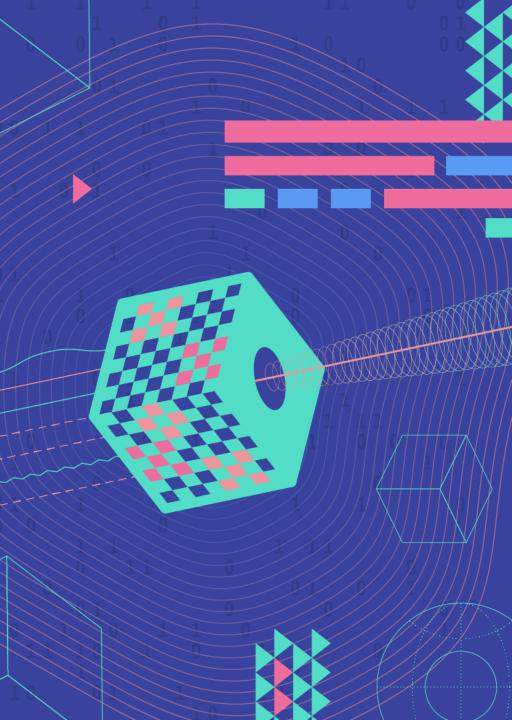


# Participant Playbook

10th CASSINI Hackathon: Space for Consumer Experience

7 - 9 November 2025



# The participant playbook is intended to guide you through the most important information about the 10<sup>th</sup> CASSINI Hackathon & Mentoring.

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

We are eager to see how you use EU space technologies to support consumers' experiences!











# What you will find in this playbook

## **Core information**

- Overview of the 10<sup>th</sup> CASSINI Hackathon
- The theme and challenges
- Connecting with the EU Space programme
- EU Space programme
- Tools & resources
- Accessing help & support

#### 2. The Hackathon

- The Hackathon events
- The 10 local organisers
- Accessing the data
- 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
- Meet some of our seasoned mentors













## **Space for Consumer Experiences**

Transforming space tech into unforgettable consumer experiences

What lights up **imaginations and brilliant creations?** 

In the upcoming CASSINI Hackathon, participants are challenged to create solutions that use European space technologies to advance consumer experiences in gaming, sports, and tourism.

From revolutionising gaming with Earth imagery to optimising sports performance and reimagining travel, space technology and data offers new possibilities for consumers to be entertained and to interact with their environment in innovative and creative ways.

Whether it's gaming for entertainment or to drive awareness, improving sports performance with real-time satellite data, or enabling smarter, more enjoyable or more sustainable travel, space technologies can enrich everyday life.

Think big, dream bold, and craft the future of consumer experiences!



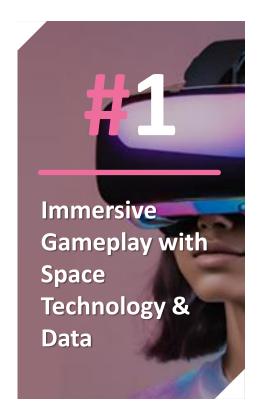


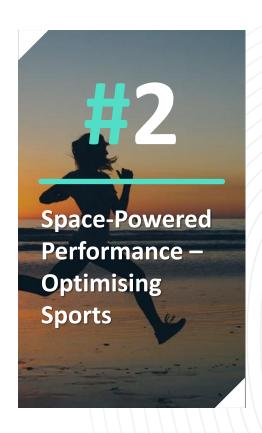






# **EU Space for Consumer Experiences**

















## Challenge #1: Immersive Gameplay with Space Technology & Data

Unleash the potential of space technologies to revolutionise the gaming world. Use cutting-edge space assets, such as Copernicus Earth observation data, Galileo positioning services, and satellite connectivity to create immersive, thrilling, or science-driven gaming experiences.

Design a detailed game concept that leverages one or more of these assets: Copernicus for realistic terrain, weather patterns, or environmental monitoring; Galileo for precise positioning and navigation in dynamic gameplay; or satellite connectivity for real-time updates or enhanced multiplayer scenarios.

Develop core gameplay mechanics that creatively integrate these technologies, explaining how players will interact with features like resource management, exploration, or real-time event responses to deliver an engaging experience that blends strategy, science, and adventure.











## **Challenge #2: Space-Powered Performance – Transforming Sports**

Leverage EU Space technology and data to push the boundaries of sports performance and fan engagement. Use space technologies such as Galileo, Copernicus Earth observation data, and satellite connectivity to improve athlete training, enhance audience experiences, and optimise real-time sports analytics and insights.

Design a detailed concept that demonstrates how space assets can be applied to:

- Sports performance: Utilise GNSS for precise athlete tracking and analytics with wearable technologies, or satellite imagery to create training plans that consider terrain, weather, and elevation in real time.
- Fan engagement: Develop immersive AR applications that use live satellite data to enhance extreme sports experiences, visualising stats such as altitude, wind speed, and location.

Show how space innovation can redefine the playing field by creating solutions that are data-driven, impactful, and engaging.











## Challenge #3: Beyond Horizons - Redefining Travel with Space Innovation

Use space technologies to transform how we explore and experience the world. Leverage assets such as satellite navigation, Copernicus Earth observation data, or climate monitoring tools to create solutions that promote sustainable tourism, interactive travel experiences, and personalised adventures. Bring travellers closer to Earth's beauty while supporting environmental preservation.

#### Your solution should focus on:

- Leveraging satellite imagery, Galileo positioning, or Copernicus data to enhance personalised and safer travel experiences.
- Promoting sustainable and environmentally conscious exploration.
- Creating immersive or interactive travel solutions that connect people to the planet in innovative ways.
- Enable travel providers to enhance their services to craft unforgettable, ecoconscious journeys.











## 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 hackathon challenges participants to use data and signals from Copernicus, Galileo & EGNOS or future services using IRIS2.



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.

More information



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.

More information



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).

More information











## 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 hackathon challenges participants to use data and signals from Copernicus, Galileo & EGNOS or future services using IRIS2.

#### **GOVSATCOM**

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

More information



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.

More information



The IRIS2 Satellite Constellation will offer enhanced communication capacities to governmental users and businesses, while ensuring high-speed internet broadband to cope with connectivity dead zones.

More information











# **Spotlight on Copernicus data & information**

Never worked with Copernicus Earth observation data? No problem!

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

- What is the Copernicus programme?
- Overview of the programme
- The Copernicus services
- Copernicus Data Space Ecosystem
- The Copernicus Browser









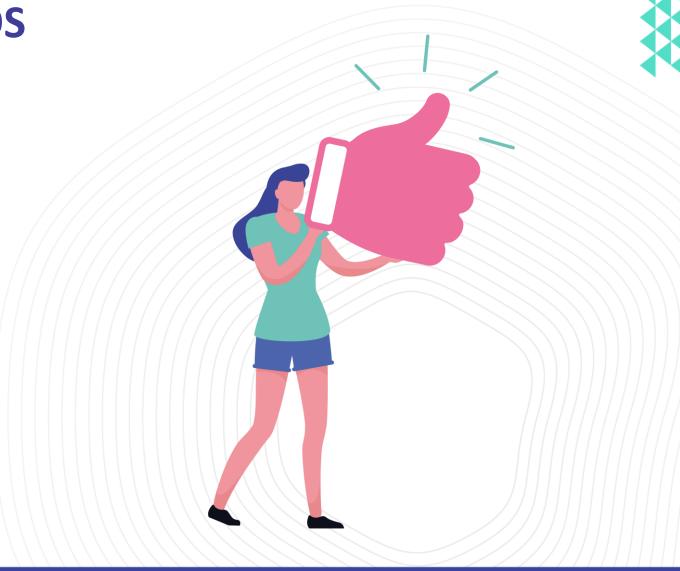




# **Spotlight on Galileo & EGNOS**

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

- What is Galileo?
- What is EGNOS?
- Galileo-enabled devices
- EO & GNSS Market Report









## 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!



#### Jupyter notebook

We wanted to minimise the time needed to process data. That's why we created a dedicated data notebook for each hackathon. The data notebooks contains several resources focused on the hackathon theme. Learn about the Copernicus Data Space Ecosystem, the platform used for the last editions of the hackathons.

**Go to Copernicus** 

#### **Cloud infrastructure**

Access virtual storage and computational resources for the duration of the hackathon. The Copernicus Data Space Ecosystem supports this hackathon edition and will enable you to discover, manipulate and download Copernicus data and information. You will also have all the processing power and storage you need to hack your way to success.













## 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!

#### Connect to a satellite

Participants in the CASSINI Hackathons will have the opportunity to connect directly to satellites, a service provided by <u>KINEIS</u>. This will allow you to test and validate your solutions in real-world conditions, using live data from advanced sensors. By integrating this technology, you can enhance your projects with real-time functionality, adding practical and innovative elements to your hackathon experience.

**Go to KINEIS** 













## 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.

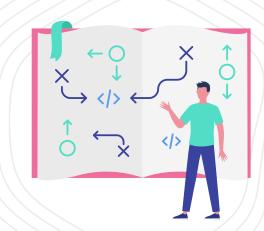
github.com

#### 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 is a collection of **publicly available** trainings:

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

- Tailor your learning path 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 +30 experts from diverse backgrounds open to help you start or scale up your business.





**EUSPA Space Academy** 





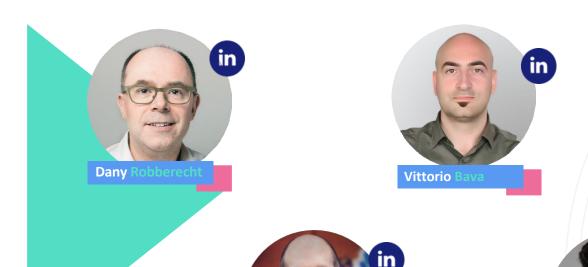






## Meet the core team behind the hackathons & mentoring

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



**Thomas** 

Reach us at: <a href="mailto:hello@hackathons.cassini.eu">hello@hackathons.cassini.eu</a>



Eleni/



in







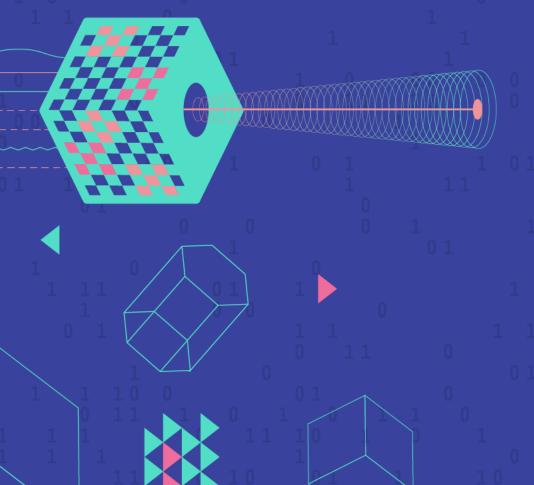


Aaron









# The Hackathon tools

In this section, you will learn about the information on the available tools you can use during the Hackathon

## **Data & Tools**

#### **EO data & APIs**

The Copernicus Data Space Ecosystem is an open platform providing access to Copernicus Earth observation data

#### **Satellite IoT Connectivity**

Get real-time data (like temperature, humidity etc) by connecting to a satellite.

#### **Visualization Platform**

Collect, visualize and use the collected data.











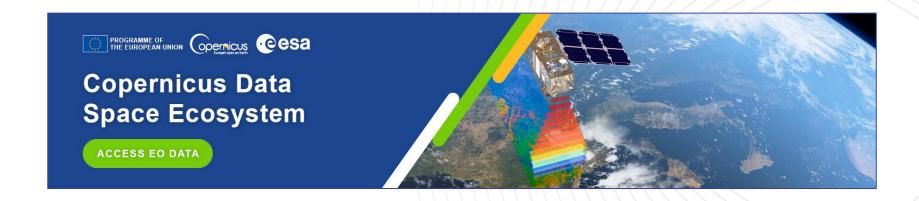






## The Copernicus Data Space Ecosystem

- We are working with the Copernicus Data Space Ecosystem to give you free access to cloud processing infrastructure and data storage for the duration of the event.
- The package includes:
  - Processing tools: Access APIs, versatile tools and web-based environments
  - Data access: Data & information at your fingertips
  - Training & support: Training sessions and technical support during the Hackathon Weekend













## The Copernicus Data Space Ecosystem

- You can find tailored on-demand training videos on the Copernicus Data Space Ecosystem by visiting our <u>Tools page</u>. These includes trainings on:
  - Introduction to Copernicus, the Data Space Ecosystem, and browser
  - How to use the Copernicus Data Space Ecosystem APIs
  - Introduction to Galileo & EGNOS
- Alternatively, you can also visit <u>dataspace.copernicus.eu</u> for further features, tutorials and highlights demonstrating the use of the Ecosystem, including:
  - Exploring the Copernicus Data Space Ecosystem
  - Sentinel data

- Copernicus Browser
- openEO

#### Other useful links:

Documentation Site

- <u>Custom Scripts Repository</u>
- Jupyter Lab

- Request Builder
- Sentinel Hub API Documentations
- openEO Algorithm Plaza
- Service Desk

- Copernicus Browser
- Github Notebook Samples Repository
- openEO web editor











## **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 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













# **Satellite IoT Connectivity Package**

Participants are encouraged to pick up a challenge that may involve IoT. To make this possible you will be provided with the following:



SeeedStudio Grove Beginner Kits for Arduino



**Arduino Uno Rev3 board** 



Kineis KIM1 SPP kit



**Access to All Things Talk platform** 

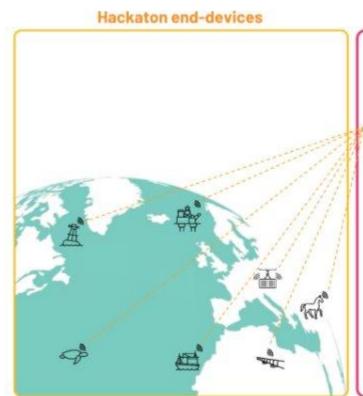






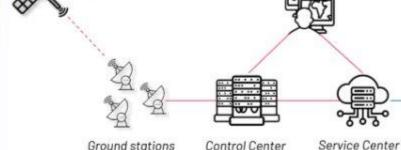


# **System architecture with Kineis**





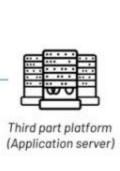




A global IoT network that supports low data rate communication, long-distance connectivity, and low power usage

Data are sent directly to a satellite and are being transmitted to ground stations





Data are collected to the All Things Talk platform to be visualized







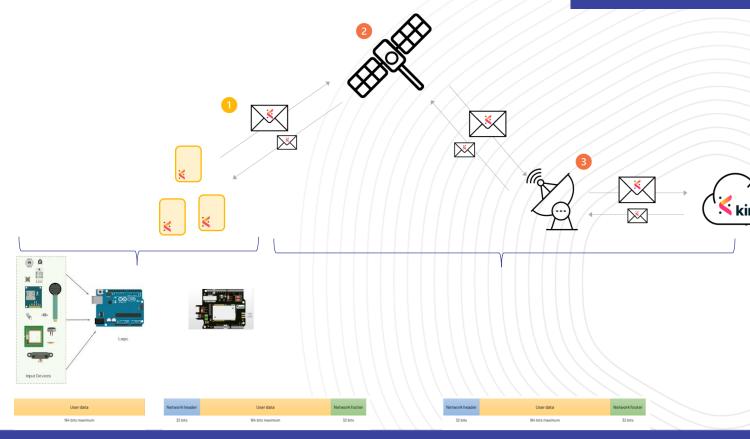




# **System architecture with Kineis**

Find a step-by-step guide **here** 

Plug the KIM1 SPP in the Grove Beginner Kit For Arduino



CRC\_OK : true MESSAGE\_COUNTER : 370

RAW\_DATA : **184bit User** 

data

Codec : KIMV1 Values :

MQTT

User data 184 bits maximum

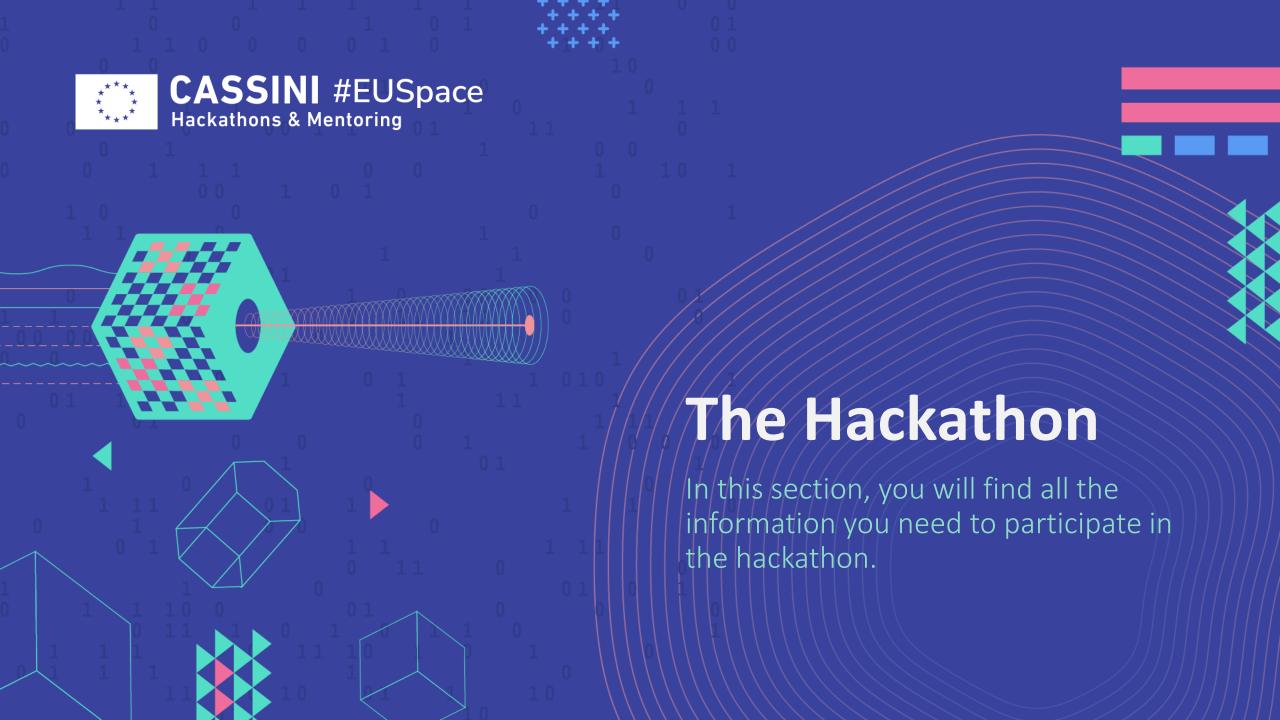












## The CASSINI Hackathon event

Hackathon activities are split across three main events:



Big ideas campaign

13<sup>th</sup> – 24<sup>th</sup> October



THE HACKATHON

07-09 November



Demo day + Awards

12<sup>th</sup> November













#### November **7**

Friday

18:00 Welcome to the HACKATHON

18:05 Welcome from Stefan Schneider (EUSPA)

18:10 Details for the weekend ahead

- The theme, challenges, EU Space data
- Practical information
- Overview of the Hackathon locations
- Interaction with local organisers
- Technical briefing on tools (KINEIS, ATT, Copernicus)
- Last words

**18:30** International Sharing Session

19:00 Livestream carousel

20:00 Workshop: Business Modelling

#### November 8

Saturday

09:30 Kick-off Session & What's Ahead

09:35 Livestream carousel

10:00 Workshop: Needs Analysis

10:30 Livestream Carousel

12:20 International Sharing Session

13:10 Livestream Carousel

15:00 Workshop: Product/Service

**16:00** Workshop: Pitching

17:00 International Sharing Session

17:30 Workshop: Roadmap Building

18:00 Round-up of the day!

## November 9

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

10:10 Livestream carousel

13:30 Deadline reminder

15:00 Submission deadline

**15:05** Local Pitching Contest

15:05 Livestream carousel

#### **18:00** Winners Announcement

- Thank you from Stefan Schneider (EUSPA) and Tomas Halaska (European Commission)
- 1st, 2nd, 3rd Winners Announcement
- Interviews Winning Teams
- Round-up and closing remarks

<sup>\*</sup>Local Organisers may adapt the agenda to a local programme, while participating in the central sessions online













## The 10th CASSINI Hackathon takes place in 10 different locations

All students residing in Europe, entrepreneurs, engineers, designers, researchers, policy makers, professionals, and others are welcome to participate. No previous experience is required!

On-site at one of the hackathon locations or remotely

No previous space experience is required!

#### Check out our 10 locations:

- BeCentral, Belgium
- Sofia Tech Park, Bulgaria
- Helsinki Think Company, Finland
- <u>N3xtcoder</u>, Germany
- Impact Hub Athens, Greece

- H-Farm, Italy
- Prishtina REA, Kosovo
- University of New Caledonia (UNC), New Caledonia
- Krakow Technology Park, Poland
- Slovak Space Office, Slovakia













## Open for everyone with a passion for Consumer Experience

All European students, entrepreneurs, engineers, designers, researchers, policy makers, and others are welcome to participate:

On-site at one of the hackathon locations or remotely

No previous space experience is required!

Online resources



Relevant datasets





Interesting speakers



Access to experts



Cool prizes











## **Big Ideas Campaign**

The Big Ideas Campaign is a series of evening events between 13 – 24 October filled with exciting and invaluable sessions intended to get you warmed up for the Hackathon Weekend!

Join the campaign and take advantage of the benefits!

#### **Training**



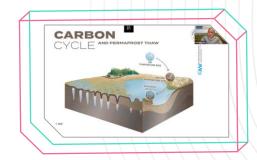
Learn about EU space technology, Copernicus, Galileo & EGNOS. We'll make sure you are equipped with the knowledge and tools to succeed during the hackathon.



#### **Inspiration**



Get inspired by our success stories, past winners and training sessions we prepared so you can change the way we do finances!



#### **Networking**



Take advantage of the Pan-European network and engage the community!













### Get to know the hackathon rules

#### **General rules**

- No development may start before the actual date and time of the Hackathon Weekend. Please do not begin hacking before before Friday 7<sup>th</sup> November 2025 at 18:00 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.

#### **Hacker** eligibility criteria

- Apply as an individual
- 18 years or older
- Reside in European Union or a non-EU country associated with Horizon Europe

#### **Team** criteria

- Minimum 3 & maximum 8 team members
- At least 1 with a technical profile and 1 with a business profile
- Have an idea to work on

**For full information** about participating in the CASSINI Hackathons, read the **Rules of Contest** 









## Participating in the virtual hackathon

Click the register button on our website <u>cassini.eu/hackathons/</u> 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 teammates and ask questions on our community platform.

To community platform















## Form or join a team on the hackathon platform

Sign into your TAIKAI account <a href="here">here</a> and follow the steps to create or join a team and submit your hackathon project.

#### 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 <u>Discord</u> to meet fellow participants. Check out the #find-your-team channel

#### 2. Select a challenge

#### Choose from one of the three challenges:

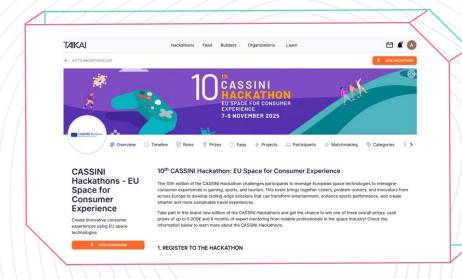
- Immersive Gameplay with Space Technology & Data
- Space-Powered Performance Optimising Sports
- Beyond Horizons Redefining Travel with Space Innovation

#### 3. Submit your project

Make sure to submit before the deadline:

15:00 CEST, Sunday 9th November 2025









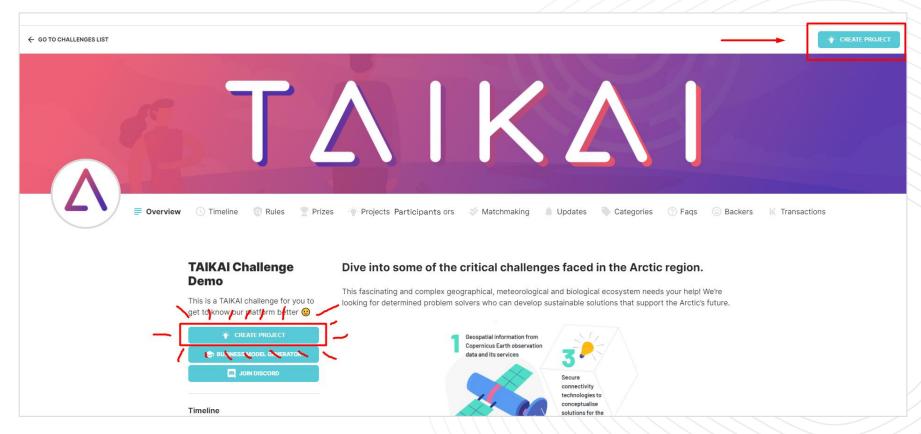






## **TAIKAI - Project creation**

To create a project, participants need to navigate to the "Create Project" button on the screen's top right or on the left sidebar.







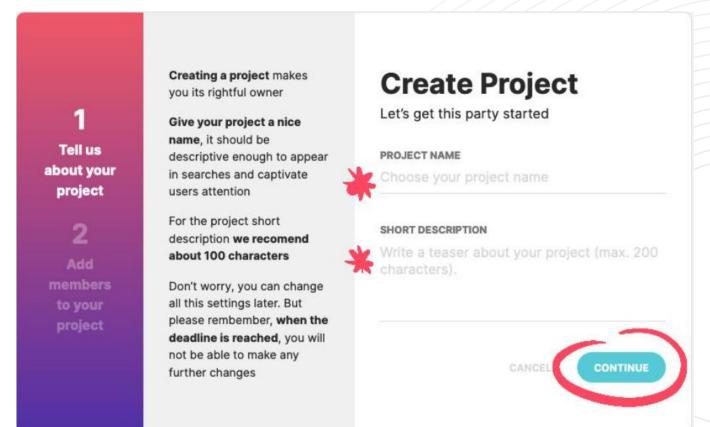






## **TAIKAI updates – Create a project**

They will then be prompted to provide the **title** of their project and a **short description** of what they are planning to build.







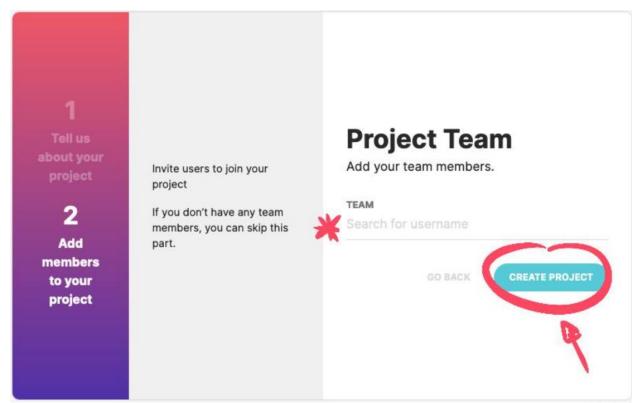






## **TAIKAI updates – Create a project**

The final step is to add their team members to the project. All team members need to be registered on the TAIKAI platform and registered to the challenge. Once they have completed adding their team members, they must click on "Create Project" button.



Once they have created their project, they can then fill out their project details and complete it during the hackathon



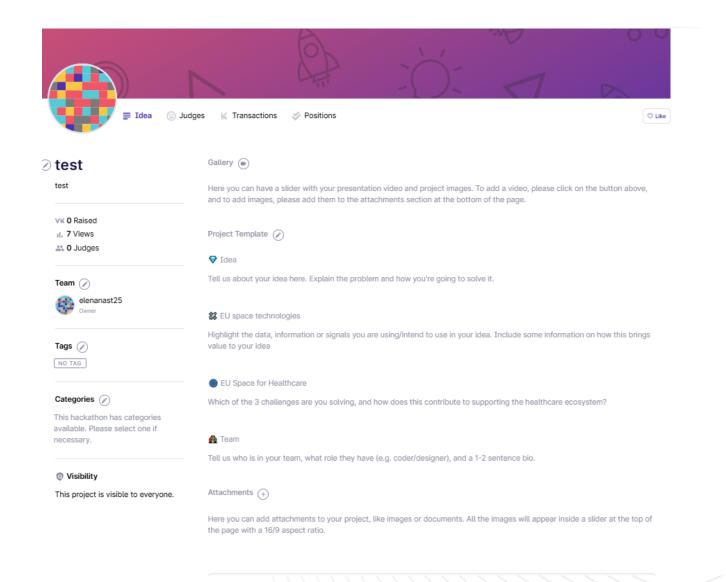




## **Project details**

All team members must be registered to the same hackathon location.

All projects must have the correct tag (hackathon location).









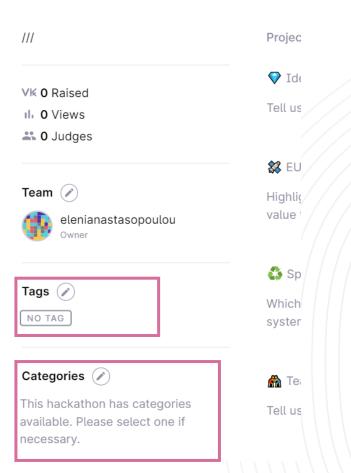




## **Project details**

Add your tag and select your country

Click on the categories and select the hackathon challenge you are addressing.







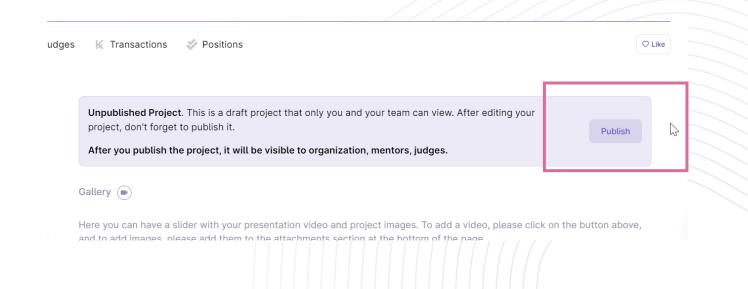






## **Project details**

When you are ready publish your project!













## **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**:

## Create your project and indicate you're looking for teammates

- Visit TAIKAI and create your project
- Once you publish your project, go to your project dashboard and click on the "Positions" tab
- Describe the details of the position

### 2. Scout for participants

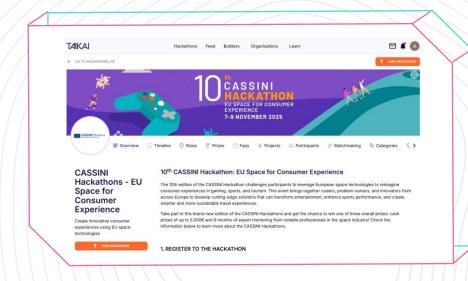
#### Find your ideal team member:

- Go on to the 'Participants' tab
- 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.















## TAKAI's participants journey – Joining a team

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

#### Indicate your availability

- Visit TAIKAI
- Click on the "PREFERENCES" tab on the left
- Click "Yes" under the Matchmaking section

#### 2. Scout for projects

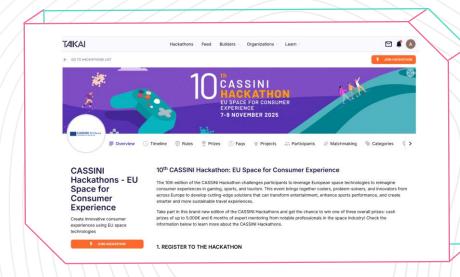
#### Find your ideal project:

- Go on to the <u>'matchmaking' tab</u>
- 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.

## TAIKAI













## **TAKAI's participants journey – Changing location**

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

## Go to our platform page

- Visit TAIKAI
- Log in to your TAIKAI account
- 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.



Ou must live either in the European
Union (any country) or in a non-EU
country associated with Horizon Europe
(or in ongoing negotiations for an
association).

What hackathon location will you participate at?\*



2 Edit Registration

Edit your registration data.

Edit

#### 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.







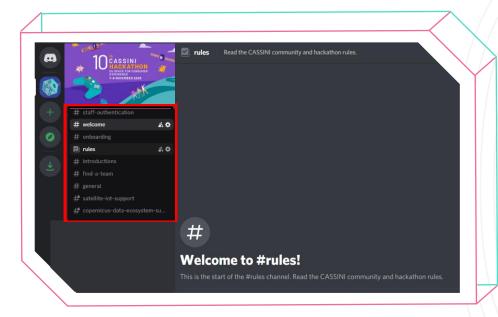


## Engage with the hackathon community on discord

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**

```
# find-a-team
# join-your-local-hub
```













## **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 winning teams who will win 100 hours of expert mentoring each.

12 November Wednesday

20:00 (CEST)



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



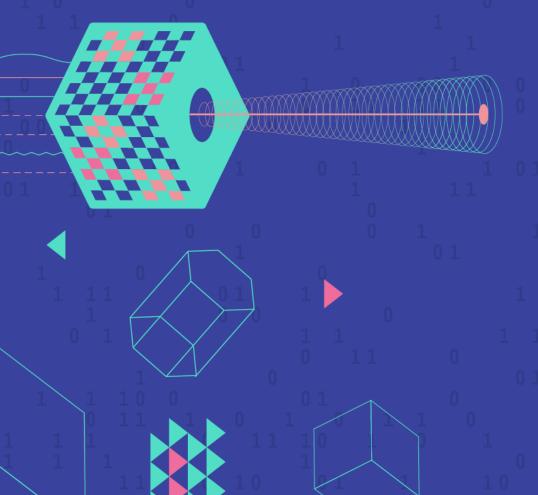












# Mentoring Programme

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 our mentoring programme

Three winning teams can benefit from 100 hours of mentoring each 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!





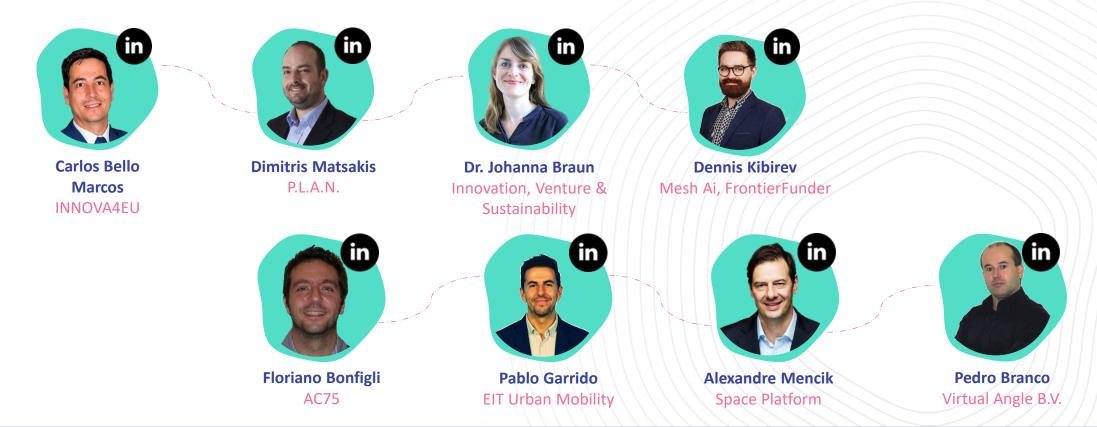






## Meet some of our mentors

**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:







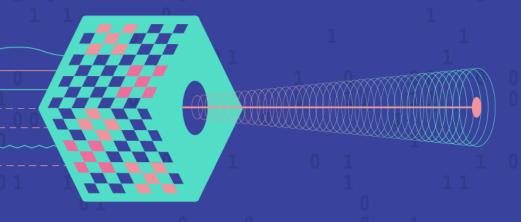
















# Register for the hackathon at

https://taikai.network/cassinihackathons/hackathons/eu-space-consumer-experience

