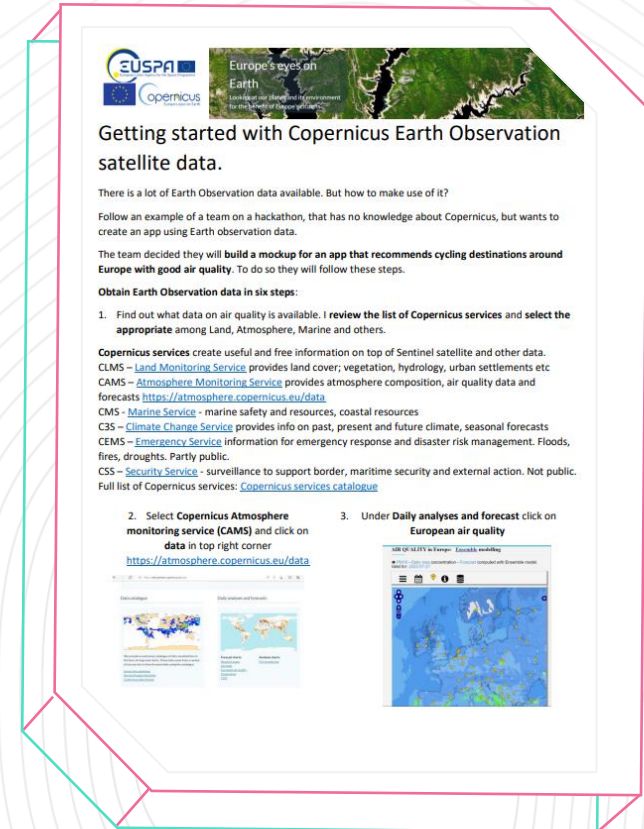
- **Power plant database:** <https://visitors-centre.jrc.ec.europa.eu/en/media/tools/how-power-generated-europe-check-out-our-power-plant-database>
- **Pléiades images over port of Antwerp**
- **Applications on economic impact of COVID:** <https://race.esa.int/>



Getting started with Copernicus Earth Observation satellite data

- EUSPA has created a **simple guide on how to access Copernicus data** for people who hear about it for the first time.
- This file is not exhaustive, and it is meant to be used as a simple guide on how to access various Copernicus data. It is a good starting point if you want to learn more about Copernicus!

[Download the Guide](#)



Accessing the virtual machines

- There will be **30 available virtual machines** for the participants of the 4th CASSINI Hackathon to use.
- Visit Sobloo's ["Getting Started on sobloo.eu" manual](https://sobloo.eu) for more detailed explanations on how to create your account, create an API Key, and using data.
- Please note that **the number of VMs is limited!**

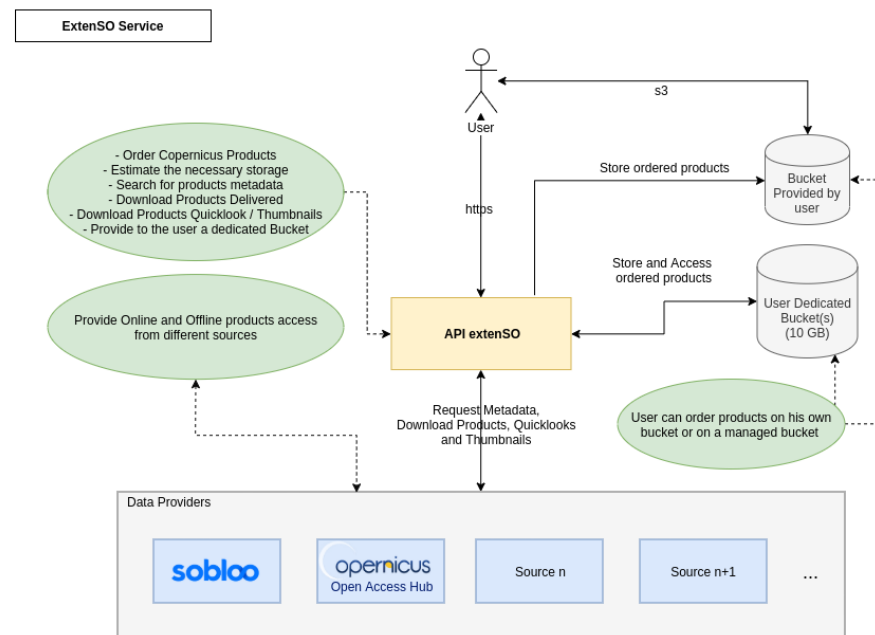
How to set up your virtual machine?

Are you planning to use Copernicus data and information in your hackathon project this weekend? Then you should check out Sobloo's **ExtenSO API Search Engine**.

- 1- Check the ExtenSO documentation [here](#)
- 2- Talk with your local organiser for the details to access the machines

- VM specification: 4 vCPU, 8 GB RAM, 100 TB disk.
- Preinstalled: SNAP; QGIS; Postman

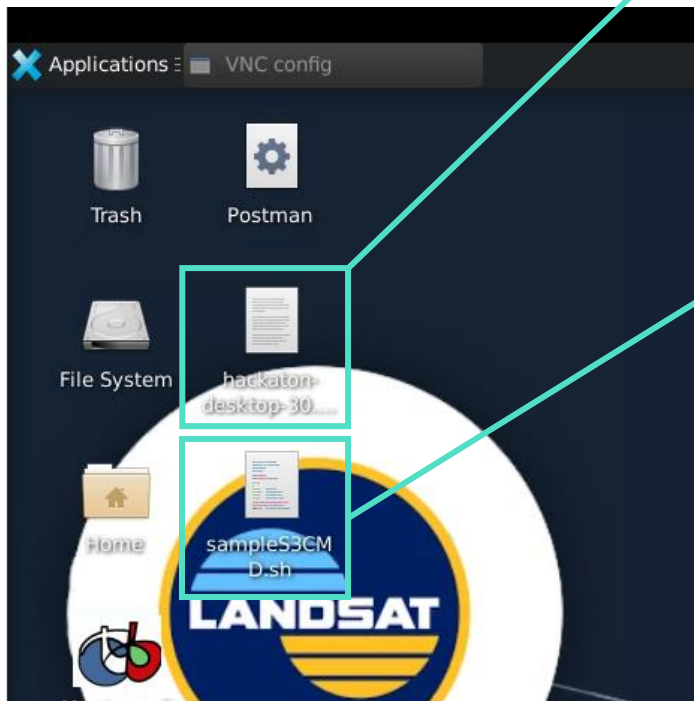
Architecture Overview :



Accessing the virtual machines – Bucket Access

Bucket Access:

- In order to access the bucket where products may be dropped if using extenSO, there will be on each Desktop's Desktop 2 text files:



hackaton-desktop-XX.creds with the Access Key / Secret Key (AK/SK) to access the bucket via S3CMD, or similar

```
Terminal - hackaton-desktop-30.creds (~/.Desktop) - VIM
File Edit View Terminal Tabs Help
export S3_ACCESS_KEY="G00G1EHDELDEYE0B04CT6Z0PECSMYJB3Z5ASL0BLGPZAFE6UKMMK5E27UNR0Q"
export S3_SECRET_KEY="E4QKypbfcX8+lljpWUfslSE2yM0J1m5MIOTFrL"

# Fill product information
export ORDER_ID=<ORDER_ID>
export PRODUCT_ID_ZIP=<PRODUCT_ID_ZIP> # ex : S1A_IW_SLC_1SDV_20141111T171403_20141111T171421_003237_003BC8_1216.zip

# Fill bucket information
export BUCKET_NAME=extenso-hackaton-desktop-30
export BUCKET_PATH_WHERE_YOU_WANT_YOUR_DATA=<BUCKET_PATH_WHERE_YOU_WANT_YOUR_DATA>
export CLOUD_PROVIDER_ENDPOINT=storage.googleapis.com
export CLOUD_PROVIDER_REGION=europe-west1

# DOC EXTENSO: https://extenso.space/documentation.html
```

sampleS3CMD.sh which provides an example of using LS S3CMD to list files present in the bucket, as well as S3CMD GET to retrieve the products from the GCP Cloud Bucket and drop them in the Desktop environment

```
Terminal - sampleS3CMD.sh (~/.Desktop) - VIM
File Edit View Terminal Tabs Help
#!/bin/bash

# DOC EXTENSO: https://extenso.space/documentation.html

# LS
source /home/extenso/Desktop/hackaton-desktop-30.creds && s3cmd --access_key=$S3_ACCESS_KEY
--secret_key=$S3_SECRET_KEY --host=$CLOUD_PROVIDER_ENDPOINT --region=$CLOUD_PROVIDER_REGION
--host-bucket=$BUCKET_NAME.$CLOUD_PROVIDER_ENDPOINT ls s3://$BUCKET_NAME/$BUCKET_PATH_WHERE_YOU_WANT_YOUR_DATA/$ORDER_ID

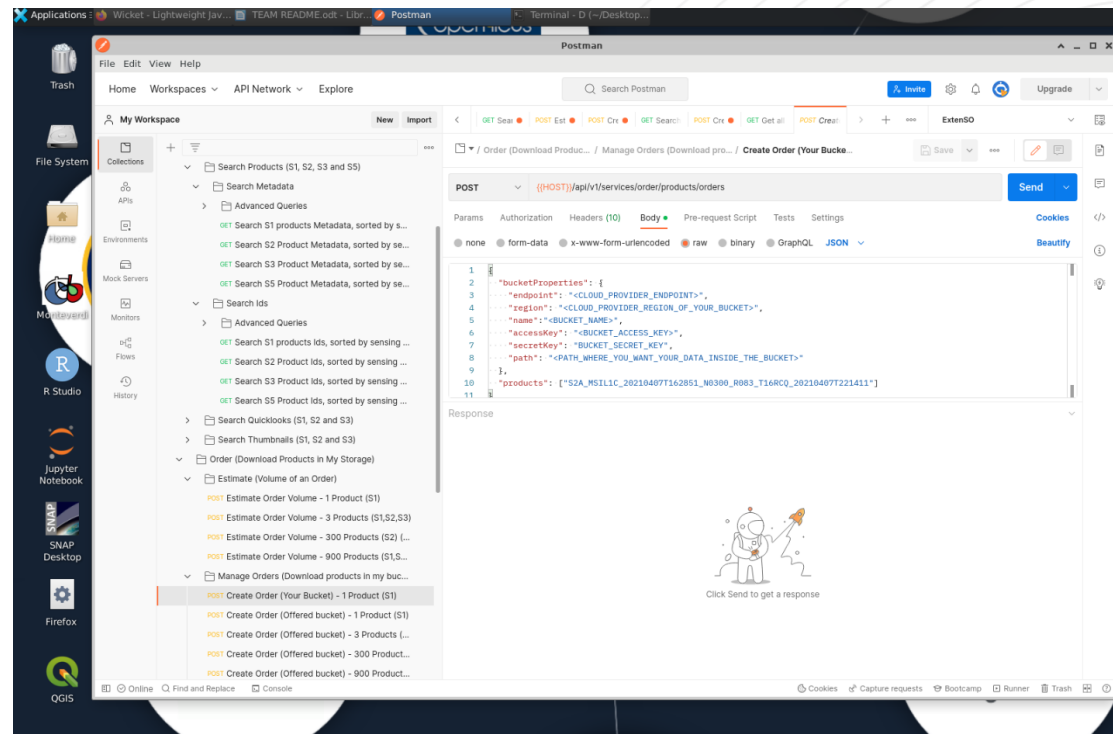
# Download the product
source /home/extenso/Desktop/hackaton-desktop-30.creds && s3cmd --access_key=$S3_ACCESS_KEY
--secret_key=$S3_SECRET_KEY --host=$CLOUD_PROVIDER_ENDPOINT --region=$CLOUD_PROVIDER_REGION
--host-bucket=$BUCKET_NAME.$CLOUD_PROVIDER_ENDPOINT get s3://$BUCKET_NAME/$BUCKET_PATH_WHERE_YOU_WANT_YOUR_DATA/$ORDER_ID/$PRODUCT_ID_ZIP ./
```

Accessing the virtual machines – Configuration

Flavour details: 4 Vcpu, 8GB RAM, 100 TB disk

30 machines

Add your Extenso API Key and info as listed on the text file [hackton-deslopt-XX.creds](#) to the Postman call “Create Order (Your Bucket)”, or to your own access method.



For more information you can visit: <https://extenso.space/documentation.html>



Get precise location data with JASON



J A S O N

The 4th CASSINI Hackathon is supported by JASON, a cloud GNSS processing service by Rokubun, providing participants with accurate location/navigation results immediately.

JASON is a GNSS post-processing cloud service to get accurate location at affordable cost. It is a fully automatic Post Process Kinematic (PPK) processing engine such that users are delivered precise location/navigation results in few clicks.



Automatic PPK

JASON fetches the nearest GNSS base station from more than 7000 stations worldwide.



Improved accuracy

Up to centrimetric accuracy depending on your setup. Save GCPs in your survey operations!



Events sync

Accurate geolocation of time-tagged events, synchronized with your images.



Cloud service

No need for software installation. Access JASON from anywhere.



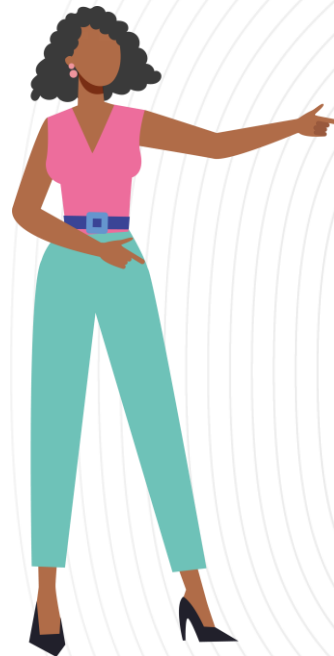
CASSINI
Hackathons & Mentoring

Accessing JASON by Rokubun

Participants of the CASSINI Hackathons & Mentoring have access to the 14-day free trial of JASON. After the 14 days, you will continue to have access on a pay-per-use basis. [You can see the full pricing options here.](#)

For that reason, we recommend that you sign up after the 17th October in order to have access to the full suite of features during the hackathon.

As users of JASON, you will have access to the standard support team via: support@rokubun.cat. There will also be access to a dedicated CASSINI Hackathon support session on Saturday 5th November, during the hackathon.



Learn more about JASON:

- [How to use JASON](#)
- [How to improve accuracy](#)
- [Features](#)
- [Coverage](#)
- [FAQs](#)
- [Documentation](#)

R O K U B U N



The Hackathon Weekend & Demo Day Agenda

Over the weekend,
you can join the
live stream via:



In addition, there
will be sessions led
by local hackathon
organisers that you
can access.

Nov 4

Friday

18:00 Welcome to the Space for the
Financial World [Live]

→ Getting started

19:00 Local Hub's Opening Sessions

20:30 Ask Sobloo [Discord]

Nov 5

Saturday

9:30 Kick-off Session & What's Ahead

9:35 Meet our Locations - Part 1

10:00 Ask JASON [Discord]

10:30 Ask Sobloo [Discord]

11:00 Discussion with Estelle Godard (ESA)

11:15 Meet our Locations - Part 2

12:00 Ask ESA [Discord]

13:00 Chat with a Past Winner: AILApaths

13:15 Meet our Locations - Part 3

14:00 Ask EUSPA [Discord]

16:40 Check-in with the Teams

17:00 Round-up of the day!



The Hackathon Weekend & Demo Day Agenda

Over the weekend,
you can join the
live stream via:



In addition, there
will be sessions led
by local hackathon
organisers that you
can access.

Nov 6

Sunday

10:00 Kick-off Session & What's Ahead

10:10 Interviews with Official Visitors

11:10 Pitching Crash Course

14:30 Submission deadline

14:35 Good luck to the Teams

→ Local pitch contest & award show

**17:30 Closing Ceremony & Winners
Announcement**

Nov 9

Wednesday

18:00 Demo Day & Awards Ceremony



Get to know the hackathon rules

- No development may start before the actual date and time of the Hackathon Weekend. Please do not begin hacking before **Friday 4th November 2022 at 19:00 CEST**.
- To ensure a level field for all contestants, all code must be created by the team, during the Hackathon Weekend.
- You are permitted to use publicly available or openly licensed APIs, SDKs, frameworks and other software libraries for your project.
- Any software development tools and/or programming language can be used.
- Teams that violate these rules will be automatically disqualified.

For full information about participating the CASSINI Hackathons, read the [Terms & Conditions](#)



Participating in the virtual hackathon

Click the register button on our website cassini.eu/hackathons/ and engage with us across these platforms:

Hackathon platform

Want to register as a participant? Great! Head to the hackathon platform, register, and join/form a team.

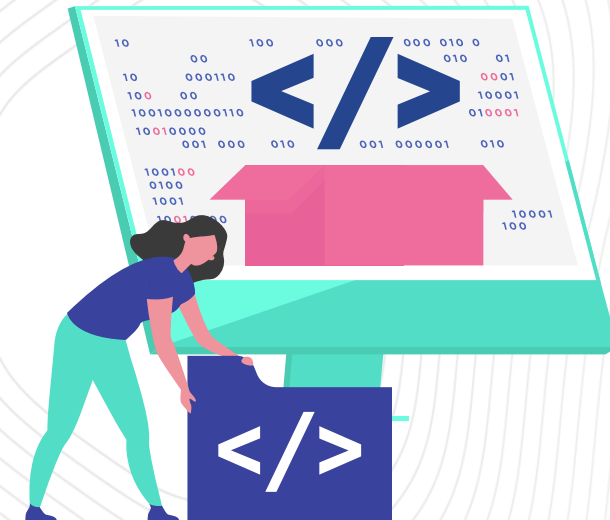
To hackathon platform

Community platform

Keep up to date with the latest hackathon information, find team mates and ask questions on our community platform.

To community platform

TAIKAI



Form or join a team on the hackathon platform

Sign into your TAIKAI account [here](#) and follow the steps to create or join a team and submit your hackathon project.

1. Create or join a team

Already know who your team members are? Create a team and share a link.

Looking to join a team? Head to [Discord](#) to meet fellow participants. Check out the #find-your-team channel

2. Select a challenge

Choose from one of the three challenges:

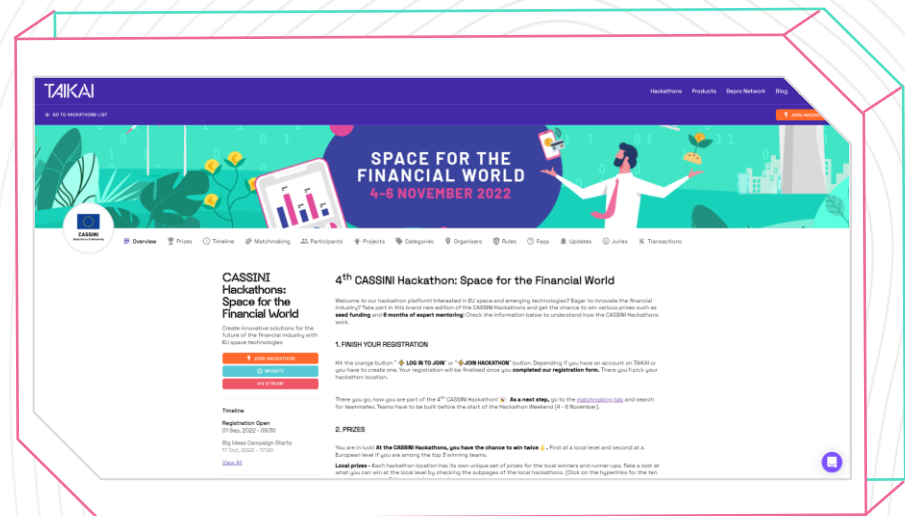
- Enabling green and sustainable investments
- Innovating financial tools and technologies
- Advancing global financial intelligence

3. Submit your project

Make sure to submit before the deadline:

14:30 CEST, Sunday 6th November 2022

TAIKAI



TAKAI's participants journey – Forming a team

If you are a team leader and already have a project in mind, but don't yet have a full team, follow these steps to create your dream team:

1. Go to the matchmaking tab

Visit TAIKAI, go on to the [‘participants’ tab](#) and take the first steps to create a dream team!

2. Scout for participants

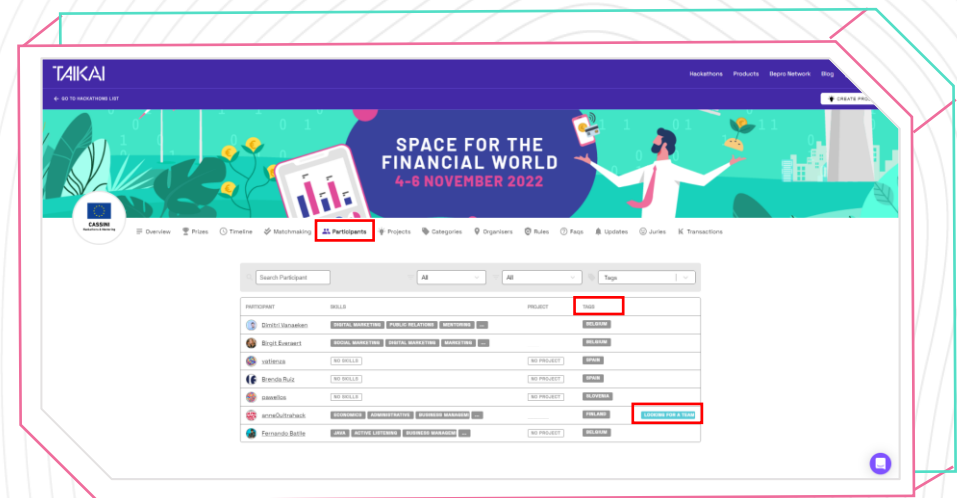
Find your ideal team member:

- Search for participants from your hackathon location
- Check ‘Looking for a team’ tag
- Filter by skillset

3. Contact future team members

Message the person, introduce yourself and your project.

TAIKAI



TAKAI's participants journey – **Joining a team**

If you are an innovator looking for a team, follow these steps to find your dream team:

1. **Go to the matchmaking tab**

Visit **TAIKAI**, go on to the [‘matchmaking’ tab](#) and take the first steps to join a dream team!

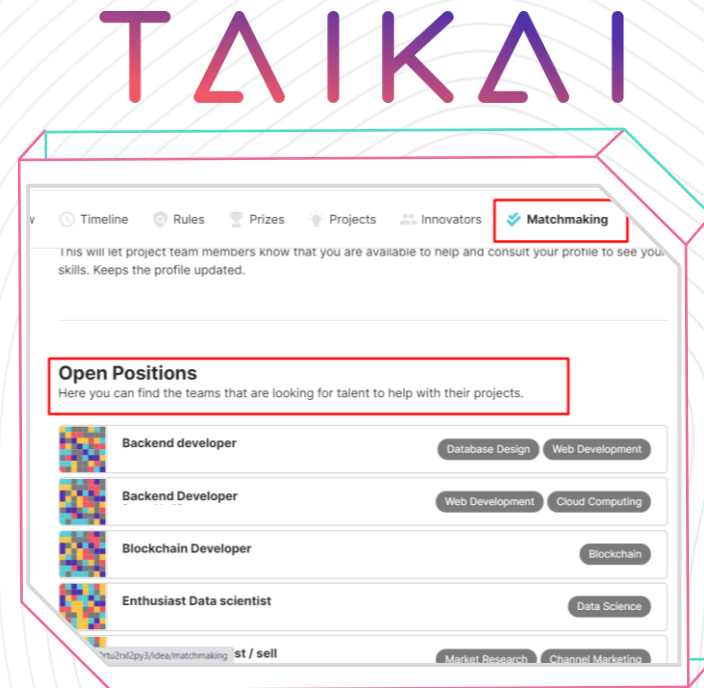
2. **Scout for projects**

Find your ideal project:

- Search for projects from your hackathon location
- Check the skills needed for the project
- Choose your ideal team

3. **Contact project owner**

Message the person and introduce yourself.



TAKAI's participants journey – Changing location

Interested in trying out a new location? You can do so by editing your registration on TAIKAI!

1. Go to our platform page

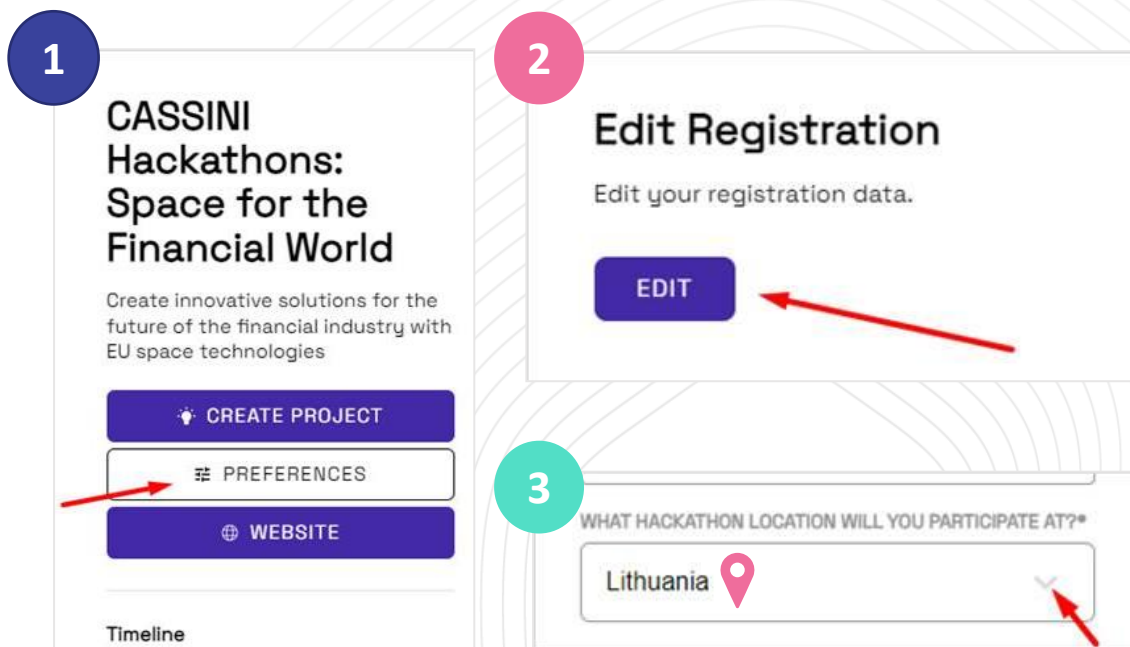
Log in to your TAIKAI account and visit the Hackathon's [platform page](#). Click on 'Preferences'

2. Edit your registration

Click the 'Edit' button on 'Edit Registration'

3. Choose a new location

Select the hackathon you wish to participate in from the **local organiser list** and save your preferences.



Note:

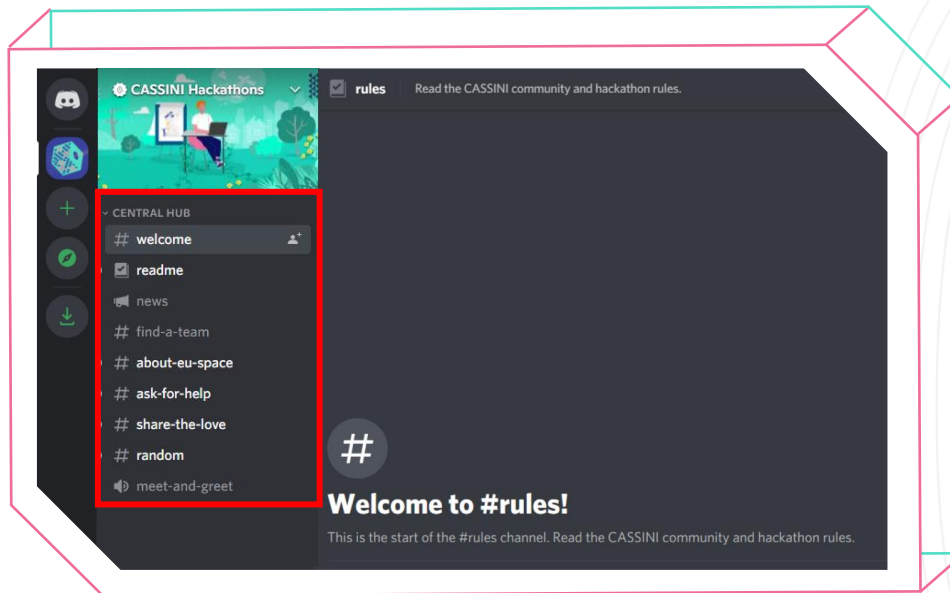
- The whole team has to be enlisted for the **same hackathon location** to which you want to attend.
- The project has to have the **same tag** as the hackathon location where you participate. You can change the tag of the project as well in TAIKAI.



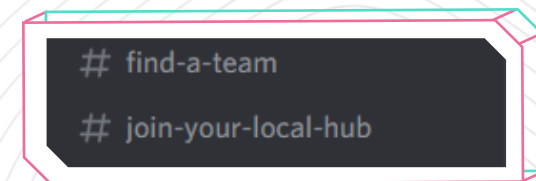
Engage with the hackathon community on discord

Interact with your local organisers and fellow participants on [Discord](#). This is where the main hackathon communication will take place throughout the weekend. You can use the different channels to ask questions, have a chat, and hear the latest information about your local hackathon.

Central Hub



Local Hackathon




Check out the top 5 to do on Discord!


Familiarise yourself with the platform prior to the start of the hackathon and make the most out of your communication tool!



1

 **Read the community rules** >
readme


2

 **Join your local hub** >
join-your-local-hub


3

 **Say hello to other hackers** >
welcome

4

 **Find your team members** >
find-a-team

5

 **Ask your questions about the hackathons** >
ask-for-help

I'll just look around for now



Demo Day & Award Ceremony

During the Demo Day & Award Ceremony the 10 winners of the local hackathons will pitch their projects. A jury of experts will evaluate the projects and select the three overall winners who will win 100 hours of expert mentoring.



Join the demo day to...

Meet the top teams from the 10 local hackathons

Watch 10 innovative project pitches

Discover the 3 overall winners of the hackathon





CASSINI

Hackathons & Mentoring

Mentoring Programme

In this section, you will learn about the mentoring programme available to the top 3 teams selected in the hackathon.

Each winner has access to 100 hours of mentoring

Three winning teams can benefit from **100 hours of mentoring** spread across the six months following the event.

How does it work?



Each team will have a lead mentor who will guide them through the mentoring programme.



The lead mentor will connect the teams with different expert mentors who are available in 5-hour blocks.



Teams will monitor their progress over the six months on their path to creating a sustainable and commercially viable solution!



Meet some of our mentors

Each of the three overall winners will work with our expert mentors. Their backgrounds range from product development, Earth observation and GNSS through to business development, marketing, design and more. Here are a small selection:



Carlos Bello Marcos
INNOVA4EU



Dimitris Matsakis
P.L.A.N.



Dr. Johanna Braun
Owner, Innovation, Venture &
Sustainability Advisory



Dennis Kibirev
Mesh Ai, FrontierFunder



Floriano Bonfigli
AC75



Pablo Garrido
EIT Urban Mobility



Alexandre Mencik
Space Platform



Pedro Branco
Virtual Angle B.V.





CASSINI

Hackathons & Mentoring

Thank you