HACK Digital Sea'21:

Online hackathon requirements and guidance

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Content

1. Background and scope of HACK Digital Sea'21

HACK Digital Sea '21 is an international online hackathon organized by AgriFood Lithuania DIH, Riga Technical University, Tartu BioTechnology Park and dedicated to researching novel solutions and approaches towards digitalization and EU Green Deal goals.

The strategic approach of HACK Digital Sea'21 is aimed to inspire experts and thinkers to participate in digitalization of sea related areas as well as to reveal new digital and other innovative solutions that can promote:

- ✔ the development of green ports;

- ✔ reduce pollution and the impact of shipping;

- ✔ preserve natural biodiversity;

- ✔ strengthen food value chains;

- ✔ create safe, healthy and high-quality food from aquaculture;

- ✔ promote the use of renewable energy sources;

- ✔ make more efficient use of logistics;

- ✔ and create a socially friendly environment for all.

2. Topics and Challenges

General theme of the event is **Digital Sea**. It covers any solutions or ideas contributing to the digitalization of sea-related industry or interest areas. Other innovative (not related to the digitalization) solutions are also welcome.

The hackathon consists of 4 pillar topics, with each of them representing a domain for innovation and its respective challenges. Each team can choose one of the topics and state a challenge related to it, which it will be addressed during the hackathon.

All challenges are highly relevant and market-oriented. The challenges are formulated in close cooperation and consultancy with stakeholders in the aquaculture sector, sea logistics and energy industries, environmental sector, and innovation companies.

Teams that are invited to participate in the hackathon will be required to choose and state the pillar topic and challenge they will be working on throughout the event. A list of topics is outlined in the table below and is also published on the hackathon website (www.hackdigitalsea.lt).

Teams that join the hackathon will be required to declare the challenge they seek to address during the hackathon kick-off online event, which will be held on **July 3rd**.

Pillar topics	Description
Precision Fishing and Aquaculture	The Baltic Sea is an important part of our food systems. However, the low level of exploration of the Baltic Sea poses a number of challenges, such as poor fish nutrition, migration, disease detection, digital traceability of the seafood or the inability to use fish food waste efficiently. Excessive fishing, the use of bottom trawls and fisheries have caused great damage to the ecosystem of the Baltic Sea.
	In addition, the ecosystem of the sea has untapped potential – for example, biomass produced from macroalgae can be used as food and consumables, however, growing and harvesting macroalgae is still in its infancy in the Baltic Sea.
	In this hackathon, we will look for sustainable fishing, innovative food and advanced technological solutions that enable untapped marine potential, increase biodiversity and address existing ecosystem challenges.
Environmental sustainability	The Baltic Sea is the fourth most polluted sea in the world, which is severely affected by chemicals and eutrophication. It is the most densely trafficked sea in the world with as many as 2000 ships operating at the sea simultaneously. In addition, residents of port cities suffer from air and water pollution that is dangerous to their health.
	Digital solutions enabling the development of green ports, the collection of data in the Baltic Sea, the identification of sources of risk, the reduction of the impact of pollution and shipping and innovative educational approaches could be a rapid step towards a more sustainable Baltic Sea ecosystem. These are the solutions that we are looking for!
Advanced logistics solutions	Shipping is a particularly important part of the world's logistics infrastructure, which is closely linked to other means of transport (especially railways). Advanced logistics solutions allow goods to travel faster, keep food fresh and save fuel resources. However, each untapped logistics opportunity has an impact on environmental, health and financial sustainability.
	We expect smart, creative and innovative solutions that will enable more efficient use of logistics opportunities, from autonomous, environmentally friendly shipping

	solutions to more efficient delivery systems and their better integration into the entire transport infrastructure.
Renewable energy	Blue energy is a huge untapped energy potential of the seas that will receive a lot of investment in the near future, generate significant economic returns for society and help protect the environment. The European Commission has set a target to scale up the amount of renewable energy from the sea 5 times by 2030 and even 25 times by 2050. In addition, a variety of other advanced inter-marine power bridges connecting different countries and continents exist.
	We invite you to offer innovative solutions that will help unleash and exploit the potential of marine energy!

3. Application and Selection process

HACK Digital Sea'21 is organized as a team-based hackathon. While individuals are invited to register for the event, all individual hackathon participants will be required to either form a team with other individual participants, or join a pre-existing team. Team formation or ascension to an existing team can be before or in the beginning of the hackathon.

Teams participating in HACK Digital Sea'21 need to meet the following eligibility criteria:

- The team needs to be composed of 3-5 team members, with at least one member fluent in English and able to represent the team throughout the duration of the hackathon;

- Teams can be composed of students, researchers, experienced innovations and/or startups, coming from the Baltic region, EIT Food RIS countries, or other EU countries. Teams can be international with members coming from different eligible countries;

- The team must consist of members with diverse technical and business competencies. It is recommended that at least one team member should have prior knowledge in the domain of the targeted topic;

- The team must confirm and ensure their availability to participate throughout the entire hackathon period, as well as to follow the rules and requirements set out by the event organizers.

The teams or individuals interested to participate are required to register for the hackathon by filling out the registration form on the event website (www.hackdigitalsea.lt). During the registration process, the teams or individuals will be asked to express their interest in a particular pillar topic and nomination category. All teams or individuals interested in contesting for the Mature Innovation nomination are required to express their interest during the registration process.

Registrations should be submitted on the event website no later than **2021 June 27th** (Sunday) **17:00 pm** (CET). Unless the registration deadline is extended (new date would be announced on the website and social media)

All registrations will be reviewed and their eligibility validated by the event organizational committee. Only selected teams or individuals will be contacted via email and invited to participate in the event.

4. HACK Digital Sea'21 phases

The hackathon will be carried out in five phases:

1. Team registration and selection phase – until June 27 [th]

During this phase, an outreach campaign will be carried out to attract prospective teams to participate in the hackathon. Potential participants will be contacted both through general public communication channels, as well as through direct contact. Every team or individual interested in participating in the event will need to meet the eligibility criteria, register their participation on the event website and receive a formal invitation (for more details see *3. Application and selection*).

In order to participate in the hackathon, at least one representative of each team must attend the opening event and participate in at least one of the mentoring sessions of the first day. All of the team members must participate in the mid-term review of the project with the appointed mentors during the evening of the first day (Saturday) of the hackathon.

This phase can be prolonged, if the registration deadline is extended.

2. Hackathon initiation phase – from July 3th to July 4th

During this phase, the hackathon will be officially initiated. By July 2nd, all invited teams, as well as hackathon mentors, stakeholders and other associated partners will receive information about the hackathon kick-off event.

The official start of the hackathon (kick-off online event) is scheduled to take place on July3[rd]. During this event, hackathon participants will be introduced to the overall goals and activities of the event, as well as to the hackathon schedule and the team of mentors. Each of the 4 pillar topics will be presented by experts of the particular domain, and each team will be asked to conduct a brief presentation of themselves to mentors, other participants and hackathon organizers.

Teams will be asked to finalize their choice regarding the challenge they wish to address by July 3rd.

Afterwards, the teams will be assigned to appropriate mentorship tracks.

3. Mentoring phase – evening of July 3th.

During this phase, teams will be engaging with mentors, developing solutions that address specific challenges and refining their value propositions.

Internationally recognized mentors with extensive expertise in aquaculture, sea logistics, energy and environmental technology and innovation will provide mentorship to the teams participating in the hackathon. Mentorship will encompass both relevant technical mentorship, as well as business related mentorship to help with the adaptation of the outcomes to the market needs and business best-practices. Stakeholders (the potential end-users of the solutions) will also participate in mentorship, providing teams with valuable insights regarding the issues faced by the particular sea sub-sectors and practical guidance.

Mentoring seasons will usually take place on the evening of July 3rd during mid-term review of the project.

4. Finalization phase – on July 4th

A solution and pitch finalization event will be held on July 4th (Sunday afternoon).

All teams will be expected to deliver their pitch presentations, which will be streamed to a panel of international jury members (see *5. Nomination procedure and criteria*).

Pitch presentations will take place in the order of the Nominations and will start from **I – The Most Advanced Solution**, then **II - The Strongest Idea**, and at the end **III - From Zero to Hero.** There will be a break between each nomination.

5. <u>Award phase – on July 8th</u>

Teams that receive the highest amount of evaluation points in one of the three nominations will be announced the winners of that nomination and receive the assigned prizes (see *6. Hackathon prizes*).

The final award ceremony will take place during the Digital Sea conference on July 8th, during which the winning teams will have the opportunity to present their innovative solutions to an audience of top-level stakeholders (policy makers, industry representatives, researchers, innovation developers).

5. Nomination procedure and Criteria

All participating teams will be able to register their solution or idea for three different nominations:

I - The Most Advanced Solution;

II - The Strongest Idea;

III - from Zero to Hero.

The first nomination will be open to the teams that have already prepared a specific solution, product or prototype and, during the hackathon, they will prepare its presentation and commercial exploitation plan.

The second nomination will be open to teams that already have interest in pursuing a novel innovation idea within a given pillar topic, but not necessarily have the appropriate knowledge or experience to implement it technologically.

The third nomination will be open to the teams that will start generating their idea from the blank page and are focused on the technological development of it - meaning, that the team owns the necessary skills and experience to create an initial prototype or fragments of it during the event.

During the registration, the teams can show their interest in one of three categories. Depending on their productivity level during the hackathon, they will have to specify the nomination they prefer to choose before the pitch session begins. If the team comes to the hackathon and already has a products/solution and/or is developing it, they must inform the organizers about it.

The teams will be evaluated separately for each nomination, according to the respective criteria.

All teams participating in the hackathon will be required to deliver a pitch presentation on their proposed solution to one or several pillar topics of HACK Digital Sea'21. The pitch will need to be delivered in the format of a video presentation during the final event, planned on July 4th.

Pitches will be evaluated both within the context of the specific topic and within the context of the overall hackathon.

All pitches and the solutions presented within them will be evaluated by a jury of international experts. The jury will consist of internationally recognized experts from the technology and business domains, as well as representatives of the aquaculture and sea logistics industry, energy and environmental domain and innovation sector stakeholders.

Teams will be categorized according to the pre-selected nominations and every jury member will individually score each hackathon team, according to the criteria (see table below). The scores will be aggregated, averaged and a unified list of teams and their scores will be produced. The teams with the highest scores will be announced as the winners of the hackathon and they will win the respective

1st place of the pre-selected nomination. In the case of a tie, the juries will choose the winner. The decision made by the juries will be final and unappeasable by any parties involved in the hackathon.

I - The Most Advanced Solution:

Criteria	Description	Score
Novelty	Proposed solutions will be scored in respect to the novelty of the employed approach, creativity (where applicable) and innovativeness of the solution. This criterion includes the aspects of: ● Technological novelty and innovativeness; ● Business innovativeness and uniqueness of the value proposition.	0-5
Technological level of preparation	Model of existing prototype or specific calculations and drawings.	0-5
Cross region	The idea and solution are tailored to different regions.	0-5
Positive impact aspect	Designating and justifying three main impacts: environment, society, business.	0-5
Feasibility	Proposed solutions will be scored in respect to their potential to be developed into fully market ready products or services. Feasibility encompasses the aspects of: ● Technical achievability; ● Soundness of the business model; Scope of efforts needed for commercialization.	0-5
Market demand	What exactly decides and who will pay for it (price, cost and/or taxes).	0-5
Commercialization potential	Proposed solutions will be scored in respect to their potential to be reused, adapted and scaled on a European level. This includes the aspects of: ● Technological and methodological scalability; ● Functional scalability and adaptability for different use cases; Potential to be used in different market conditions.	0-5
Progress during hackathon	Proposed solutions will be scored in respect to the progress made during the hackathon in the development of the idea that the team already had before the hackathon.	0-5
	Evaluation sum:	0-40

II - The Strongest Idea:

Criteria	Description	Score

Positive impact aspect	Designating and justifying three main impacts: environment, society, business.	0-5
Novelty	Proposed solutions will be scored in respect to the novelty of the employed approach, creativity (where applicable) and innovativeness of the solution. This criterion includes the aspects of: ● Technological novelty and innovativeness; ● Business innovativeness and uniqueness of the value proposition.	0-5
Cross region	The idea and solution are tailored to different regions.	0-5
Feasibility	Proposed solutions will be scored in respect to their potential to be developed into fully market ready products or services. Feasibility encompasses the aspects of: ● Technical achievability; ● Soundness of the business model; Scope of efforts needed for commercialization.	0-5
Market demand	Market demand in the Baltic region and EU.	0-5
Impression factor	Very good first impression (the topic of the idea, or its presentation).	0-5
Presentation quality	Since it's more of an idea, it has to be inspirational, so it's important to present it properly: ● A concrete idea; ● Reasoned justification; ● Smooth presentation.	0-5
Commercialization and market potential	Provide a brief analysis of the market, existing competitors, and the advantage over them. Pay attention to the indicative cost of developing the prototype, the selling price, and its possible payback. If possible, indicate them.	0-5
	Evaluation sum:	0-40

III - From Zero to Hero:

Criteria	Description	Score
Technological level of preparation	Technological progress and result during event.	0-5
Novelty	Proposed solutions will be scored in respect to the novelty of the employed approach, creativity (where applicable) and innovativeness of the solution. This criterion includes the aspects of: ● Technological novelty and innovativeness;	0-5

	● Business innovativeness and uniqueness of the value proposition.	
Cross region	The idea and solution are tailored to different regions.	0-5
Positive impact aspect	Designating and justifying three main impacts: environment, society, business.	0-5
Feasibility	Proposed solutions will be scored in respect to their potential to be developed into fully market ready products or services. Feasibility encompasses the aspects of: ● Technical achievability; ● Soundness of the business model; ● Scope of efforts needed for commercialization.	0-5
Testing	Test results achieved.	0-5
Commercialization and market potential	Provide a brief analysis of the market, existing competitors, and the advantage over them. Pay attention to the indicative cost of developing the prototype, the selling price, and its possible payback. If possible, indicate them.	0-5
	Evaluation sum:	0-35

6. Hackathon Prizes

After the evaluation process is finalized and results announced, the winning teams will be awarded with prizes and additional benefits. Based on the evaluation of an international jury of experts, the top-scoring team from each of the nominations will be selected and announced as the winners of the hackathon.

The nominations and main prizes are as follows:

Nomination category	Description	Main prize
The Most Advanced Solution	1st place winning team with the most mature and exploitation-ready novel solution.	€4 000
The Strongest Idea	1st place winning team with the most developed innovation idea and concept.	€4 000
Zero to Hero	1st place winning team with the most advanced solution built with the duration of the hackathon.	€4 000

In addition to the main prizes, teams will receive additional awards and non-monetary prizes from event organizers and partners that will be determined at the full discretion of the particular partners.

7. Obligations and Requirements

● Teams must confirm their availability to participate throughout the entire hackathon period, as well as follow the rules and requirements set out by the event organizers;

- Not following the rules and requirements set out by the event organizers can result to the disqualification of the team from the hackathon, at the discretion of the event organizers;

- Key technical details and know-how of the developed solutions are considered as intellectual property of the teams who developed them;

- All information presented publicly (eg. via pitches) during the hackathon (including initial ideas, developed concepts, technical details and business models) is considered as public domain knowledge.

- The organizers have the right to edit the Requirements and guidance document until the beginning of the hackathon on July 3.

- If less than ten teams participate, the organizers keep the right to adjust the prize fund

8. Hackathon organizers

The international HACK Digital Sea '21 online hackathon is organized in close cooperation by partners from three Baltic States (Estonia, Latvia and Lithuania, including, research and development organizations, government institutions) and other international partners.

Organizers:

AgriFood Lithuania DIH www.agrifood.lt	**European Institute of Innovation & Technology (EU)** https://www.eitfood.eu/	**European Union funds** https://www.europa.eu/
Tartu Biotechnology Park https://biopark.ee/?lang=en		**Riga Technical University** https://www.rtu.lv/en
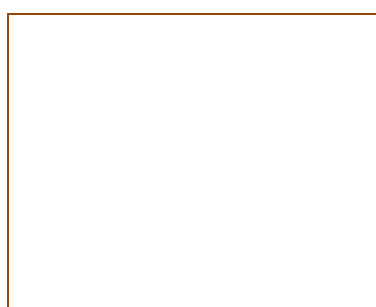
Partners:

Ministry of Environment of the Republic of Lithuania	**Klaipeda University**	**Institute of food safety, animal, health and environment**

https://am.lrv.lt/en/	https://www.ku.lt/en/	https://www.bior.lv/en

UNIVERSITY OF TARTU **Estonian Marine Institute** **University of Tartu Estonian Marine Institute** https://mereinstituut.ut.ee/en		

9. Contacts and Dates

HACK Digital Sea'21 website – **www.hackdigitalsea.lt**

Email for additional information and questions – ask@hackdigitalsea.lt

Or call us:

+370 699 43227 (Lithuania)

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June 27 th
End of team registration

July 3th
Start of mentorship sessions

July 8th
Awards at the *Digital Sea conference*

July3th
Hackathon kick-off online event

July 4th
Final sprint and pitches